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youtube video:

https://www.youtube.com/playlist?list=PLQrGTjc8Clt\_eJ1FQLesnnHxl21t4z3uf

hello everybody good afternoon nice to see some of you at least one of you uh a few more cameras would be nice so i can see your handsome and pretty faces hello there oh there you go nice to see you okay here we go so my name is veronique i hope you can see my you can hear me okay please give me a thumbs up if you can hear me good fantastic can you see my slides give me a thumbs up excellent so we're all set fantastic i had such a fun time teaching that class in the fall so i'm looking for just as much fun if not more with this new crop of students so i'm here to teach you about financial markets financial institutions so let's see what i'm going to be talking about first of all on zoom thank you for all of you who've turned on your your camera it's really nice for me to be able to see you so if you can this is would be very very nice for me and uh so when you are asking questions or in the breakout rooms make sure to unmute yourself otherwise uh keep it on mute so i don't have background noises um and i hope you will be active participants in this class either by talking or by the chat or by posting on the discussion board so before we start i want to introduce the most important person benson yeah hello hello everyone nice to meet you benson is our ta for the class he's the best ta in hkust and he is very very quiet you can always return to him um via email so if you don't feel comfortable enough reaching out to me you can certainly feel comfortable reaching out to benson okay so any questions that you have you can email him or me and we will do our very best to answer very quickly okay so um all right so what's the objective for the course uh it's a sweeping overview of financial markets and institutions i will teach you some very basic discounted cash flow and valuation but it's only a small part of the course the biggest part of the course will be teaching you what are the major types of financial institutions what they do how they overlap with each other how they are regulated and as much as possible we will look at what's going on right here in the asian market unfortunately a lot of the courses you have and a lot of the textbooks are very u.s centric and we cannot avoid talking about the u.s because obviously the us dollar is still the dominant reserve currency and the financial systems rely on u.s dollar and u.s payments to a large degree but we will zoom in to asia and particularly hong kong to talk about how the industry is acting out here now my approach is very practical and that's because i used to be a banker i was a banker for over 20 years before i switched completely by chance to teaching about what i used to do which i've now been doing in this fine university for over 15 years so i will incorporate a lot of elements from real life through sharing about what's going on out there okay now of course you are all very interested in grading and that's generally the only thing you care about in the first session so the grading components are here for you they are also spelt out in the syllabus which is posted like everything i use on the canvas website so you have all the information on canvas now i'm going to spend a little while on explaining the grading criteria so that we are crystal clear on expectations okay so i have different components here and benson and i have been tinkling with percentages to kind of reflect the weight and the workload that we expect from you so as you can see there's two exams that one in halfway through the course the midterm and one at the end the final however i don't call them mid-term and final because they are non-cumulative so the first exam covers the first half of the course the second exam covers the second half of the course both exams will be like the course itself online only and will have multiple choice true false questions and some open questions okay it will be open book which means you can use pretty much everything from the notes you've taken to the slides to everything to the internet but don't think it's going to make it any easier because you will have a limited time to answer the questions so if you spend a lot of time searching for the answer you won't have time to complete the exam so actually making it open book has made it harder okay now since each of the exams is 20 of the grade just because you get good grades in the exams don't mean you get an a okay the grade also includes group work so group work is the group assignments that you have and you will have two assignments one of them is going to be a market news voice over powerpoint presentation i'll explain all that later the other one will be finding interesting videos and articles on a specific topic that your group will be assigned we will make up the groups for you okay so that will means you will have to demonstrate teamwork skills i'll come back on the details in a minute you also have four online quizzes which will be open during the day they will be in the same format as the final as the exams that means multiple choice true false questions open book but you'll have a limited time as well so very much the same format those four online quizzes are uh split over the duration of the course so think about one quarter of the course first quiz another the second quarter second quiz third quarter third quiz fourth quarter final quiz all right so eight percent each and you have participation so participation means any way you can contribute to the class which can be through raising your hand to ask or answer questions asking questions in the chat box posting comments on the discussion board on canvas and last but not least in using the iprs so we will be using iprs a lot during the course this is to test the concepts as we go through them okay my philosophy is to come up with concepts test you on it first through the iprs then it will be in end of chapter questions and it will be on the quizzes and then on the exam so by the time you reach the exams you're kind of used to the kind of questions that you will be facing um so participation is important okay but it can take many formats so i am aware that some of you are shy and you don't want to raise your hand and you don't want to be seen as a teacher's parent etc that is okay you can do it through discussions through chat etc all right now a very important thing and let me say it very slowly and very clearly so that you pay attention okay pay attention to this i cannot give everybody an a i will repeat this i cannot give everybody an a not allowed so not everybody will get an a sorry so in order to shoot for an a you will need to work hard and every element of the grade counts all right notice the exams is 40 so if you only do the exams you will not get an a okay and also our students tend to be super smart and super competitive so it is not a walk in the park it's not an easy class right so you have time to drop it if you worry all right so i and benson take a lot of time to come up with the grade short of an obvious mistake i will not change the grade if you identify a mistake which has happened rarely but it does then we will in-depth review the case and if there is indeed a mistake then we will change the grade short of that nope no no no am i clear am i being clear yes i am being clear right okay good all right so with this on we can move on yes i will answer all these questions okay so participation eight percent of the grade as i have mentioned you can do it by answering the questions that i put through the polling question iprs question on the chat board on the canvas discussion board by raising your hand etc and by the way it's about quality not just quantity so iprs is a system that we use in hkust which allows you to respond to questions that i will ask you through the system okay so it's an app and benson do you want to put in the chat box oh you did it oh he's so efficient he's already put it in the chat so the iprs you have to log in with it every time we have a class together because i will be using it okay now whether or not you answer the right question doesn't matter okay so all i want is for you to participate so it it doesn't matter if it's the right or wrong answer as long as you participate okay all right online quizzes so there's four of them and it will it is designed to check at every point that you have assimilated the key concepts all right so they are spaced out throughout the course you will take them online they cover only what we covered in class so the best way to prepare is by paying attention in class and if necessary viewing the recordings of the class they will help prepare you for the exams because the exams follow the same type okay there will be very similar questions a little bit tougher but very similar uh okay now group assignments so benson will form you into depending on the final number of students after the attend drop period groups of six or seven students those group have two major assignments the first one is to submit one short video and one short article that i can use for the course related to a topic that will be assigned to you okay and this will be due in week four so benson will communicate with each of the groups and will assign the topics for each of the groups for the second assignment this is what i call market news and both of these assignments are designed to help you connect what's going on out there in the real world with what we're talking about in class so the second assignment is what we call market news so each group has to provide us with a digest of significant financial news in the week before the deadline that you have which means that each group will have to follow financial news before the deadline pick one and present it in a power voice over powerpoint so we don't have time to listen to all the groups otherwise i wouldn't be able to cover all the materials but i i expect these uh voiceover powerpoint presentations uh and i will be grading them for relevance how you present how you articulate your discussion about the news the quality of the slides the quality of the recording whether all the group members are playing some part in it so all of this is going to be important now we have groups you didn't choose them you don't have to work together this is going to present some logistical nightmares because we are all online and i recognize that i also recognize that not everybody will pull their weight in the team so occasionally there are some pre-writers which means that they don't do anything and ride on the work of their teammates which of course is not acceptable so in order to find out who these people are we have peer evaluation so if the results of the peer evaluation and we are using ipo right benson we use then people who are identified as free writers will see their grade down not on the course on the group work so there will be a great consequence okay so i see that benson is feeding information to all of you on the on the chat all right so i'll just keep zooming through the slide all right so the exams the the first exam will be during class time the second one will be during the final exam period so the date will be determined by the university you will take those exams online there will be absolutely no makeup okay and you have to be uh aware that we take cheating very seriously so if you cheat you will have to bear the consequences and we've gotten much better at identifying cheaters all right so in this class we'll do some calculations um we recommend that especially if you're going to do finance courses later it is worth investing in a financial calculator for this class you don't absolutely have to because the exams are open books so you can use an excel spreadsheet but it's better if you have a calculator so i saw that yeah i had questions on the textbook there is no required textbook okay i'm not using a textbook because textbooks are written by academics for academics and i don't like them so i if you are more comfortable with the textbooks there are two suggestions here you do not have to buy them you do not have to use them and i don't cover all of their materials and in fact i do disagree with most of the textbooks so the only materials you need are my slides which are my intellectual property so please don't put them on course hero or whatever okay you would be in an illegal situation which is not good all right now how to study for this class pay attention to all the components of the grade prepare all your assignments on time attend the classes if you cannot for whatever you know if you're sick or something happens review the recording okay not everything is on the sides i will provide background and content that is not necessarily on the side so you will need to pay attention review the slides and the notes carefully before the exam the prs questions the quizzes are all designed to get you to the exam questions so they follow the same format ask questions if you don't understand ask questions raise your hand catch me after class if we on campus make an appointment email whichever way and participate okay let's take a deep breath and okay so what are we going to be doing is there attendance for the course roman no if you don't show up you can participate if you can participate you'll have less points on the participation grade so i don't record attendance okay you are all grown-ups i think so it's up to you to decide you know i don't want to be managing attendance i find this very outdated form of education you should know what's good for you all right so the course content this is my map for the course so every time that as we progress we will move along this map we will start with an overview then my thing is all out of work then we will do the first quantitative part of the course which is foundations of interest rates in there we will look at discounted cash flow calculation basics and the basics of interest rates then we will dive into financial institutions there's a lot to cover we'll start by the sell side by which i mean commercial and investment banking then we'll move to the buy side where we will be looking at traditional institutional investors and then to alternative investors then we'll have the second quantitative part of the course which will be very basic valuation exercises really basic and then hopefully we'll have time we will zoom on to regulation so we'll talk about banking regulation and monetary policy okay so the lectures are recorded uh they're available on canvas they're subject to intellectual property uh please don't copy disseminate them without consent uh no other recording or taping is allowed my lecture slides are my property do not share it or post it anywhere we do not tolerate plagiarism or cheating there are sanctions on this please be aware of the rules for academic conduct at the university okay so wrapping up on this part is my contact information so i am old and i am allergic to technology so i correspond by email or face to face the best way to reach me is by email because i will respond fairly quickly uh here's my telephone number in the office uh most people don't actually use it and i'm in the department of finance and the fifth floor of lsk however i will only meet you if you make an appointment and the reason for that is that i have a lot of other responsibilities in the school which makes my schedule completely unpredictable from one week to another this being said i love meeting my students i love exchanging with you i'm happy to meet you for a cup of coffee as long as you make an appointment now benson uh is also very happy to communicate with you preferably by email and again by appointments his schedule is a little bit unpredictable this term okay any questions so far all right well you're going to have to learn to ask questions why because finance like every profession has its own language and because i am a banker by experience i use a lot of finance language a lot of terminology and a lot of jargon and sometimes i forget that you don't know the language so if i forget to explain a term that you don't understand please ask and it's very very important that you have the discipline to ask the meaning of the terms because terms can have different meanings for different parts of the industry so if you assume the person in front of you knows the meaning of the term but they use their background then you're talking at cross purposes for example spot spot has three different meanings depending on what part of the financial market you're talking about in foreign exchange it means you're exchanging one currency for another today spot in the treasury yield curve is a zero coupon yield curve start in determining the value date means trade date plus two business days so when you use spot it's a finance term but depending on who you're talking to they have a different understanding of it so it's really really important to go back to definitions the second reason why you should always ask questions is that we should never take anything for granted and what we have found and what we keep finding out is that people assume certain things without even realizing they're making assumptions so i'm going to push you really hard to recognize what assumptions you're making and to question them because if we question the assumptions a little bit more we probably wouldn't end up in the mass that we ended up in there's not much new under the sun so finance you will find as you practice it is very much a game of lego so they are building blocks and then you assemble these building blocks into different financial products at its heart finance is fairly simple we make it look complicated okay there are no stupid questions seriously in my class you have no stupid questions and i wish people would have the courage to ask stupid questions chi tao is telling me do i cover the crafty cryptocurrency market the answer is no i do not i have already difficulty covering all the real important stuff so if you want to read about the crazy crypto stuff i'm happy to refer lots of materials to you and sadly i don't have all the answers so sometimes you will ask questions and i will not have the answer and then it's fun for me because then i get to find out the answer so i'll do research and sometimes it's somebody in the classroom who has answers so chitao you're interested in crypto let's do a quick survey of who in this audience has experience with cryptocurrencies type it in the chat box as moments there you go a few perfect so now chitao you have a group of people who have the same interest as you yay perfect good okay all right so we're going to start with a big overview and in that overview i'm going to start because some of you are not from the fire from the business school by talking about the language of business and then we will put our heads together to try to understand what is finance and why do we need a financial system then we'll talk about the players and we'll talk about how it all works so i'm going to step back from finance a little bit and look at the business world and there are some really important things to understand so when you want to set up a business the first thing you need to decide is what legal structure you're going to use and there are many many kinds of legal structures and it goes from mom and pop shop sole proprietorship all the way to publicly listed limited liability corporations the choices that you have in terms of legal structure depends on the legal system of the country where you operate so one of the choices is well do i want to set up my business here in hong kong in mainland china in the us in europe wherever and that's because the legal systems are different and since the legal systems are different they will have different legal vehicles that you can use with different implications okay so it's very important to understand and whenever you're talking about business it's important to understand what is the legal system that is underpinning all that so the country that you operate in drives the legal has a specific legal system in hong kong our legal system is inspired by english law so because we are a former british colony we inherited our legal system from the uk specifically england because by the way scotland has a different legal system in the u.s you have two levels you have federal law and state law and each state has a different legal system so state law in new york is different from state law in delaware if you go to continental europe our legal systems are inspired by roman law which is codified so everything is written in a code very different from the systems derived from english law where the law is driven by precedence is driven by the courts okay so all this to say the thing you need to know the legal system is important and when you're going to do business you need to know in which system you're operating now in the finance industry we have many types of legal structures for example mutual organization and here you need to pay attention this is a concept that will be coming back in a mutual organization the shareholders are the customers all the customers are the shareholders example mutual funds in a mutual fund as an investor you get shares in the mutual fund so the investors the customers are the shareholders in mutual banks the depositors the customers are the shareholders okay in mutual insurance companies the insured parties the investors are the shareholders so mutual organizations exist across the economy and specifically in finance now that has very important implications because since the customers are the shareholders you have an alignment of interest and the management is therefore having to take into account the interest of their customers because they are the shareholders okay now many organizations are limited liability companies so the existence of corporations goes back a couple of centuries to the uk okay and many financial institutions are limited liability companies very often listed but not all of them um in the alternative investors section we will talk about partnerships so in partnerships you have partners who bear the responsibility of the business in alternatives we will talk about a specific kind of partnership which is a limited partnership and you have two types of partners the general partners who are the fund management company and the limited partners who are investors and because they are limited partners they have limited responsibility of course throughout the economy there are many many many other types of structures uh the most common ones small businesses typically are sole proprietorship but in business classes we tend to focus on large organizations we tend to focus on limited liability companies okay now let's zoom in on the corporations the corporation and specifically publicly listed corporations are limited liability companies and why do we call them that because when you invest in limited liability company your liability your responsibility as an investor is limited to the amount you invested in okay this is very very different from a sole proprietorship if you own a business like your local bakery in your name then you are responsible for everything and if the business goes bust your creditors can can come after you for your own net worth okay not so if you're a shareholder in a limited liability company it is important to understand that a corporation is a legal entity in its own right it exists as a legal person it is responsible okay not the investors all the shareholders do it put money in the business and that's it then the corporation hires a management team to manage it the corporation is responsible not the individual shareholders okay and those shareholders it's basically all they're responsible for they put the money in there and that's it they're not responsible for anything else now the corporation the legal entity has a governance structure so you appoint a management team that management team then reports to the board of directors who is supposed to represent the interest of the shareholders why does it matter why this whole introduction and it matters very much because the choice that you make of legal structure will have very important implications for the risk that different parties take particularly the investors in the business if you invest in a publicly listed corporation by buying the shares you're taking very little liability in fact your only liability is to put in the money when you get the shares that's it if you invest as a partner then you have much more responsibility in a normal partnership then you're responsible together with your partners for the entire business obviously as a sole proprietorship you're responsible for everything the way you are taxed is going to be different you may have conflicts of interest arising when the management of the legal structure is not in agreement with the investors in the structure the ability to raise more capital depends on the risks that investors will take by providing you the capital so that's why it's a lot easier to raise capital when you have a corporation set up many tiers as a sole proprietorship and of course it has implications for survival of the business so if it's in name only if it's your own business when you die the business is likely to die with you unless you've set up a succession plan okay so that all very important consideration now tak pue has asked me i'm aware that most of the u.s listed securities are incorporated in delaware any reasons behind it so first of all it's not the securities that are incorporated it's the corporation that issue the securities that are incorporated in delaware and the reason for that is that corporate law in delaware is far more accommodating for the corporations than other state laws okay shiraz has asked me what do mutual organizations do well it depends on the mutual organization if it's a mutual fund it's an investment vehicle if it's a mutual insurance company then it's an insurance vehicle in fact exchanges like hong kong exchange used to be a mutual organization so you can find a mutual organization structure in many different parts of the economy all right little pop quiz [Music] i've been talking already for ah 45 minutes this is terrible okay time for some action here all right first question what makes mutual organizations different so you can raise your hand or you can type in the chat i can see some of you have already typed in but it's an opportunity to to talk if you want to very good okay so indeed what you need to remember about mutual organization is the shareholders are the customers okay so it makes a very very important difference in terms of alignment of interest right next question if my friend and i are lawyers and we want to set up our law firm what legal structure should we use wow look at you you're so fast fantastic wow very good partnership indeed okay so many uh service firms like law firms accounting firms uh tend to be organized as partnerships last question if you are a shareholder in a publicly listed corporation are you responsible for the debt of the company very very good no no no we are not responsible for the debt of the company okay the company itself actually is responsible for the debt all right very good i see a lot of you have been paying attention that is excellent okay now we're going to talk about another part of the business environment which is financial statements so what are financial statements well this basically reports that companies have to present uh and that describe their financial performance okay so there are different countries have different requirements for example in my country in france even if you are not a publicly listed company but you've set up a business you have to file financial statements with the company registrar and these statements are available for anybody to go and check in other countries it's only required for a listed companies okay so the type of statements and how often you should file them depends country by country all right so since a lot of our textbooks are u.s century could tend to talk only about the u.s but be aware that there might be differences and depending on the country in which you operate so the annual report it's called annual report for a reason because it's done once a year it's the summary for the whole year of the business and it is supposed to be verified by an auditor okay so an auditor is basically an accountant that's going to go and check that what you put in the report is correct and that's the theory okay now the auditor is appointed by the corporation so it works for the corporation it's paid by the corporation but it is supposed to protect the interest of the investors because investors rely on the auditor to tell them that the financial statements are a true picture of the financial health of the business let's look at an example open will you okay here we go cathay pacific annual report 2019. you can take any company and look at their latest annual report and then you're going to be looking at so we can see here this is the content of an annual report it typically starts with the statement from the management of the company with key highlights tells you who's in charge and then gives you all the different numbers starting with the independent auditor's report so let me go to the independent auditor's report here we go so kpmg is the auditor for cathay pacific and this is the report so the opinion this is very important word opinion of the auditors and it the key wording is in our opinion the consolidated financial statements give a true and fair view of the consolidated financial position of the group as of december 20 2019 and the consolidated performance blah blah blah in accordance with hong kong financial reporting standards issued by the hki cpa and have been properly prepared in compliance with the hong kong company's ordinance so what the auditor is saying is they think this is their opinion that the financial statements give you investors a true and fair view of the consolidated financial situation of the company the opinion of the auditor is something investors rely on to take the financial statements at face value okay so this is very very important why am i saying it's very important because over the years we have seen many scandals where the auditors gave opinions like this when it turned out all the numbers were fabricated okay so this is not new the biggest scandal was back in the early 2000s with enron okay so the problem with the role of the auditors is that they're paid for by the company but investors rely on them and what they put out there is an opinion under u.s law you cannot be sued for an opinion china however is taking a different look at this this year china has started holding auditors legally responsible for their opinions in a very recent case the chinese courts have held auditors rating agencies and underwriting banks legally responsible for a company going bankrupt so you see how two countries may have two very very different takes on things okay so let me go back to my slides yeah all right so let's take a step back and i'm getting to the end of the what time what time do we finish six right okay so prompt me okay um so very important the financial statements is something that companies have to report on they have to get it verified by the auditors sadly the auditors don't always do their job very very well um and there's been a lot of controversy around that all right now this brings us to accounting standards remember when i showed you the cafe pacific it says the reports were prepared in accordance with hong kong financial reporting standards why because accountants have a language and that language is the accounting standards when i started working when i was your age pretty much every country had a different set of standards every country had its own generally accepted accounting principles so companies reported their financial statements in accordance with that country's set of rules what was the problem with that any problem very good yes rise and uh day yes and amman it's different difficult to compare right it's like when you're talking two different languages and nobody translates right so if you're trying to invest in countries in diff in different countries and you you know it means you have to understand all the accounting standards get really complicated so there was an initiative and it came from europe and it was an initiative to converge the different standards into one common set of accounting standards called the international financial reporting standards or ifrs and nowadays is over 100 countries that are using ifrs or very similar to ifrs so in hong kong the hong kong frs is very very similar to ifrs of course the u.s of course is not doing that the u.s gap is only used in the u.s however u.s gap and ifrs accounting standards bodies have been trying to converge the standards to common standards so there's still some differences of opinion so it hasn't fully converged but it's a lot easier than it used to be and the other important thing to understand about accounting standards is they are not set in stone they evolve they change and when you have changes in accounting standards it has very very important implications for businesses in particular we have recently seen two huge changes affecting banking and insurance this is ifrs 7 for insurance and afrs 9 for thanking all right so i'm not going to give you an accounting class i'm setting the background so that you understand the big picture all right so you're coming from different countries which accounting standards are used in your country so google it okay so we see a lot of ifrs so hong kong and forest so korean forest ah so we have things from indian accounting standards good all right so we see a variety okay ifac muhammad what is ifac okay so there's some i'm not from okay very good all right so see you know it says variety in our class we already have many different accounting standards okay so this is very important to understand all right so make it your objective to find out what accounting standards your country is actually using and is it similar to ifrs or is it something completely different okay now i've talked about the role of the auditor and this is something that is really really important because there is a big difference between what they're supposed to do and the reality now the auditor is supposed to check they're supposed to verify and they can actually somebody was asking earlier in the chat box about qualified opinions and yes you can do a qualified opinions all right now when you look at the auditor's report there are two things you want to check out for i want to check out whether it says true and fair view and whether there is any what we call qualifications and qualifications says wow yeah so it's kind of okay but we spotted a few little things here and you know we might want to dig into it so qualified uh auditors letters is a bad thing you if you have a company with qualified uh auditors you have to really uh be very careful the other thing is that the auditors will give you an opinion taking into account the company as a going business a going concern right so in order to have an unqualified opinion the auditors must believe that the company will survive for another year okay that was a huge problem in the spring last year because with the pandemic and the total uncertainty there were concerns that auditors will start saying well you know we have no idea so how can we give you an opinion that you're still going to be around one year from now right so there was a lot of concern in the um in the economy and with the regulators that auditors would start issuing qualified opinions saying i don't know if this company is going to survive for a whole year and always your opinions should be based on a going concern that the company will survive for another year okay so there's been a lot of really interesting debates about the role of the auditors this has been magnified by scandals there were big scandals last year some scandals related to china and some scandals in europe and the big scandal in europe was wirecard so wirecard was a fintech company in germany that turned out to be nothing but fluff and the guys who funded the company were actually lying through their teeth so there were a few scandals in china but not only in china and the problem was that the auditors didn't see what was going on didn't even do the basic verification and the role of the auditors gente the scandals have shown that auditors have given clean opinions to companies which were fabricating making up their financial statements so they didn't do their job to go and check in detail what was going on okay so lucky and coffee in china wirecard in germany are examples where the auditors did not do their job now in defense of auditors the reality is that the companies pay them but the auditors send the junior staff who generally have no clue to go and do the grunt work the partners don't actually get involved until it's time to build the company for the hours and put the partner's name on it so it's actually a very hard job and should be compensated more but it's a it's a huge it's a huge issue so thanks romana for putting the information for your classmates in the chat box all right okay let's test our understanding of the concepts why do firms have to publish financial reports wow this is nice lots of different responses so yes you're correct it's to provide information for investors both existing and potential investors it's also a legal requirement uh depending on the underlying system uh it can be a regulatory requirement uh yeah very good very good okay second question why does it matter that there are different accounting standards very good yes it makes it harder to compare different companies okay and translating into a different set of standards can be very complicated okay very good last question what is the role of auditors whoops the auditors are not legally liable in the u.s well this is an opinion okay so depending on the system where you are the auditors may not be liable for their opinion it's like the reading agencies we'll talk about them later okay so they're supposed to verify the statements and tell the investors if the financial statements represent in their opinion a true and fair view of the financial situation of the company assuming going concern all right okay so let's start digging a little bit now we talked about financial statements and financial statements typically include four different stats of reports the balance sheet the income statement the cash flow statement and the statement of changes in shareholders equity so i'm not going to give you an accounting class but i'm going to give you some basics so that you understand the terminology all right so part of the problem in business and in finance is we often use different terms for the same concept okay all right so let's start with the balance sheet it's also called statement of financial position what is it it's a snapshot so at a specific point of time it tells you what the company owns which are the assets and what it owes which are the liabilities okay in simple terms that's what it is so this is what it looks like this is a simplified balance sheet so on one side you have the assets on the other side you have the liabilities the assets are broken down between things that are going to be used within a year which we call current assets and things that are going to be used over several years which we call long-term assets these are the things we own on the other side the liabilities is what we owe to our creditors to our suppliers and again we break it down in terms of how long okay so things that we owe within one year is current liabilities things that we owe for longer period is long-term liabilities now why is it called balance sheet because it has to balance and the difference between assets and liabilities is equity okay specifically shareholders or stockholders equity this is the money that investors have put in the company in terms of capital equity capital and it also includes money that has been earned by the business and reinvested in the company which we call retained earnings okay we also call this the net worth okay so remember assets what we own we use the capital to buy this okay this is what we owe these are different sources of capital this being equity capital and the rest will be that capital it's really important that you understand that basic stuff okay it's very fundamental as you go forward with your finance classes so the two sides must balance assets equals liabilities plus stockholders equity if you owe more than you own then you have negative equity which is generally not a good thing but is possible sometimes okay and that has to do with the difference that i will explain later between book and market value okay so we've seen that one of the sources of capital for the firm is stockholders equity so it includes money that investors have paid to buy the shares of the stock and it also include money that the business has made and reinvested in the business okay so what we see in the balance sheet is the book value of equity okay this is what is recorded in the financial statements this is different from the market value the market value of equity is what the market thinks the equity is worth okay so the market value of the equity is basically what is the price of the shares in the market right now and the market capitalization of market cap for short is the price of the shares right now times the number of shares outstanding okay so the book value that is the value of equity as reported in the financial statements is often very different from the market value of the equity it can be lower if the market believes the company is more worth more than what's reflected in the numbers or it can be less so we can look at the situation with our friends in cathay pacific all right so if i just go down in my after the auditor's report i see the consolidated financial statement okay so this is the balance sheet you will notice first of all that the presentation is different so in my slide i had assets on one side liability on the other which is a very common form of presentation this one is different they put current or non-current assets and liabilities together and then current and last assets and liabilities together and then you have the capital and reserves so if you look at 2019 and you look at the equity in hong kong dollars you find 62 billion hong kong dollars now why don't you go and check out on internet what is the market cap of kathy pacific today to google it and put it in the chat box in hong kong dollars so that's per share but i want to know how many yes thank you samson very good okay so i'm seeing 39 billion hong kong dollars so you see an example where the market puts a much lower value on cafe than what the books say okay the book value of equity is at the end of 2019 was a little bit under 63 billion and now the market considers it's worth about 39 billion right so things have happened so why is the market having such a bad view of cafe what happened yes the impact of the pandemic right so people cannot travel all right so there's been the impact of the pandemic but even before that cathay pacific was already in trouble okay they had badly you know the service was not going very well there were fewer customers even before the pandemic and of course the dynamic has made things much much worse so here's an example where the market value of the company is substantially lower than the book value now there probably is in your mind a few ideas of companies which have a higher market capitalization yes very good oh god i can see the name hmm okay oh oh oh no no no no we are not starting on this we are not starting on gme no no no no no no gamestop discussion here stop okay all right so the point here was the difference between both value and market cap okay we've just done this okay now the balance sheet also shows you that you can fund the business from different sources so we have different sources of capital when you start a business at a very early stage as a startup where do we get the funding from we call it the three f's friends family and fools okay uh and you give them shares in exchange for the money that they give you to start the business as you grow you can start attracting financial investors typically in the form of venture capital and then later on private equity and then once you are ready you can take the company public which allows you to attract retail individual investors okay so when you are going public you're getting listed on a recognized stock exchange you can then place your shares with anybody who wants them and then you can attract retail individual investors now this is very important thank you because we will see that whenever you're selling things to retail investors by which i mean you and me widows and orphans the regulators will be watching because the main responsibility of investors is to protect the widows and orphans they don't want little investors to be taken advantage of by big actors in the market okay so we see equity comes in different forms but you can also raise debt capital from different sources so we can borrow money when we're talking about debt we're talking about money that we get for a period of time and we have to pay back we can get them from the bank in the form of a loan we can also get it from investors by issuing bonds we can get it from finance companies in the form of at least we can also get it from suppliers in the form of trade credit so all of this is different forms of debt capital which is money you get for a period of time at a specific cost but you have to pay it back the equity capital you don't have to pay it back okay so very important difference there are many differences but this is one major one okay so remember the names equity capital and debt capital equity you don't have to give it back that you have to give it back at some point okay and of course the debt is the liability part of the balance sheet the equity is the stockholders equity at the bottom okay so i have a couple of minutes left so if you think in terms of the life cycle of the firms okay the capital that you generate will come from different sources at the very early stage here at the light bulb idea you have an idea and in order to make that idea turn into a business you need a little bit of funding at that point there's three f's families and friends and some fools then as you start growing when you have young growth and you are starting to convert that idea into a business that is started to generate revenues then you can attract venture capital as you scale up you will attract private equity you can start raising debt and eventually you go public then the business gets into more maturity okay and eventually will decline so businesses go through life cycles many businesses don't survive very long there are very few businesses that survive more than a hundred years okay so as the businesses evolve through the life cycle it will have different characteristics it will have different growth rate it will have different profitability and it will have different types of investors all right so i put it right there self-funding at the early stage moving on to wide access to capital one of the challenges in business school is we teach you a lot about grown firms we don't teach you too much about the early stages all right so a lot of the things you learn in business school courses have to do with things that large companies can do the reality though is only a small number of very large companies can do these things most of the early stage firms cannot raise cannot access the capital markets cannot issue bonds and they are limited in the sources of funding that they can get all right i'm going to stop here because uh this is i'm i try to stop on time so it's 5 50 which is when the class is supposed to stop if you have any questions please ask them and if not you're free to go and i will see you on friday so if you have any questions please do thank you kids thanks

okay good afternoon ladies and gentlemen it's nice to see you back in the classroom uh so for those of you who haven't yet please turn on your videos i can see your handsome and pretty faces uh good all right if you have any questions please raise your hand or put it in the chat box i hope you don't uh i hope you can all hear me clearly can you see the slides give me a thumbs up yeah fantastic okay let's get moving on then all right so we've been talking about financial statements we've we're in the section about language of business to get everybody sort of on the same page and now we've talked about the balance sheet now we're going to talk about the income statement so the income statement is also called the pnl profit and loss statement so what it means is that it shows you how profitable eetong this is a weird cat behind you it's kind of floating is it a ghost i think it's a little lowly too simple it's really cute though okay this is distracting me from p l okay so income statement tells you in simple terms how profitable a company is so remember the balance sheet is a snapshot at one point in time tells you what assets the company has what it owns and what it owes the income statement looks at a period of time so over that period of time did the company make money okay so it's also called profit and loss or p l and in that context the last line the bottom line is the profits so that's why we talk in terms of bottom lines so when we you hear the term bottom line is how profitable the company is okay so this is what it looks like okay your typical profit and loss or income statement the top line so we talk in terms of top line and bottom line the top line is revenues in other words sales all right so money we get from our customers and then from that you have to deduct all the expenses all right so we have the expenses that are needed to create the product or service which is your cost of sales or cost of goods sold and then you deduct all of the kinds of operating expenses that then gives you your operating income which is how much margin you're making and then after you deduct other income or you add out all the income deduct your interest expenses deduct your taxes the bottom line is your net profit your net income earnings so here's a word of caution the word earnings is misleading because earnings is how profitable the company is not what the company has earned in revenues so remember the top line is sales and revenues the bottom line is net income net profit earnings and this is important because you hear the term earnings per share so earnings per share is the bottom line the net earnings divided by the number of shares outstanding all right one of the key challenges for you as it was for me is terminology is the the words that we use they can be very confusing and also you may have multiple words for the same concept okay so i'm going to try and help you with that but you're going to have to pay attention all right so don't confuse earnings and revenues revenues top line earnings is the bottom line all right okay so the income statement is the second of the four sets of financial statement we started with balance sheet we've just talked about income statement the third one is the statement of cash flows so cash flows is what it says the flow of cash and why is it important because when you record the financial statements we look at it on an accrual basis okay so it's different from the actual cash so you need something to tell you what the accounts are which take into which is based on an accrual basis and how much cash actual cash the company has generated this is why we have the statement of cash flows why is that important because you need cash to pay salaries to pay your suppliers and it's going to be the source of any return on investment so this is the statement of cash flows and what you do is you start from the income statement and then adjust for accrual accounting so adjust for everything that is not actual cash so you start from the net income you add back depreciation amortization which is an accounting concept of the usage of your assets and then you have to incorporate the actual cash effect of changes in working capital then you take into account capital expenditures which don't show up in the income statements and financing activities and all of that once you've done all of this it will give you how much your cash balance has changed over the accounting period all right now let's get back on what we talked about last monday in terms of sources of capital the first question is when a startup raises equity capital from investors does it issue shares or bonds so this is related to what source of financing what sorts of capital are we using all right so remember we distinguish between equity capital and debt capital all right yes very good all right so equity capital is in the form of shares that can be in the form of loans or bonds very good okay excellent okay i know i had a question early on and i'm trying to find it okay okay uh who's that i had a question um so if you put questions it's better to put them to benson uh because he's following the chat i'm trying to to teach and keep an eye on the chat box but if you send a message to me only i may not see it in time all right so there was a question about interest income okay it's income that is money you receive from interest in other word if you have for example a portfolio of bonds the interest that you receive from those bonds is interest income okay income means money we receive okay all right okay five new messages oh boy okay good all right now let's move back to the questions when a company needs to finance a new project with that will it issue shares or bonds very good very very good excellent all right next question if a company is losing money so it's not profitable are its earnings positive or negative well done very good okay last question as a retail investor so retail means individual investors okay as a retail investor like you and me how can you invest in a company to make money from its growth very good very good so indeed invest in the shares all right well done very very good okay all right so we've talked about three major financial statements now there are some turns you will be hearing quite a bit if you read financial news you will hear the terms ebit and ebitda and the term eps so what does it mean well ebitda is a very very useful ratio that financial analyst will track it is earnings so remember earnings the bottom line before interest tax depreciation and amortization all right so this is what they call ebitda this is a useful ratio because it's a quick way to look at the cash that the company generates from its operations it's not a perfect way but it's quick and dirty and it gives you an idea of how much cash the company generates and as a result this ratio is very often used in debt contracts so when banks lend money to a company or when investors buy bonds from issued by a company they want to make sure the company can still generate sufficient cash to pay the debt okay so there will often be in the contract a clause a condition that says the ebitda has to be at a certain level that's what we call a debt covenant the other term you need to know is eps earnings per share i've already mentioned it it's basically your earnings divided by the number of shares outstanding okay so earnings is the net income to net income divided by the number of shares outstanding so let's practice why don't you tell me what is cathay pacific's eps in 2019 so why are you looking at it and then very good so i had a question from shiraz what is amortization so depreciation and amortization is an accounting concept so the idea is okay when i buy a machine over time the machine is going to be broken down is going to be used up it will be wear and tear and you need to reflect that in your financial statements because like a car when you buy it brand new it runs very well but over time the engine you know suffers and you need to replace pieces so the value of the car goes down over time because it's been used so in accounting terms we reflect that through what we call amortization and depreciation different ways to do that the more common one is to take the value of the asset the car the machine and divided by what you expect the machine to last for so what we call the usable life okay and that annual expense is a depreciation expense okay so we use depreciation amortization two different terms from uh tangible machines ppe and intangibles for intellectual property and things like that okay so you will learn that in accounting classes this is not an accounting class i just give you broad notions okay but this amortization depreciation is the accounting way to represent wear and tear all right so you all find out 0.28 very good okay any questions so far anything unclear you can raise your hand or you can type things in the chat no my goodness benson i must be very clear today okay la okay then let's move on so we've talked about the language of business which was kind of like setting the big picture and now we're just going to focus on finance okay so we're going to talk about what is finance and why we need a financial system so what i want to do in this part is get you to really think about you know what is finance and and that's important because what if we don't have finance can you imagine a region without money a country with no banking system a world with no global capital flows so that existed before all right and so i want to ask you so if a country doesn't have banks or a region for that murder there's no banks so what do people do how do they deal with the money that they may have earned barter that's one way okay store at home says jasper okay let's hide under the bed keep in the closet now what's the problem with that dig a hole yeah what's the problem with that money is idle security implications indeed yeah you won't keep up with inflation you don't earn anything complicate the tax system for sure okay let's grows no universal equivalent to evaluate goods putting value on things yes difficult to accumulate wealth trading is difficult this is not a place okay right so you can all imagine how complicated it becomes right so one of the first functions that we will talk about when we talk about banking and why why it's useful is that it gives you a safe place to put the money you have earned and that you don't need right away okay so the savings function so you can keep it at home all right but you do have security issues it doesn't earn you anything um not a great way okay it's it and the flows of money don't happen right so that that's a very uh complicated thing and why is that important why the flow of money is important and how many of you have heard of muhammad yunus raise your hand if you have yes okay a few of you wonderful wonderful okay soon uh sung hak tell me about what do you know about mohannad's universe i don't remember exact country but he built a certain kind of banking system in the region where there was no banking system in uh before all right uh fisi chai tell me about it um yeah i think he uh he established a bank i think it was grameen bank if i'm not wrong in bangladesh uh where he established like micro credit and microfinance very good very good drew do you want any add to anything oh yeah it was i think you wanted because you basically allowed for um mainly farmers and people who were too poor to loan like take traditional loans from banks to actually get money to invest as well that's right very good well great contribution so muhammad yunus is an economist from bangladesh and he became very famous because he set up the grameen uh became crimean bank and it all started with an economic experiment and it's the legend has it that he went to some village in rural bangladesh and saw ladies weaving textiles and got talking with them and they were saying that they you know they were making all these textiles and they were able to sell them but they needed one more weaving machine and they didn't have money saved so they couldn't buy another weaving machine which was restricting how many textiles they could produce and therefore restricting the size of the business so he thought about it and he thought whether he should give them the money or make an experiment and see if i lend them the money okay what are the chances that they will pay me back so it was an economic experiment and it turned out and he knew that no bank was involved here because it was too small an amount and also because these people had no collateral they had no nothing to give to the bank in case they paid didn't pay back so he started that experiment which indeed as one of you mentioned was i think it was uh fisa chai who mentioned that it was a micro credit micro for very small credit so landing at a very very very small level and it turned out that they paid him back and so he grew that experiment and found out that because of peer pressure so by lending to a group where there's been the group providing support in a way they were more pressure on people to pay back the loan and in fact the rate of default that is the number of people who didn't pay back was very very low okay so this experiment was very important because it showed that by having the opportunity to borrow even at a very low small micro level you can actually grow the business so what he was saying with that is the function of banks is very important in both their saving function that they provide the ability to save money in a safe place and the lending function because by being able to borrow to buy the machine this group of women was able to grow their business okay so having that function allows the economy to grow okay so this was a very very important demonstration of the role of finance and the connection with the economy all right now finance is not static it evolves all right so we are in asia-pacific so asia-pacific is a patchwork of many countries and these countries are at different stages of evolution of their economic system and their financial system broadly speaking when you look at the evolution of financial system there's like four major phases so level zero is when you have nothing no banks no nothing all right can you think of any country in asia pacific like that with like stage zero of financial system development any country comes to mind pacifica north korea very close christmas sign well you do have to have people living there though okay yeah north korea well cuba is not in asia pacific and it does have a banking system oh don xiao no in africa all right okay so now there are uh countries like north korea like myanmar that have very limited financial system development okay so kind of really at very very early stages then you have countries where the financial system is primarily the banking system so there's no capital markets no stock market nothing like that all right then ice countries grow and develop financial system you start having stock markets right so equity finance stock market and some countries in asia pacific have tiny stock market really really tiny like maybe a couple of stocks being traded then you start seeing the development of bond markets so bond market is a level of sophistication where you start no longer relying on banks to make loans but where companies can start issuing debt securities and then as you get very sophisticated you know you have securitizations so securitization is basically derivatives okay a form of derivatives right so let's see where which stage of sophistication would you put south korea what level one two three four indeed four very sophisticated south korea has a very sophisticated capital markets uh and they were pretty much ahead of the game in term of securitization markets together with japan and australia um where would you put hong kong yeah well you know what i disagree not really for and even three the small corporate bond market okay so securitization exists in hong kong but it's not very well developed all right now how about india wow interesting huh good yeah two to three pretty much okay what's my point here my point is to show you that asia pacific is a really complicated market because we have some countries which are at level zero we have some countries which had level four and it's not static so you can generally go forward but you can go fall down again okay so what if there is a change of political regime uh you might have movements of the country up and down the scale all right so and so i've talked about the evolution in degrees of sophistication there's another very important element and that is the impact of technology all right so i'm way way older than you are it could be your grandma and i've lived through massive technology called evolution so when i when i was your age i started working in a bank that bank at the time was the largest bank in the world in terms of balance sheet and this is what we had in terms of technology we had a mainframe computer mainframe means that there was one big gigantic machine in a room and the computing power of the mainframe computer was less than you have in your mobile phone okay we had the telephone and this is a picture of the telephone over there when i showed that to my son he told me mom that's not a telephone you know it doesn't look like a phone it's a museum piece and i don't know what this is what i had to deal with right and i had a telex so this is a telex we had typewriters electric typewriters because we were really ahead and the post office okay now do you guys know how to use the post office when's the last time you you sent a letter or something yeah you know you still need to use it right so when you're going to do internships you know you need to know how to use the post office all right okay see very seldom right so yeah in my time we used to write i used to write to my grandma postcards you know with stamps and things like that right so this is what we had does it mean that the financial system was not working no it worked pretty well but then with things started changing oh here by the way this is italics now why don't you find out what is italics and then tell me in the chat box what is a telex or you can raise your hand print a nope like a fax machine but sending with words sending messages tell a printer uh i remember the telus can also have a telephone function and high price function kind of oh i like that stuff look at that something to send code text message no it's not a fax machine it combined if you look at the picture okay so telex machines were very very important in finance up until about 2001 2002 this was a collectible i don't know aryan but if you look at it it combines sort of a typewriter with a a roll of paper so it was used to send and receive messages and so it combined it with a sort of telegraphic system and yes you right wing some it's international system for sending messages and it was used in the financial industry to confirm transactions so when you use the telex machine you had a limited space for the message okay so we used talexes to confirm financial transactions and this was the case until very much 2000 to so when you had typos it was a problem you couldn't correct it you had to be very careful um so these machines were super super important until really really just about 20 years ago okay all right nope no backspace key nope nope nope you had to be careful all right so why am i bringing this up because obviously things have been changing and what i want you to think about is what does it mean what is the impact of technology so here is what i had this is what i had right when i started working and then this machine appeared the fax machine do you know how to use fax machines yes oh visit china knows how to use a fax machine never use that okay well before you go on an internship you'd better find out how it works because businesses still use it all right so the fax machine was a revolution why so who wants to tell me why the fax machine was such an impactful technology that's right so shanghai talk to me talk to me good point talk to me you can send the documents in a very fast speed right so that means that financial transactions time to completion can be accelerated dramatically so let me give you an example now as you age i was running a um i was in charge of doing uh syndicated loans for asia so i was in paris in the bank in paris dealing with customers in indonesia all right and you were arranging big transactions so we had to write the contract so the lawyers would type the contract on a typewriter intricate with carbon copies send take one version put it in an envelope and send it by post to indonesia all right so that took time when the mail arrived at the indonesian lawyer's office when it opened the lawyer would open the envelope read through the contract mark app changes put it in an envelope and send it back by the post office so any transaction would take months simply because the contract had to go back and forth across the globe right comes the facts so fax machines allow you to send documents which can be text or for all images or anything you put it in the machine you dial the number and it comes out on the other side at your client's office on their fax machine that spouts out the document so what does it mean it means that my lawyer in france type the thing feed it into the machine and out it comes immediately on the other side of the globe what does it mean for the lawyer in indonesia they now have to work overtime because i pay them and i expect them to do it right now okay so you have this time compression where a transaction that used to take months can now be done in a matter of days so the pace of acceleration has been tremendous okay the fax machine was incredible it was a huge huge development that nobody talks about and then the computer became personal so now we're no longer relying on this big mainframe thingy but now everybody has their own terminal their own computing power and one of the most disruptive things that happened was it started with word processing so you know word in excel right in microsoft well before there was word they were the wine machine and now so we go from typewriter to word processing who lost their jobs the secretaries we used to have lots of secretaries that would take dictation and type the memos or type things but when we started having personal computers with word processing software we did it ourselves so off we go with no more need for secretaries except at the very very senior level okay because it was a status symbol so then the internet appears so the first manifestation in the industry that we have of the internet was in the form of email so what's the impact of that what's the impact of email you don't need the facts right instant messaging faster communication very good and the email was in the initial adoption of that technology in finance was internal email okay so now i don't have to think about oh my my colleagues in chicago are six hours ahead of me and so i need to think right no i just type the email and i know that they will open it whenever they come to the office right so you no longer have to worry about calling your colleagues and factoring in the time zones and all of that stuff right so 24 7 absolutely dying all of a sudden you're on the hook all the time all right and then the internet then also gave us something we didn't have before which is instant access to massive information all right so think about it in terms of you know when i was um a student yeah i've been a student before a long time ago where did i get information books right to rise in television we only had one channel books library right as a student i got information from the library what if the library didn't have the book i needed tough luck right teacher once yeah you hope okay where do you guys need to get your information all right you get it from the internet all right so do me a favor here i want all of you to log into the internet and type in the question what is finance please do it what is finance okay no no i don't want you to to how many responses do you get how many what's what you see i'm assuming you're all using google [Music] oh interest oh look at that you have different responses okay so this is interesting so some of you get like four mil four billion and some of you get a few less right okay now i'm very curious i would you know it's kind of hard to do it right now because we're remote but it would be very interesting to compare what you see to what your friend is saying and i bet you you don't see the same thing and why don't you see the same thing who decides what you see yeah whichever search engine you are using is going to decide what you see ah the algorithm right whichever search engine you are using and the location where you are and the restrictions that your country may be imposing will impact what you see now you don't have this problem with the library but the library is created by a librarian so the librarian decides which books you're seeing right so what i do want you to think about is the fact that yes you have access to massive amounts of information but you don't decide what you see and so it's really important that you are aware of this so that you can combat the bias from the software all right so that you can keep a broad mind and one of the problems your generation has is because you are exposed to so much information you have to filter it somehow right and then you have a selection bias okay so that selection bias may be coming naturally because you don't have time to read everything nobody can all right but you have to consciously keep your mind open by reading broadly otherwise you have self-reinflecting biases that is super important all right and then things got even worse because we had mobile technology and that has been happening in only the last 15 years so this has been compounding the problem and even further because now we also have the internet of things so now we have connected things and the the flow of data is so massive so huge that we're being overwhelmed by this okay now this is very important because it does affect the way we do business things have gone very fast the time to completion of transaction has accelerated massively and we've all become reachable 24 7 365 or 366 days a year there's no basically no place on the planet where technology cannot actually reach you this is very sad because it makes it really hard to separate your professional life from your personal life so when i was working in banking in the early stage of my career before email and before internet i had a very clear separation between my professional life and my personal life i came into the office i worked whatever many hours i used to work which was quite a lot but by the time i left the office nobody could reach me and then my personal life began and then until the next day when i went back to the office this is no longer the case and this transition has been made worse by the pandemic because with working from home there is no time limit anymore okay so what i've noticed and actually the statistics buried out is that the work day has increased by a couple of hours with this working from home thing and your generation has to be very conscious of you know how you differentiate your personal life and your work life because it's really really hard now all right now what's the next big thing i don't know but we hear a lot about artificial intelligence big data machine learning and all these things the only thing for sure is that things are changing they're changing very very fast um and this was my life before see that but i also want you to understand is that things worked and just because we didn't have the internet didn't mean things were not working all right um before i move on to the next thing i want to give you a word of caution and i do this with all my classes be careful be careful what you put out there be very very very careful of social media because your potential employers will check it out they will facebook you they will google you they will twitter you they will link in you they will instagram you so scrub your profiles look at what you posting as an employer would i hire this person think about it do the exercise ask somebody to check it out and unfortunately in uh in asia and the us and other places you you know it's very difficult to get stuff off once you've posted them in europe we have the right to forget until we have the right to be forgotten not so in other places so the only way is to be super careful what you're putting out there and i'm so very grateful that social media did not exist when i was your age all right with this doom and gloom we're going to move on to discussing why we need financial markets and what do we need for financial markets to work so i'm going to send you all off to breakout rooms and i'm going to give you 10 minutes that's a lot huh maybe too much okay hmm try it anyway i'm going to randomly assign you all to breakout rooms so you get to meet your classmates please chat with them about the blue slide the question out there and then i'll debrief you as you come back to the main room okay you ready all right i'm going to create how many huh 10 15 10 is 10 10 maybe 15 12 or 15. okay well yeah all right here we go open all rooms so 10 minutes so so so you so so okay we have one student who is still stuck in the main room and hasn't moved to the breakout maybe it's only turned on the uh the thing or maybe the student is using multiple device so two device only joined by one of the device he's only one student who hasn't moved he's not responding to my message or anything param haram somebody's logged in but he's not here so um so the iprs will start um yeah when we start talking about markets this and when she hadn't dropped until 17 17 yeah after the chinese interview that is westlake somebody came out and went back in [Music] connections and now i finally got a lot of connections and i come back and so you you're having problem with your connection wait wait hello huh hello hello yes i got i got this coming out my life just everything for a while and i finally got a good position for wi-fi so i can't be submitting and okay that's all right we're going to get everybody back in very shortly don't worry okay sorry thank you okay so as we get everybody back in i'm going to go from room to group to group and ask you to debrief me on what you've been discussing with your classmates all right so i should be getting everybody back in more or less yeah some people who are still hanging in their discussion room but they will be brought in very very shortly okay so room number one it's [Music] so could one of you tell me what you've been talking about okay so one or two things that you talked about that you feel are important for financial market okay okay i want to start with room one uh itong marco chu jung day once uh min q dominic wong cement and tachem one of you raise your hand and call me hello i don't know how to read hand but i i can i can say something about that huh uh i i i can say something about our discussion yeah go ahead okay okay so first we talk about something about rules and laws to protect the marketing financial market markets i think we think that is the most important thing and then we talk something about how to attack people to join the markets and make it bigger and bigger like show them that the [Music] benefit is breathable and i don't think i forget it's okay all right so you guys talked about rules and regulations very good uh jung day tell me tell me more tell me more and also we talked about uh auditors auditors that uh ensure that the corporations um publish the correct data and not try to uh decept the debit very good okay anything else from uh okay we've got uh nayin i'll come to you in a minute uh group one you don anything else you want to say no all right group two is chew wing tio yat tang hoyen soy in and don xiao so one of you talk to me hello hello you must have talked about something yes oh there we go thank you so uh we have talked about the financial market but i we think that our discussions are going astray because we are talking about what is the importance of financial market yes and we we come to the conclusion is that financial market is targeting on making the social welfare more bigger and then distributed which is which means that we make the cake make make the cake larger and as for the question we think that financial markets need regulation yes because when we come back to 2008 the financial crisis it is because the assets asset-backed securities and the whole financial market was collapsed so i think we think financial markets need a correct regulation by the government very good yes so that echoes what was discussed by uh the students in room one we're talking about rules and regulations as well as the auditors thank you dongxiao let's move to room three in room three we had elliot calvin george visit chai wai hung song tag jan fen and using so one of you tell me um yeah so i think that uh in addition to the legal systems and regulations we also thought that having um an educated population and having proper training for these personnels are also essential and having the ability to globalize and to spread and take in more information we thought is also important for financial markets very good excellent anything else from room three that's okay very good room four we have so on kevin kent sutin na ting kin pan kathleen and winian so uh okay uh wing yen told me tell me tell me okay yeah we talk about the basic things that is the money you need to have currency in order to make investment easier and also we also talk about the banking system and the banking system also make the learning or landing process easier and we also talk about instant communication system like for example as especially nowadays uh if you're in hong kong and you like to listen to the speech of donald trump you're gonna like log on to some kind of platform in order to get the uh first-hand information from him so the instant communication system is also very crucial in this time and age thank you very good excellent excellent point well done anybody else wants to talk from room four yeah and to just to add on uh we are first to discuss that we should have some kind of um middlemen working in the financial markets for example the trading companies like the hks ex in hong kong and also like the underwriters for stock listing and also the auditors when um and also law firms and auditors for preparing those listing documents or the other documents to contrast for the companies very good a very important point netting excellent well done okay let's move on to room five we have aria warden tikwang hong fi dhruv mak so who wants to talk to me hello room five come on come on i think most of the things have already been mentioned by the previous group uh but other than that i think one thing i can add is um the money but also something to determine the value of the money yes so i think that's the only thing that we can add after that very good and adding to that i feel that it's proper supply and demand is also required for financial markets to function because most of the times there is a huge gap between supply and demand so which causes financial markets to not function properly very good excellent points um also i think that technology also important for the financial market access and venture property because for this change to happen we need to have a good way for them to do so and also the security is very important is related to the internet security yes so what do you mean security you mean security in the terms of being safe um being safe so that um the trade has to be for contacts has been protected and then capital also it needs to be protected as well yeah yeah okay so security in that sense okay well done thank you all right let's move on to room six where we have adrian chuck fung one shan roman [Music] so we discussed a lot of things but basically it all boiled down to five key things that we need and that is first of all a good set of rules so we don't allow any manipulation of the stock market or any unfair practices like insider trading and then we also need a secure and reliable system of exchange because otherwise people would be discouraged because maybe if i put in a transaction i pay my money but i don't get my stock then i'm discouraged from trading obviously and to enforce these we need regulators and watchdogs like the sec or auditors the fasb we also said that we need transparency so the universal availability of information so that the investors are all have the same foundation so it's all fair and also in the same light mass accessibility so everyone is able to trade very good excellent that's really nice very very good thanks woman for sharing um room seven we have katong anson song i think most of our answers have been already mentioned but we divided our elements into few categories we first uh made the first category as a player that includes like sellers buyers brokers banks and customers yeah and the second one is the system so we need the banking system transaction system and monetary system to ensure that everything works properly and finally we need the regulation so that everything is functioning uh under the supervision very good very good excellent points then we have room eight we have pong king param sinting safong jin juan yang jun chung kit and cyrus we need a um high institution authority to build a fight build a foundation for the financial market to kickstart and get uh people to participate and for it to function properly we need the stakeholders to actively get involved in financial market and um the ohio institution needs to set regulations so yeah it doesn't go straight and a point to add is that it allows us to acquire various type of informations without you know spending our money so it'll allow us to lower the cost of transaction and it also makes our financial asset more liquid since we can you know treat our security at any time great points okay very good uh let's move to and i do realize that as i'm debriefing there are a lot of things that have already been discussed but that's okay don't worry about it okay so room nine i have wing yen hey lam and apologies for mispronouncing your names okay ying and emmanuel um so we discussed that we need some sort of investor and also securities to be traded like in the financial sense like bonds um like forex like currencies and stuff like that uh and uh i kind of have a question because i see a lot of my classmates in the groups before me that mentioned we need regulation but aren't there also disadvantages to regulation for example rent control uh especially i think in new york a lot of economists are discussing how rent control is bad so i think uh there's a balance to be had between regulation and deregulation yeah that's a great point emanuel yes i mean we you want a balance you want rules but not too many because then you stippling creativity and initiative right it's really very good point uh room 10 we had mantic bella romana isaac pog hang and muhammad um well we talked of things that's very similar to previous group it's mainly about how like this has to be regulations and like people have to have certified to do uh trading to do like trading for them so that people have trust you know in the market yeah all right anything else from 10 no all right room 11 we had hosum park chan yoon wing church iphone irene and hilton um our group talked about um we need and well established banking system so that it would encourage loaning from banks and deposits from public and it will form a well a good cycle of money creation and we also talked about that we need an advanced communication system so that there will be a good flow of information and the players like the banks the firms and the general public would actually engage in the financial markets very good and uh you wanted to add something yes and just like someone mentioned before it is important to have a free market and also to have a transparent market but at the same time regulation is important as well because we really describe the balance between the two to ensure that the buyers and also the sellers are regulated and protected during transactions so for example like in america there is the federal reserve system and like different kinds of system and infrastructure to protect the people and apart from that we also need a good market infrastructure so for example there are the capital market authorities so they can host both buyers and the sellers in the market very good points very very good points yes absolutely let's move to room 12 we have oining signie jasper sir hin cotsun and jinkai so justice so basically our group discussed many of the ideas just like similarized before but i think one of the most important points that we need to discuss is about the demand side of things because like in order for to have a in order to have like a financial market itself you need to have demand so basically like many companies who want to do business in a certain market and they need to acquire funds and as we know in order for a financial market to thrive they basically need to first check the ability to create money so basically if us we can have like a sufficient like the customer base for all of those funds and it can really support the financial market to thrive and also we also mention a very good point is about having some sort of like market protection mechanism in order to protect the stability of the market because like back in 1997 like in hong kong where soros attacked hong kong dollar stability and we have hma back then to actually help us to restore the whole system and i think that is really important to have some sort of mechanism to protect the stability of the market very good point wow yes so i want to also want to add from a technology perspective so the first point would be the stability for broker and exchange so we need to build a software that can allow people to trade in high concurrency and high frequency high frequency and also cyber security is very important so for example there is some incident of in blockchain where the cyber security of trading is not protected and also so there should be some regulation for technology and also i think the most important should be the open api technology so everyone can involve into developing the software i see your fintech guy good soon are you from the engineering school yes i could um hi so another thing we want to add on is that we believe that and a generally accepted exchange medium is required which is um in most of cases money or currency as you know um the basic um criteria for a financial market to exist is about all about trading because without buying and selling um so the there's no money flow no cash flow the market cannot be kind of growth and the market will not exist so um a general asset medium will increase the convenience so that more people are willing to trade with each other very good very very good oh this is fantastic i love this discussion all right uh room 13 we have rey hang sue on adrian porching wing tsum katong and sunna talk who wants to talk to me uh hi professor so our group um refers some like also like other groups i mentioned the information uh the importance of regulations so i would like to add more like my personal feel on like regulations and policy issues so uh like to facilitate a better financial market i believe like uh policies that encourage investment encourage firms to invest their capital into other industries to support the future development will be more important when we establish one financial market and financial systems so we can make it go further and that will be more benefits to not only the company themselves but also the asset or company they invested in all right i see you have stones behind you are you a reddit guy yeah yeah yeah you think i'm organizing that i talk on gamestop and ready and read it um two weeks from now with some of my colleagues you'll say i'll get you the invite to everybody okay anybody else from room 13 want to add anything nope nope okay so room 14 we have shiraz wing long manual samsung samsung timmy aryan and coover um okay uh so we went over quite a few uh topics but first initially like everyone else we started with uh financial institutions and the government regulations being the uh the main point and from there we went on to since financial markets are essentially decentralized we need a low barrier to entry for all individuals so that they all have access to the market and even like roman said initially a while back that uh transparency of information is really important and to maintain stability regulation is also important to prevent situations like the 2008 housing market crisis and even situations like the recent gme uh situation stuff like that is isn't really supposed to happen otherwise it could evolve into something really really bad and could have lasting consequences and another thing was the market should be free-flowing so the system that is created should allow for a free-flowing system and not something rigid in place because it has to move with supply and demand and like like the stock market works it has to work instantaneously and respond to individuals and their decisions and even the market as a whole and from there we went on to discussing cryptocurrencies and blockchain and how that could be the next stage in financial markets and how we're evolving into a more a more decentralized situation where everyone has their own uh their own method of tracking all transactions and even having access to all the information required and how countries would also adopt officially adopt uh cryptocurrencies and even make their own according to their own regulations and how this could be the next stage uh in financial markets well this is brilliant now uh the time is up and so i i still want to do debrief room 15 but those of you who have other classes and benson it's okay uh feel free to leave but uh if somebody in room 15 is still here charis [Music] and can share with me what you discussed in room 15 that would be great if you need to leave uh that's okay too all right hi professor so uh you can just call me shauna okay that's like the shorter form um so we thought like our team thought we could maybe go back to the definition and the origin of a financial market so we believe like a strong enforcement of the definition of money um would be a solid foundation for the financial market so what i mean is there should be like a common measure of value um and like i think roman mentioned earlier about transparency uh we believe that with money we could actually um but like he mentioned about transparency and transaction costs and that just made us realize that we could minimize our transaction cost if we just like enforce the definition of money stronger and other than yeah we rent the real basics but other than that we also thought about the external factors that could affect the financial market i know everyone talked about the sound legal system um and i think one or two even mentioned about the education level which we'd like to just add we believe that everyone should be having a basic level of understanding when it comes to shares securities derivatives all these stuff and i don't know if anyone's mentioned it yet because i haven't heard it but we believe that political stability would also be a major factor because we see a lot of countries such as syria and north korea they don't have such a stable financial market because their political stability is not that stable um i don't want to talk too much in case my team members would like to share um apart from the points that i mentioned just now i think that a sound trading system is also like imperative for the financial market to function properly um for example in hong kong um the securities market is currently using the otp system which is in full name orion trading platform um i think um why this is so important is that um a sound trading system can ensure that all the um all the deals and all the um all the um all the buyers and sellers can buy and sell their shares effectively and actually it can ensure the whole um whole market is running properly and apart from the trading system i think that a regulator is also very important for the market to run properly for example hong kong is currently um like there is a commission called sfc securities and futures commission and the sfc is actually responsible for um monitoring the whole security market and to monitor if there are any improper trading practices um for example like rat trading false trading etc so i think that both the trading system and the regulator and the stock market is actually very imperative for the market to run properly and to ensure that there are no manipulation and fraudulent activities going on in the market very good wonderful yeah yes you want to share something yeah um my teammate mentioned a lot about the the monitoring system the the regulations the law and also the political environment and all of these are based on the trust because um you know the people have to have the willingness to lend money to to store money in banks or whatever but still they um they have to trust the system and without trust and yeah it is nothing mm-hmm maybe mentioned by one of my teammates that's okay that's okay all right well this was a wonderful discussion i'll summarize it and we'll talk about it again on monday and i'll add a few other things thank you for staying around and uh have a wonderful weekend see you soon all right thank you thank you professor you hello excuse me thank you professor yes yes i tried to google what are derivatives but i don't really understand what's written over there so could you just briefly explain what is divergence okay very very shortly um so derivatives are financial instruments which price is derived or is based on another asset so broadly speaking we're talking about um swaps which are exchanges of cash flows options which are the right but not the obligation to buy or sell another asset forwards which is the right and the obligation to buy something at a certain point in the future at a set price and futures which is basically the same thing as a forward but which is traded on an exchange so forwards and futures are the same kind of mechanism the only difference is futures are only traded on exchange okay what is the use for so it's just a contract right sorry it's just a contract right you determine the value of something yeah so a financial a derivative is is is an instrument a financial instrument that has a price based on something else so an an equity option is the option to buy or sell a share at a certain price uh a foreign exchange forward is the right and obligation to buy foreign currency at a certain price at a certain point in time okay so derivatives is really complicated if you do finance as a major you will probably learn about it but this is in a nutshell a very very simple way thank you professor you're welcome any other questions all right bye have a nice weekend thank you

um good afternoon professor hello hello good afternoon all right now before we start do you have any questions for me for those of you who are already here you so okay all right now we're going to be starting now it's 4 30 try to start on time finish on time welcome back to my class and we are going to uh carry on from where we left it last week so remember we had a brainstorming discussion about what it takes uh for financial markets to exist and to function properly and i jotted down a lot of what you guys were talking about so you talked a lot about rules and regulations uh some of you talked about the legal system accounting system the need for transparency then you talked about monies uh and different currencies touched a little bit about crypto talked about money creation characteristics of money then you talk about the market structure and market infrastructure like trading systems communication systems operations and how to make information accessible to all then you talked about players the demand and supply investors stakeholders regulators auditors you talked about security and cyber security you talk about the need for education and financial literacy as well as access to information and then you talked about some of the more macro aspects in terms of political stability and economic development so we covered a lot of ground there are a few things we didn't talk about hmm and what could they be so what are we missing here what other things do we need so let's look for example let me give you a clue let me talk about infrastructure right so in order for what kind of instructure infrastructure you talk about trading systems communication systems so what does this run on attack yeah what does it run on what do we need for technology to work internet yeah electricity thank you aryan now this sounds like an obvious thing but remember where we are we are in asia pacific right so what happens sometimes in some countries in terms of electricity blackouts yes right you also talk about the internet access to internet well you know we've been having to do things online now for over a year what happens to some of you sometimes unstable connections right laggy wiffy yeah disconnection absolutely it happened to me in the office at hkusd in the middle of a discussion with the dean and some industry parties suddenly my zoom went poof no more zoom horrible yes the thing doesn't work right so we rely on so much technology and sometimes we forget all right that we need the power to for that technology to function and that technology does not necessarily reach as much as we think it should right so remember asia-pacific is a complex market and not every country have a penetration of internet not every country have enough power to support the infrastructure and think about what is happening in terms of technology where suddenly we're doing more things online and the platforms that were designed are crumbling under the weight right because then they were not designed for this huge number of transactions right so yes you also have security issues uh security viruses say what what happened recently in the us what happened recently in the us in terms of security cyber security have you been reading about it data breached there was a major major major cyber attack on the us systems and it started with one company called solarwinds right and what they found out and actually they didn't find out it was microsoft will find out that the systems had been breached and there had been penetration wannacry was much earlier than that night in um but this this huge hacking problem which means that all u.s government agencies were breached into and they don't know and they don't know what data has been uh you know has been compromised so huge problem with cyber security all right so um other things that we need to worry about as well right so we talk about the infrastructure which also means uh buildings right so i have a picture of hkusc building right behind me now what do we all need to live food and water and air right air and water but most importantly water we cannot live without water at all and guess what's happening we have a massive challenge in asia because it's not enough water and the problems are getting worse and worse so i have picked up an article to share with you the recent news and this has to do with uh a country some of you come from uh which is india but it's not the only country which has a problem uh and it's uh it's what's going on with water in chennai in india uh sixth largest city uh ran out of water uh in 2019 one of the first major cities in the world to run out of water and they had to bring in trucks uh to give water to the to the population and and and the worst thing of about the story of of chennai is that it actually gets a lot of rainfall but when it does then you have flooding and then it makes the system even worse so uh urbanization has contributed to the crisis climate change is a big issue and in asia pacific uh the problem of water is a huge geopolitical issue so the point i'm trying to make here is that before we can talk about things like you know market structure and all of this we need to think of the fundamentals okay we are particularly in an area which has huge challenges in terms of uh transition to climate change in terms of access to power and water and infrastructure we also have uh you know we need people uh yes automation is changing the way we work but we still need people and we need educated people and uh and that is a a major challenge uh in in this region so all of this development uh well yes of sahara africa for sure it's not just in asia but we're right now in asia and i'm talking about doing uh financial markets in asia so i kind of like focus on asia um [Music] right so you talked about all of these elements here so this is kind of a messy map and it's by no means complete uh but we do need all of these ingredients so we need we need players uh we need the banks we need the brokers we need the corporations institutional the general public but we also need regulators we need exchanges which are platforms on which trading can take place we need information we need service providers and those can be lawyers auditors accountants etc we need information providers like refinitive bloomberg etc etc so we need a lot of things for financial markets to operate and we do run into a lot of challenges out here in asia so um so what are some of the key building blocks so we talked about the foundational policies in terms of supply of capital supply and demand of capital intermediation to connect the parties uh we need a price discovery process we need assets that can be bought and sold and then you need the regulatory framework you need cornerstone institutions regulations and standards taxation policies which is part of the legal system marketing for structure and technology now why all this what why do we need financial markets well the one of the first roles and functions is is channeling funds from surplus to deficit units so in other words one of the most basic things is that when you have a business and you need capital to develop the business and you don't have that capital can you find a source of capital and that's one of the most fundamental functions of financial markets is to allow you to identify this source of capital and not just identifying it and connecting it but to do this efficiently and um in the process the market allows you to put a price on things so this price discovery process which allows you to determine the price of those assets uh the markets also provide you a way to share risk so you can use markets to get rid of risk or to take on risk or to share some of the risk so there are different mechanisms we can use but the markets provide a way to deal with risk management and we will talk about risk management later in the course liquidity so liquidity is a very very important concept and i want to highlight it because i'm going to be speaking about this time and time again let me play with my thingy here so i highlight it so that you can see it's very very important so what is liquidity you can tell us anybody tell me what is liquidity you can raise your hand or all right roman tell me uh liquidity describes how quickly you can basically turn something into cash good so not just how quickly but also with minimum costs involved okay so there's two angles here all right and this is one of the definitions of liquidity so how quickly can i turn an asset into cash at the lowest possible cost okay another definition of liquidity is what access do i have to money can i raise funds quickly so there's two aspects when we talk about liquidity in corporate business uh it's either transforming assets that i have into cash or accessing cash okay so two angles one of the biggest challenge with liquidity is that it is relative and it's relative because when the markets are functioning normally then you find liquidity pretty much everywhere and it's relatively easy to sell assets without too much cost but when the markets turn bearish that means when people are worried when they worry about risk then it becomes much harder to sell assets and you don't get as good a price and it takes longer and sometimes there is even no price so in your economics 101 classes your economist will tell you there's always a price and i'm here to tell you that's true that's not true at all in fact sometimes there is no price when the markets go crazy when there is a crisis there is no price okay so one of the biggest challenging for financial institutions financial markets generally is that liquidity is very relative it's always there when you don't need it and never there when you do so managing liquidity is one of the biggest challenges for uh institutions and we will talk about this when we zoom in on the banking system nevertheless financial systems when they function efficiently are a source of liquidity because you can go to the market to find a price and to find a taker for your assets when financial markets function properly they also bring about financial stability and an environment where transactions can take place in a pretty stable manner of course they can go the complete opposite markets also offer a way and you mentioned it in the brainstorming session that we had to identify information to share it to consolidate it and we are in the information age so information has become even more important and in fact it is more important than than money and financial instruments it's all about data nowadays all right so i've been uh blabbing on about we are in asia we're in asia so what i want you to do is okay go on to the internet and find me a map of asia so go on the internet and google map of asia and see what you can see well this is what i get so you might have different kind of maps right so it's important that you do the exercise because depending on the map you click you click on some of them will show you different things right so for example this one all right so you look at this i'm just clicking on one and i look at all these things so this is a political map and it goes down all the way to australia but australia is not actually included in the map okay so most maps of asia that you see will not typically include australia so australia like for example um let's see but if you want to do asia pacific then you will have australia and new zealand now if i take uh let's say this one here all right right it says asia map what is it showing me i don't know where asia stops and starts i i i know france is not in asia but it still shows in the map right this is not really a map of asia okay what about this all right so it's some some person uh geographical map all right whatever no not but if you look at it right so it includes all the middle east where this one maybe this one so also includes what i call the middle east and it also includes russia right is russia in asia from a financial market standpoint no actually from a financial market standpoint russia is considered part of europe it's managed out of europe typically so if you are say the ceo of morgan stanley and you break down the world in big major financial markets you're not going to manage russia from asia you're going to be managed from london what about the middle east well most firms manage the middle east from europe because they have europe emea europe middle east and africa that's what they manage right what about the stan republics so is that like that's central asia does it go with asia or with eastern europe uh it's unclear right so sometimes asia is including japan and sometimes it doesn't uh so what i'm trying to say here okay with this exercise is that asia is a complicated concept and depending on yeah and cyprus too you're right so there's a it depends how you define it so when i was in banking the middle east and was run out of london and for most companies it still is but over the years some of this has moved to asia all right so uh it is quite challenging and if you look at all the countries that make up asia you have such a huge variety we've already started talking about that and we have very fragmented markets so imagine you're the ceo of morgan stanley and you're running four major areas the americas europe middle east and africa asia you have very very different markets to deal with in the u.s you have one single big market it's very homogeneous the complete opposite of asia where you have highly fragmented markets each has its own language its own legal system it's its own level of development it's and you cannot just take what works in the us and think you can apply it in asia it's a recipe for disaster so we have very fragmented market in some of these market information is not accessible or if it even exists it probably would take translating it into your language which is costly and difficult the information you get you may not be able to rely on it not just to mention the fact that you might get it very late okay so all of this has serious implication because you all told me how important information is for financial markets right so when you are faced with huge difficulty in identifying information in a timely manner and that information you may not be able to trust it that in turns will mean that you won't have transaction efficiency and you have information asymmetry which combines with the fact that the legal regimes may or may not be very established and when it exists the regulators may or may not implement it all of that means price efficiency will suffer so we are confronted with a very very diverse regions in which in some cases it's really difficult to find information you cannot trust it so transactions are not efficient price determination is not very efficient so it's a hugely challenging market and we've talked about the fact that we have many levels of development uh around asia and this is a report from mckinsey back in 2017 where they were looking at the capital market development index in different countries and as you can see here as you would expect you know we south korea as we mentioned is pretty high up in the list and the others are pretty some of them are pretty low in the list all right okay so a little bit of pop quiz when everything in a country is fully owned by the government can there be an effective capital market yeah well if you have only one owner then cannot be much of a market now more tricky question why is climate change a risk factor for capital markets put some assets and companies in danger right you might have to move your headquarters uncertainty absolutely changing investment standard what do you mean by that sunghak like some investor cares more about the esg standard when they're investing so it may be a risk yeah that's right now absolutely the esg factor is um it's become very mainstream absolutely uh may damage resources absolutely decrease self-production uncertainty you know you get it okay and remember we must have not all of you but most of us right now we're in hong kong oh yeah on typhoon day people don't have to work well you know what there is a discussion about this now that everybody is remote you know that's the horrible thing about it there was a lot of discussion when we were all working from home and we had a typhoon as to whether that's supposed to be off or are you supposed to be working anyway because you're working from home right so technology not so great insurance pricing that's a super good point uh and um a very very good point yes insurance companies will not insure you if you don't manage your risk properly so they will not ensure some risks for individuals but also for large companies in fact that started happening after katrina the hurricane katrina in in the united states caused the insurance company to review all their catastrophe modeling and realize that climate change was happening so what they then did is went around to their big corporate clients say you got to take that in consideration and if you don't planning for it in your risk management plan we're not going to insure you so absolutely so this is a big big big factor and it's become very prominent this year post pandemic uh it's on the agenda of the boards around the world third question what are some of the challenges investors face in frontier market so frontier market is markets that are just beginning so they're not even emerging but they're just they have a little bit of financial markets like yeah vietnam well vietnamese emerging markets like mongolia places like that lack of information yeah political stability uncertainty lack of laws lack of inform information high volatility information acidity lack of transplant very good okay you get the point all right and in asia we have a number of markets that are frontier markets we have some markets that are emerging markets we have some developing market and some developed markets so we have the whole range of uh situations that we can deal with all right any questions okay right okay so we've talked about the fundamentals we talked about financial system now we're going to talk about the players okay and you've already talked about it when we were brainstorming you were saying well we knew we need demand and supply and we need parties to play in the market so broadly speaking we can classify the players into three big blocks you have the sources of funds which are the investors we have the users of funds which in market we call issuers and then we will have a bunch of intermediaries and other actors who will facilitate the transactions so let's start with the sources of funds so i'm going to start with some terminology here all right so sources of funds investors okay investors range from the little guys the public retail households you and me widows and orphans so the little guys okay that's one source of funds then you have rich guys high net worth investors high net worth individuals okay rich people who have high net worth so sometimes you have ultra high net worth very rich people okay this is an important source of money and investments particularly in asia because our high net worth investors sector high net worth individual or investors okay high net worth do you want me to write it now yeah i'm really really bad at writing with the with the mouse okay hi oh boy i should have a stymus hi net worth individuals or investors right so rich people so this is a big market and so sometimes they invest directly by themselves sometimes they create what we call family offices uh sometimes they appoint financial institutions to manage the money for them but they are a big force in the markets a big source of money then you have corporations now in your classic textbooks corporations tend to be described as users of funds but this is no longer true because many corporations today have a lot of money to invest can you think of some corporations that have a lot of money to invest yes tech friends amazon apple tencent berkshire hathaway yeah okay so c comes to you naturally right so you can immediately think of some corporation that hkusd no no we are very poor we need people to donate money to us we have very little money we're not paid very well at that stage do you we need donations okay so anyway so corporations and by the way we're not a corporation we are a higher education nonprofit institution so corporations can be on both side as you can see right there right so we have corporations on both side of the equation here and that means that some of them can borrow or issue capital in the market and some of them will invest in the market so you will also notice that banks and financial institutions are also on both side of the equation because banks can be both sources of funds and users of funds so banks borrow in the market by issuing bonds certificates of deposits etc they also issue equity so banks can be users of funds but they also sources of funds so they lend money they invest in portfolios of securities etc the term fi means financial institution okay so if you are in a fig group in a bank this is a financial institution group okay so the group that looks after financial institutions as a client group okay coming up the word sovereign can anybody tell me what does it mean sovereign government that's right all right so the central government but when they act outside their own market so when a government raises money from foreign investors we call that a sovereign issue so when you hear the term sovereign it has two connotations the first one is government central government and the second is international right so a sovereign gov sovereign issue is when a government gets into the international markets to raise funds so you can see that they can be both issuers and investors now there are also the sovereign is at the the central government level there are what we call quasi-sovereign which is the level below so quasi means not quite okay so we have the sovereign and then the level below the level below can be agencies it can be municipalities it can be counties or regions so if you think about china it could be ministries it could be regions it could be cities but they're one level down so local government would be one level down okay sovereign would be the central government and then we have surprise so surprise has to do with supranational supranational supra means above supranational means above the national level okay so above the national borders eu yes the eu is a supranational institution can you think of any other supranational institutions un asian yeah yeah imf very good very good okay world bank perfect yes many many others while brics is not really an institution brics is an acronym for brazil russia india china and south africa but it's it's it does not exist as an entity the world bank the imf the eu uh they all exist as entities okay pigs is the same thing as brics it's portugal italy greece and spain but it doesn't exist as an entity so why i call them supranational why we use the term supranational because supranational organizations like the imf the world bank the asian development bank the new development bank they act in the market they borrow money in their name and then they lend on so development banks like the european uh the ebrd uh the asian development bank uh the african development bank they issued that in the market and then they use that money to finance development plans okay so no they're not sovereign sovereign is a central government they're above the national level okay they are super nationals um professor yeah i was asking if state-owned banks are sovereign that's what i was asking there are quite a self-run and it depends uh at what level they are so sometimes so a state-owned bank if it has the full support of the government it's a quasi-sovereign but the ownership itself doesn't make it sovereign thank you thank you you're welcome and we'll revisit that when we talk about sovereign wealth funds all right and then you have institutionals and we'll talk about institutionals uh later in the class okay so institutionals mean institutional investors broadly speaking we are talking about asset managers insurance companies pension funds and retirement funds and then you have alternative investors like private equity venture capital hedge funds etc all right so the world institutional come from the world institution so it's an institution that pulls together a lot of money to invest in the market but we will delve into that as we go deeper into each category of financial institution okay any questions on this it's important that you understand the terminology all right okay so we've talked about sources of funds and uses often so by the way ssa if you work in financial markets in a big institution in sales and trading for example on the trading floor you'll hear the term ssa as i say means supra sovereign and agencies so the the team that covers ssa is a team that covers super sovereigns and agencies oh roman very good reminding me i have not defined spvs which is very very bad of me thanks for reminding me okay does anybody know what spv stands for very good songhack yes special purpose vehicle and by vehicle we do not mean a car or a bus we mean a legal vehicle in other words we can also say special purpose corporation so it's a legal vehicle or a corporation that is set up for a specific purpose so we often see them with securitizations we see them when corporate companies want to be more tax efficient so they set up a special purpose company in a um tax efficient country no so spak is different it's special purpose acquisition vehicle it's a special purpose acquisition vehicle which have been all the rage and uses different ball game don't get me started special purpose vehicle are set up for a specific purpose generally to do with raising funds um in either tax efficient manner or legally efficient money so we see them in project finance structured finance um tax optimization etc so song mean is asking about spanx spac is special purpose acquisition corporation those are corporations so this is it's called the blank check company so you set up a company that has nothing and you get it listed and the only purpose is so that it can acquire another company later on okay so it's a way to do um back door listing so if you have a company that is private for example i don't know what's company that is private right now that will be listing robin hood okay robin hood is currently private and you are you're growing and so you want to eventually get listed so there's many ways you can do that you can do an ipo or lucid or you can do a direct listing or you can do a backdoor listing so the backdoor listing means using a company that's already listed and that company buys the company that wants to be listed okay so because you're buying the company and they're merging so then you automatically become listed that's called a back door listing so long story short sparks blank check companies are vehicles designed for acquisition purposes okay so they're a bit different ngos no uh non-governmental organization and really don't have much to do with this um what is the difference between direct listing and ipo okay so an ipo an initial public offering means that you appoint investment banks the investment banks will come up with the valuation for the company and they will be um raising money from investors by building what we call a book and they will um they will manage the entire process for you and support the price a direct listing is you simply go to the stock exchange and say i want to sell shares okay and that has you don't need investment banks you you can do it yourself the problem with that is uh whatever the price is when the shares start trading will be the price you have no control over the pricing process uh so it has positive aspects and negative aspects uh direct listings used to be very very very rare uh but they've become they've started picking up quite a bit uh the interesting thing is that investment banks are helping with direct listing but not underwriting and not managing the entire process so somewhat the fees you pay to investment banks is a bit less than that eton is asking me will sbv lead to some illegal things no uh not necessarily uh it is a financial engineering um setup that is designed so for example okay let's say you want to build a power plant from scratch and you are clp clp is one of our two electricity companies in hong kong and you want to build a power plant in india well you don't want to raise money in your name and invest it in the power plant you'd rather the investors go and invest directly in the power plant in india so you set up a company that will be managing this entire process so that company will be raising money to build the power plant and it will have all the assets of the power plant and it will have a contract for the outtake agreement with uh the electricity company in india uh so that this whole transaction uh while it was initiated by clp does not consolidate into the balance sheet of clp so it's a little bit complicated but no sbps don't necessarily lead to illegal things uh is an sbv a kind of fund of funds no it is not it's simply a legal vehicle okay friends of funds are very different from defense are actually funds that invest in other funds we will take we will talk about that later right these are very very good questions okay why suppress are not on the list of source of funds um because broadly speaking they are more users of funds uh an institution like adb in capital market terms they tend to get the money themselves first and then redistribute it in their own projects so actually you're quite right that i could probably put them on both sides but they're mostly on the fundraising side rather than the fun supplying side in terms of markets capital markets okay those are great questions very good questions all right okay now we talk about sources of funds and uses of funds now let's talk about uh other players and here i'm talking about institutions that help to facilitate transactions so i call them intermediaries which is a source of confusion because later on we will talk about financial intermediaries and financial intermediaries has a very specific meaning financial intermediaries in this class and in academia means financial institutions that provide financial intermediation and we will spend time explaining where that is later so do not mix up intermediaries and financial intermediaries intermediaries here simply means institutions that put parties together okay so they intermediate they help put parties together but they don't necessarily perform financial intermediation so we will talk at length about investment banking and i'm going to talk later about dealers traders and brokers for the moment i am going to focus so put those aside i'll come back to that later but i'm going to talk about credit and liquidity enhancers so first of all this is a class where you learn so many things including english so to enhance is an english verb that means to improve okay so young ladies enhance the natural natural beauty with the help of cosmetics okay so to enhance is to make better so credit enhancers are institutions that enhance credit risk in other words improve the credit can you think of an example how can we improve credit insurance yes insurance companies can provide insurance that would for example credit insurance which would cover the parties against the risk of default of the borrower that is one very good example any others collateral very good collateral is providing uh an asset in case you cannot pay then the lender can seize the asset for example in a mortgage the piece of property will be collateral credit rating agencies know credit rating agencies do not enhance credit they evaluate it they give you an opinion about the credit risk a guarantor very good a guarantor is credit enhancement the guarantor stands behind you if you cannot pay they will pay for you okay that is very good options uh well this is kind of a broad term uh it's not in itself a credit enhancer but you can use options and what else did we see moody somebody's is a rating agency they do not provide credit enhancement they provide credit ratings risk manager [Music] risk manager manages risk cds credit default swaps it's not strictly speaking credit enhancement it's credit risk insurance in a way but it's a separate instrument so it's quite separate from what sanghak was talking about in terms of uh credit insurance okay cdos it's collateral debt obligations this is not credit enhancement this is putting together a portfolio of credit facilities and then selling that securities against that portfolio this is securitization okay so the point about credit enhancement the best examples were guarantees or insurance credit insurance uh these basically are allowing a company to borrow even though its own credit is not that great but because a bank or an insurance company stands behind them or the government for that matter then creditors will be more likely to lend to them at a retail level at an individual level as a young graduate when you want to buy property no bank is going to lend to you but if your mom and dad are willing to guarantee you and if they have a good job and they have good assets then the bank will listen okay so mom and dad the bank of mom and dad provides credit enhancement for young students now same thing applies with liquidity it's a little bit more complicated and you don't have to remember that but you also have banks providing liquidity enhancement you also have financial institutions providing liquidity enhancement which means that this is the other aspect of liquidity which we discussed early on with roman it's not the aspect of liquidity about selling assets is the aspect of liquidity in terms of raising financing so if you cannot raise financing then the liquidity enhancer stands behind you to provide liquidity okay so there are different functions and i haven't put all of them here we will cover more as we go through uh the course of players in the market that provide different kinds of services um so uh there are many many other actors this is not a complete list and we've talked in the brainstorming session about regulators right so regulators are very important um because they are kind of the police in the market right they they kind of create rules and people have to follow the rules at least theoretically the key things though when we look at regulators is do they have teeth or not so when we say toothless regulators it's a regulator that has rules in place but they never enforce them they don't have the power to enforce them or they don't have the will to enforce them so sadly in asia we've had many over the years our regulators have started growing teeth a little bit particularly in hong kong but it was not the case that much one regulator that has grown big teeth is chinese regulators have recently come up with really big teeth uh and our friends at uh and financial have experienced the bite of the cb src um so regulators are very important players and we will talk about this when we get to the end of the course service providers there are many of them we've talked about it in the brainstorming we talk about lawyers we talk about accountants all of these perform very important functions uh sadly sometimes not quite as well as they should i've touched a little bit on reading agencies as i was discussing your posts in the chat so what are rating agencies anybody want to tell me what is a rating agency reading agencies anyone okay nothing tell me as i heard in my secondary school for my teacher it seems that it's about like um there are three big and reading agencies and they will post their asian rep their rating reports every year for different um corporations and also the governments and there are something like um a aaa and so on and yeah to give some kind of reference for the investors like which um which company or which government is in a good financial credit and so yeah to give a reference very good thank you so and a lot of you have posted comments so credit rating agencies are companies that provide opinions their opinions of the credit risk of companies banks countries securities etc so there are many credit rating companies globally there are three that everybody knows about can you tell me who are the top three very good moody's snp and fish moodies and standard and poor's dominate the market like over 80 percent of the ratings number three is fetch and then there's a bunch of other companies and there are local credit rating agencies in different countries so what do they do they analyze the credit risk of companies of countries and banks financial institutions any entity that seeks to raise debt capital from the market okay they only look at the credit risk so they're only involved in debt markets okay and they rank the credit risk using some indicators so nothing told us about triple a double a single a so each agency has its own notation uh scale but they have some broad equivalences what do you need to know about rating agencies they've become very important because the regulators made them important the regulators outsourced regulatory power to rating agencies with uh banking regulations going back to basel to regulations which we will talk about at the end of the course and there is a lot of questions around rating agencies particularly the fundamental conflict of interest because they are like auditors they are paid by the companies or countries that they rate and therefore have a vested interest in not um making those companies angry but also importantly they have a very big conflict between their consulting role and their rating role same as the auditors so look at the parallels we're both we have both type of institutions giving opinions both have conflicts of interest and in both cases you have a fundamental conflict between the advising portion consulting portion and the rating or auditing function okay so the same issues appear with both types of institution ariane asked me whether the global financial crisis was caused by their bond rating agencies no they did not cause it they contributed to to the disaster uh because um one of the challenges for rating agencies is traditionally they are very good at understanding um basic credit so basic cash flows but during the global financial crisis one of the sectors the sector that started the financial crisis was the subprime mortgage market and it started the crisis because these supply mortgages had been packaged into uh securitizations which was not so bad but then you had securitizations of securitizations so the first derivatives is generally not a problem the second and when you get to the third derivative it can go in any kind of direction so the problem was that the rating agencies started grading derivatives of securities and that's really not that expertise so they got it badly wrong and then we run into issues of liquidity so long answer for your question aryan no they did not cause it but they definitely contributed to it and they accelerated it when they downgraded all their so-called a uh cds or cc pdos okay all right so now what time is it 5 34 i should have enough time so i'm going to uh put you guys into three breakout rooms and what i want the three breakout rooms to discuss it's the objectives and incentives of some of the players in the market so i'm going to create a breakout room where you will all be issuers so you will imagine that you're the cfo the chief financial officer of a large corporation that needs to raise financing and i want you to think about what is important to you what are you trying to achieve in the second breakout room you will all be investors so you will all be the chief investment officer of a very large fund management company and i want you to think about what is it that i'm trying to do what are my objectives what are my incentives in the third breakout room you will be regulators you're going to be the um the head of the securities regulator in your country so imagine you're the head of the sfc the head of the sec and i want you to think about what are my goals what are my objectives what are my incentives okay everybody's on board i'm going to start the process see if i can make it do i do the breakout room um where does it work men's ah there we go back rooms three breakout rooms and assign automatically boom here you go and you'll have ten minutes and you have to join the breakout rooms i have three students here can you join your breakout room please chingloon hello jingloon are you there for you [Music] kingdom wow so jinglung are you here king known so so so this so so so so so so okay uh so uh welcome back we still have a few uh finishing off okay so did you see the broadcast messages you could see the broadcast messages i put broadcast messages with the timing and asking you to make notes right so that you can debrief because it's of 5 47 and we are supposed to finish at 5 50 so i don't want to keep you too long so we'll do the debrief now and also for the next class okay do we have everybody back now i think so yeah okay so i'm room one my issuers talk to me okay roman go ahead go ahead okay um so we came up with a lot of things and the first thing obviously is to raise capital yeah but at the same time like if for example if an issuer a company wants to go public then maybe an interest is also to maintain control of management so not to give away like a majority stake so that there might be like a takeover by someone um also increase the power of the company and attract investors obviously um similar to raising capital we also said improve the liquidity of the company and do that to grow the company or make investments or improvements at the company we also said that it can be used to attract awareness and create publicity and also um in a similar sense um attract human capital because for example if a company goes public then it will definitely need a crucifix and that might attract human capital if it's big if it's big investors then they probably know what they're doing and they have a lot of knowledge that they can contribute to the company um and also it's a way it by going by issuing stock companies will have a new way to pay employees and which will also work as a way to increase employee retention then the last thing we had was that if the company is bigger through more money then um it'll it'll probably have lower interest rates on bank loans okay thank you roman uh yen yeah and it's also about sending a message to the market that the company is actually having a stable financial growth so this can help the building of brand name and give the confidence to the shareholders checkpoint yeah for start-up companies raising funds can increase equity and can attract angel investors so that they can be on track faster okay uh so you're taking it from the point of view of the startup right right okay [Music] yes basically i have some some few points to add for raising capital we mean a large amount of cash and um for awareness we mean like kind of potential potential customers and like suppliers and that that kind of thing we're tracking attracting investors right okay i want to add a point that yeah i also want to at a point that liquidity is very important for the current investor to exit okay so we've had liquidity there very good uh any other things that you want to mention well this is all very good i attract customers i could put attract customers that's indirect right so when you're raising uh when you're raising financing it's not so much with the perspective of attracting customers it's more attracting investors but uh indirectly you are also attracting customers now you said okay we want to raise a lot of capital we want to raise money we want to go public well you're not talking says somebody said a lower interest rate i can't remember if it was roman or somebody else um when you want to raise capital you also have you want to raise money but you want you want to raise it at a low cost okay so this is something very very important to think about so you've talked about money dilution power trust etc but you also need to think you're the cfo the chief financial officer so you want to minimize your cost when you're raising capital you want to make sure you have liquidity which you to put about here and i know i'm running out of time so those of you who have to run you're welcome to leave it's okay i will not mine i just want to point out one thing here you've looked at it from the point of view of the company what about the cfo himself or herself what are his incentive or her incentives all right so you need to think about you know what is the cfo's point of view in all that so sometimes you find situations where you talk to a cfo and what they really want is to be famous so they want to do this say very sophisticated transaction so that they're the first one to do a green bond they're the first one to do securitization they're the first or they talk to their to their buddy the other cfo who's they were playing golf over the weekend and this other cfo says oh my bank has been talking to me about that and then the cfo is not upset because his bank has not been talking to him about that and then don't forget that sometimes uh the personal paycheck of the cfo or the ceo is tied to financing decisions so when you're talking in terms of incentives and objectives don't forget that you have two parties involved you have the company itself but you also have the person you're dealing with and what are they trying to do okay chen day you still have a question because your hand is up oh sorry i have i forgot to put my hand don't worry don't worry just checking that i'm not missing you out okay so thank you for staying uh it's 5 54 so i've exceeded my time thank you very much i will debrief uh investors and regulators at our next class which because it's chinese new year will be next week so kong hey fa choi happy chinese new year happy year of the bowl uh don't eat too many sweets be careful be safe and i will see you a long time from now gonci fatsai kung hey fa choi happy chinese new year [Music] bye uh

my uh wow hello everybody good afternoon i've missed you it's been a long time since i last saw you hi is everybody good okay i'd like to see a few more of those beautiful and handsome faces rather than a black screen that you are so nice to see you again hello okay wonderful in some cases i'm seeing just a bit of hair this is funny okay la good to have you back so when we left off uh we went deep briefing you remember we had brainstorming session on some of you were issuers some of you were investors and some of you were regulators so i'm hoping that you will remember what we talked about and you will have taken notes uh because we only had time to debrief one group which was the issuers group and i took notes as you were speaking of the objectives and incentives of issuers so just to refresh your memories as a cfo of a large group you are interested in raising capital possibly going public you want to avoid dilution increase the power of the company maintain the trust of investors grow the company grow the liquidity attract positive awareness publicity and brand and human capital finding new ways to acquire retained employees a lower cost of capital increasing shareholder competence attractive investors and customers so we covered a lot of ground but one of the things we also talked about was when you are negotiating with a company and a cfo remember that you have the interest and the incentives for the company but not forget the person you're negotiating with because they might have their own incentives and objectives so for a cfo or a ceo this might actually include uh you know the ability to earn a good bonus stock options and stuff like that by making decisions that will increase the stock price but might have negative consequences in terms of the long-term viability of the business so hopefully there's some of you who were in the investor group and who are going to give me some feedback hopefully you took some notes uh as an investor so remember you would the role play was you were the chief investment officer of a large institutional investors and the question was what are your objectives what are your incentives can some of you who were in that second group uh give me some feedback so you can raise it yeah yeah oh okay visit chai go ahead go ahead um yes so i think that some of the uh the objectives would be to make money from investment that's probably the most important one and um also to support the development of different sectors as well and to um secure their financial security in the future who is financial security um of the investors of yeah of their own as well as the companies as well okay that's great when you said support development of different sectors what did you have in mind do you remember um i i thought about you know like different um for example um the environmental um development like maybe if if they really uh support you know solar energy or renewable energy they would uh invest in them into you know further that okay great anybody else in that group who wants to give me feedback uh yes professor i can i can go ahead so one was i think maintaining liquidity of the investors they want to make sure they have cash flow yes and they want to minimize their risk too with their investments so i guess uh that ties into financial security as well then if we talk about uh banks and uh even the sovereigns and quasi sovereigns if we talk about like suppose the federal reserve of uh us they want to maintain the stability of the market and ensure growth investors uh i think you had in included sovereigns and quasi sovereignty as yeah okay okay good point point so from their perspective uh like the federal reserve uh like jerome powell he pumped money into the economy to make sure it uh it maintains stability so i guess in in a sense they're also investing uh in the economy i'm not sure if that that thought process is correct but that was one uh idea then the other was also protecting against inflation uh so they want to beat inflation and even uh market indexes like the s p 500 if you want to beat that then you have to ensure growth so growth of investments that was again making money and minimizing tax also so investing in a way that would uh reduce your capital gains tax or in that sense so investing along those lines and uh some people also resort on dividend base uh income so so it could also be a source of income uh for certain people and uh fund managers will definitely allow for instruments that uh that that enforce trust of other investors to invest in their funds so so they need to also ensure the trust of their investors and the reliability of their fund [Music] i think uh that was most of the professor this is great great thanks ariane and fizzy chai and yeah anybody else in that group wants to add anything so you can also raise your hand or type things in the chat whichever way you prefer but that's really really good i really like that you brought up some of the key uh you know the three key words actually so return so in finance we have three keywords return risk and liquidity all right so these are these are key words that we need to um always take into consideration and i realize i've got one thing here okay i'll move it that on the other side so we can all see it there we go okay so uh great debrief on that point so look at three key words okay return risk and liquidity when we talk about finance we will keep coming back on those words so very very critical fundamental three words and those three words concepts have relationships with each other all right so broadly speaking the more risk you have the more return you should expect the more liquid the investment generally the lower the return okay there are some relationship with this things not always but broadly speaking there are some relationships so this is very good also don't forget that as a ceo cio chief investment officer you yourself may have an agenda okay so we will talk at length about fund management uh mutual funds etc and the challenges that are involved in managing funds on other people's money uh and one of those is how do you measure return and performance and for many fund managers it's performance measured on a relative basis that is by reference to something generally an index however for the end investor as you said you know the ultimate investors you want absolute returns in other words you don't want to lose money okay so that creates a very inherent conflict of interest between portfolio managers who are measured on a relative basis and the ultimate investors who are looking to make money and we'll talk a lot about this when we move to uh institutional investors discussion before that let's talk about my regulators so regulators who wants to debrief me yeah so i'll do it so the first thing is that we have to we would like to establish stability in the market as well as build up trust with both the buyers and the sellers and we'd also like to build up the attractiveness of the market for potential investors and customers as well as um we'd like to make you know transparency is a focus when it comes to our policies as well as the strict enforcement of those policies and our main goal is to balance the interest of both the buyers and sellers yeah that's all i got that's really good shiraz thank you anybody else wants to tell me about what this group discussed no any raised hands any contributions okay so if not then we will discuss a lot of this when we go to the last part of the course which is on on regulation but at this stage one very important thing to remember is broadly speaking the regulators financial regulators tend to have one overarching objective and that objective is to protect the little guy so i want you to come out of this class thinking about you know the knight with the shining armor racing to rescue the widow and offering that's your regulator so that's the mission of the regulator they are charged with protecting the little guy the widows and the orphans the retail investors and the reason for that is the little guys tends to have less information than the big institutions so a large part of the work of the regulators will be to make sure that the information is available to investors to make informed decisions okay so we will talk at length about the objectives of the regulators all of what you've mentioned is good and correct but the primary objective is to protect consumers the little guys okay the assumption behind this is that institutionals they are professionals they know what they're doing okay so they don't need as much protection as the little guys okay so that is and also you know there's one point here that's uh very important so i'll just jot that down protect consumers by which we mean retail investors and the other thing that we need to talk about here is who are the regulators so in terms of their profile who is typically acting as regulators anybody want to jump in yes roman go ahead um governments or like government appointed institutions like the sec for example right so in terms of the individuals involved what kind of professionals are insurance in regulators auditors auditors now i'm thinking more in terms of the kind of career that these people come from law right it could be law right but the point i'm trying to make if you think about as roman said a lot of the regulators are actually government institutions right so it comes from that that a lot of the regulators tend to be civil servants okay they are part of the government body part of the administration in many cases not always because we will talk about the fact that particularly in the u.s you have what we call the revolving door between regulators and the industry right so the point i'm trying to make here if you think about who are you regulators the individuals themselves very often they employ bureaucrats civil servants right and as a result these people are not paid a lot of money they could make a lot more money if they were working for the private sector and the second point is as regulators are part of government bodies in many cases the budget they have is not huge right so think about that right they are regulating very big powerful rich financial institutions who have access to money skills technology so it is a hard job to be a regulator because you are trying to keep up with developments in the market with not a lot of money maybe not a lot of experience and your career prospects may not be all that great okay so one of the challenges of regulators is you know how do i attract the right people how do i have enough budget to investigate everything right how do i keep up with technology and financial innovation so we often call it catch me if you can this is a big challenge of regulators is a lot of them are you know probably not very well equipped to catch these guys the industry tends to be ahead of the game okay so this is a a bit of an issue and then you have to think again my recurring theme is the person you're dealing with or the regulator you're dealing with what is their objective what's their career what's their prospect so in a market like the united states where regulators often come from the industry and then eventually after serving for a number of years want to return to the industry that creates what the yes roman creates an incentive for them not to regulate their future employers that much that's right it's a potential conflict of interest right so you always have this thing at the back of your mind you need to be aware that you are dealing with an institution but you're also dealing with people and when you're negotiating you need to think about that so what is these people's objectives what are their incentives what are they measured on okay not to say that you know regulators are you know backwards and ignorant or anything like that but you have to be aware of the the environment in which they operate and you know what is what is the reality of that rule okay so we've debriefed all three big categories uh does anybody have anything else that you'd like to add complement no all right so with this we're going to be moving on to the last part which is how does it all work but before i do that i wanted to share a few tidbits from the press i so the first thing remember i gave you some warnings about what you put on social media all right so this is an article from bloomberg back in january which talks about how you must be careful what you're putting on social media particularly when you're employed by a company if you want to keep your job you have to be very careful what you put out there so the the the article talks about some comments that one guy had put on twitter about biden and lynching mike pence which uh is a really bad joke but uh it was picked up and then the guy was fired okay so you have to be very careful uh social media can be quite dangerous if you're relying on a paycheck so again this is to warn you to be very careful what you put out there look at it through the eyes of an employer and if you're not yet employed think about what a prospective employer might find if they're digging into your social media profiles okay so the second thing i wanted to share with you remember when we brainstormed about what are the ingredients we need for financial markets to work and operate and we talked about infrastructure well there's been um very interesting developments you probably know that in the united states there is a huge snowstorm and that snowstorm has created huge problems with the power grid in texas so the power grid in texas went down and there are like a lot of people who have no power so remember we talked about blackouts in asia well guess what it happened in the us right after we talked about it um and and this is a really interesting situation because it addresses the problem of how do you plan for a resilient infrastructure given all the uncertainty related to climate change and one of the impacts of climate change is that it creates unpredictable weather events i have friends in texas they hadn't seen snow in all their lives so you know and and the temperature was below freezing i mean imagine what it is below freezing texas is designed for hot weather their whole pipes water pipes are not insulated like in hong kong imagine if we had below freezing in hong kong imagine what would that be below freezing i mean mongolian temperature in hong kong all the water pipes froze and then burst so now you have no water so you have no electricity you have no water and you can't go out to access is becoming very difficult the point of making here is we need to think about this in terms of the risks that it creates for businesses for the environment and resilient infrastructure is going to be absolutely key in relation with that let me point out that some of the most developed countries in the world have very bad infrastructure so this is an article from the guardian which is one of the uk newspapers where it talks about some of the bridges in london and if you know london has a big river called the thanes that flows through it and in order to go from one point of london to another you have to go across a bridge well you know some of these bridges are actually falling down uh you know there's a childhood rhyme called london bridge is falling down while it's actually falling down and they haven't maintained this infrastructure and there's this article points out the mess with the hammersmith bridge which creates all kinds of problems for people living on both sides of the bridge that we're relying on being able to walk across and now they can't long story short this is all to point out to you that the things we are discussing in this class make a lot of sense and are actually happening as we speak okay so now we're going to move on to the part of the course where we talk about how it all works and in particular what i'm going to talk about now is how we cut and slice financial markets so this part is really about understanding a lot of the terminology a lot of the language that we use in markets and so that you can become fluent in market speak so we tend to cut and slice markets in different ways so we're going to talk about what is a primary and a secondary market then we'll talk about debt market and equity markets then we'll talk about exchanges and over the counter otc we'll talk about domestic and international markets and we'll finish with public and private markets now there are other classifications for example cash and derivatives market but i'm going to cover these five differentiations because otherwise we'll run out of time okay so let's start with primary and secondary so what do we mean by that the primary markets is where you raise money and capital okay the secondary market is like secondhand where investors buy and sell securities from each other so in a primary market a borrower or an issuer raises capital from investors in the secondary market investors buy and sell securities from each other financial markets generally but not always not always have a primary and a secondary market the easiest way to think about it is think about a car so you can buy your car first hand from the manufacturer or you can buy a car hand from a car dealer okay so when the manufacturer sells the car to you it's a primary market when you buy it secondhand it's a secondary market it's very simple okay nothing very complicated about that now when companies raise capital in the market for the first time this is called an initial public offering okay so that's when they raise money for the first questions i hear some noise here okay all right so let's see everything clear so far yeah okay well let's find out benson do we have prs and son oh yeah okay people log on to prs let me give you some time to do that whoops make sure they have time to log on benson so so so oh all right very good so overwhelmingly found the first answer correctly next answer next question sorry if you buy shares from another investor is it primary or secondary market so ah you very good excellent so you got it so it's a pretty simple concept right okay so let me stop my participant sharing and reclaim the screen here we go okay very good so you got the idea huh all right so let me use the chat where's the chat okay okay will you upload these questions on canvas later they are in the slides and recording uh gives you the answer okay good all right so now we're going to talk about the second classification which is debt and equity so to understand how we divide between the debt market and the equity markets first we need to know what is that and what is equity now we touched upon this at the beginning of the class when we talked about the accounting right now that is basically a contract okay it's a legally binding obligation therefore whenever you are dealing with debt and credit markets you first need to look at what is the legal system that governs the contract okay so because the rights and obligations of the parties are part of the legal system and how those rights and obligations are enforced depends on the legal system when you are a creditor of the company and the company owes you money that does not give you a say in the management of the company you do not have the right to vote and you do not have the right to get involved in strategic management of the company with one exception what is that exception does anybody know what is the one exception when creditors get involved yes very good black prey and nothing very good when the company is in trouble then the creditors can organize and work out the situation with the company so again that depends on the legal system in the united states there is something called chapter 11. chapter 11 is basically a process where the judges can impose a reorganization of the debt to the creditors okay so it's a courts ordered process we don't have this in hong kong so in hong kong yes terry and i'll get to your point in hong kong when the company gets in trouble either it ends up being liquidated or it has to work out with the creditors ahead of time and then together with the creditors get to the court and get the call to sign off on the negotiation it is not a court-ordered process in the mainland there is a bankruptcy law similar to chapter 11. what's the point the point is to give breathing space to companies that are going through a temporary problem give them time to work out the situation so that they can continue to exist if you don't have any organized process to do that well the other choice is liquidation and the company ceases to exist okay now uh tyrion asked me can a creditor convert the debt into equity yes under certain circumstances so um there are financial instruments that include that options they are called convertibles or hybrids and in the bankruptcy process there are often debt to equity swaps where the process entails creditors becoming shareholders of the company okay so again whenever we talk about debt we're talking about contracts so we need to know what is the legal system the creditors don't get involved in the management of the company except in really bad circumstances and that generally but not always requires the repayment of the principal so please note how we spell principle okay uh-huh what is my thing principle a l not l e they're two different words okay the principle is the money that the company has effectively borrowed okay so in a debt contract it will specify how much the company is borrowing or issuing and when it has to pay back so though payback can be in different bits and amortization or it can be in one amount at the end sometimes sometimes there are financial instruments that do not require the repayment of principle has anybody heard of that what instruments dead instruments actually they're hybrids do not require the repayment of principal bonds no taxpayer bonds unless they're very very very specific instruments bonds normally require the repayment shares okay stock and shares is not debt it's equity options is derivatives futures is a derivative instrument okay now there is a financial instrument which is called a perpetual and in the next part of the course when we talk about interest rates and dcf perpetuals or consoles or perpetuities are financial instruments where there is no maturity no end date it goes on forever so there is no required repayment of principle okay we'll talk about this when we talk about dcf and different cash flow discounted cash flow calculations all right um the second point is that that normally and again i emphasize normally requires payment of interest now this is probably more familiar to you do you know what financial instrument do not require and i mean debt instrument do not require payment of interest anybody ah again that's creative accounts payable zeros and what do you mean so y zero what zero coupon bond very good very good very good zero coupon bonds means no coupon and coupon in the bond market is interest okay so you have a whole range of debt instruments where you don't pay interest it's all built in the cash flows at the beginning and at the end okay so zero coupon bonds are bonds that do not pay any interest right so you can see that debt normally are contracts that require payment of the principal eventually at some point but not always and normally requires payment of interest okay now third important point nudging no derivatives are not debt or equity derivatives financial instruments whose price is derived that is to say based on other financial instruments so they're not strictly speaking debt or equity okay they are derivatives all right so um we survived we will talk about the returns on zero coupon bond we will actually calculate that in the first quantitative part of the course uh roman there are quite a lot of zero coupon perpetual that would be a bit tricky [Laughter] okay but perpetual they are all right uh the next point about debt and it's a very interesting point is that normally again i emphasize normally interest expense as you will recall when we talked about the financial statement interest expense is normally tax deductible so when companies raise debt capital when companies raise that capital they can deduct the interest expense from the taxable income okay which means that you have a tax advantage of debt because by contrast dividend payments happen after tax however this is designed by the tax and legal system of the country in which you operate currently most countries have tax deductibility of interest and dividends are paid after tax but not all of them in some countries you can have deductibility of dividend and there is a lot of discussion about is this encouraging leverage that means the amount of debt in the system in fact under president trump he passed a tax act which limited the amount of interest that companies could deduct from their taxable income all this to say is current corporate finance theories rely on the tax deductibility of interest do not take this for granted it can change and it might change so always be very very careful this is not written in stone last part about debt contracts is there are contracts contracts have conditions built into them and those conditions can impose restrictions on the company's management remember i said as a creditor you don't get involved in the strategy and the management of the company but the debt contract can impose on the management of the company certain conditions can you think of the kind of conditions you would expect to see in a debt contract cost cutting nyan not generally as part of a debt contract pay back that yes that will specify the maturity when you have to pay back collateral very good the cost yes limited market limiting marketing strategy not quite sure what you mean by that [Music] any other thoughts allocation of the debt by this do you mean use of proceeds what you use the debt for if that's what you mean yes it is correct sometimes you have restrictions on what you can use the money for good yes yes limit the cash flow yes you can have restrictions on cash flow for example creditors want to know that the money the company generates in cash flow is going to be used to pay back that act first so you might for example require the company to set up special accounts and the money flows first to that account to pay the debt and then for the rest of the purposes of the company yes retained earnings so retained earnings is basically the bottom line right so the net earnings and then you decide what you do with that so debt contracts typically do not address the net earning their retained earnings um they do address the level of leverage so songhaq is putting equity level so often you will have leverage ratios in the contract that say limit how much debt you have in the capital structure very good anything else these are very good suggestions repay proportion of principle and interest yes so the contract will specify when you have to pay back how you paid back how much it costs when do you pay interest and all of that yes anything else so imagine you're the banker you're going to be lending money to a company what would you like to see in the contract yes the cost of the interest and how it's calculated and all that what else i'm talking in terms of you know how you might limit what the management of the company can do did somebody raise a hand and then disappeared oh company's cash flow yes you are going to be watching the company's cash flow and you will have often financial covenants that say you need to have a minimum amount of interest coverage ratio okay uh roman audit opinion has to be clean yes very good credit rating very good very good sangha the credit rating might be a trigger for increasing or decreasing the cost of the debt profitability of the company indeed if profitability ratios fall beyond a certain level then you might see some action how liquid their assets are so that's an interesting suggestion robin um you might possibly i haven't seen it but you might impose a certain amount of liquidity on the company so that would be some liquidity ratios anything else that you would want to prevent the company from doing taking too much risk definitely so that could be through the leverage ratio anything else that you might want uh to work on terminating what do you mean by that oh shiva is very good selling the company to the competition almost there okay so one trick that creditors like to protect against is the company management taking some of the assets of the company and giving them to other creditors to raise more money or changing the business of the company so for example in hong kong it's very or china it's pretty common that companies change their business as um but no i can't remember 15 years ago i can't remember exactly but there was this uh uh telecom company hong kong telecom no not hong kong telecom whatever it was whatever i can't remember taken over by a company called pccw and so creditors assume that we're lending to a utility except richard lee decides to go into real estate so all of a sudden the business of the company has changed very drastically so this is the kind of thing where you want to pre protect yourself against the risk that the company management changes their business model completely so the risk you're taking is completely different or that they take the assets of the company and sell them to somebody else or use them to raise all the capital so there's all kinds of covenants that you can put in the contract that restrict the ability of the companies management to do certain things so really really good discussion i'm really impressed with your thoughts okay so that's debt and then you have equity so equity capital so what is equity so i want to be very clear here because there's so many misconceptions about what is equity so sanghak says ownership yes and no it is a form of ownership i think maybe we discussed it a little bit when i when we started the class back a few weeks ago it is a very specific form of ownership when you're talking about large public limited liability corporations why because you own a piece of a legal entity it's very different from ownership of a business for example if you own a bakery you can go and eat all the products and become very fat but nobody's stopping you because it's your business so you can do whatever you want with it if you are a shareholder of apple you cannot go into an apple store and just take any of the products okay they're not yours they belong to the company and you own a piece of the company so you see how shareholder ownership is fundamentally different from business ownership all right this is a very very important point to consider now owning a piece of a company gives you theoretically certain rights okay what are the rights of shareholders right yeah so you have theoretically the right to vote okay and because you have the right to vote ultimately decide how the net earnings will be divided between reinvestment and paying dividends and if dividends are paid you'll have a right to the dividends that's the theory because it depends what kind of shares you have theoretically common shares give you voting rights but not always in fact there are companies with the limited voting rights you even have some companies with no voting rights does anybody know which very famous company went ipo a few years ago with no voting rights at all for shareholders and no it's not tesla not apple no have you ever used an app that allows you to put big ears and big nose and the long tone that's right roman snapchat snap went ipo with no voting rights at all okay so shareholders in snap have no rights at all okay they cannot there is no voting rights so they have to blindly trust the founders and amazingly this company is doing pretty well now again um the dividend so some of you put dividends right to dividends well that assumes the company is actually paying dividends okay so when you think about it to get dividends what needs to happen what's the first condition for a company to actually pay dividends yeah that's right it has to make money it has to be profitable and what's the second condition that's right roman they have to declare a dividend which is subject to the board and the shareholders right now theoretically the investors have a say in that except when they have no voting rights and except for the fact that in reality very very few cases of shareholders voting against management and forcing a dividend declaration this is generally the realm of activists investors okay so net net what am i saying i am saying that in the case of equity it is a very specific form of ownership that gives you very limited rights when they even exist and the only real right you have there's one right that you have what is the real right that you have [Music] if you're a shareholder what's the one that's correct very good you can sell the stock okay very good very good so guys are really smart and i'm having so much fun with you that's fantastic okay so now we set the picture okay we have two very different worlds we have the world of dead we have the world of equity now this is very important so pay attention this is terminology that we use in financial markets so if you interview for jobs in finance you need to understand this the first thing okay is securities now textbooks generally confuse you endlessly what are securities there are negotiable tradable financial instruments in finance when we talk about securities we talk about negotiable tradable financial instruments we then separate that between equity securities and debt securities okay equity securities is stocks and shares that securities is bonds and notes okay remember it has to be negotiable tradeable financial instruments all right the capital markets are financial markets where you trade securities and where firms can raise capital in the form of debt or equity therefore we have equity capital markets ecm and debt capital markets dcm so later we will talk about investment banking we'll talk about ecm and bcm you need to be familiar with the terms all right now financial markets include but are not limited to capital markets all right there are many other types of financial markets which are not strictly speaking capital market these include in particular the foreign exchange market the foreign exchange market fx for short fx market or forex market is the market for currencies okay it is the biggest deepest most liquid financial market in the world by a big order of magnitude now every day gazillions of currencies are changing hand and very very fast okay so the foreign exchange market is not a capital market because you do not raise capital in foreign exchange okay you convert currencies against another currency either today or at some point of time in the future then you have commodities market so this is where commodities change hands and this can be agricultural commodity precious metals metals etc you have as part of the overall debt and credit markets you have markets of debt instruments which are not securities like the loan market the private placement market these debt instruments are not bad securities they're not negotiable tradable the money market includes some debt securities and others which are not that security and then derivatives so derivatives are not securities now there is argument about that i don't consider them securities you could say that list of derivatives like futures and listed options could be considered securities but i don't strictly speaking consider them security okay so what you need to remember securities negotiable tradable financial instruments you have equity securities that's security capital markets is where securities are traded and where companies raise capital hence the word capital markets equity capital market that capital market and these capital markets are part of financial markets okay any questions on this all right now this is really important okay okay so if i look at the overall debt markets part of it is debt capital markets which we've just talked about but you also have money markets which is debt instruments less than one year loan markets and private markets and then you have the equity markets and then you have here a little bit of overlap which i call hybrids so what are hybrids well they are financial instruments which have some of the characteristics of depth and some of the characteristics of equity for example convertible bonds are bonds with an equity option that allows the investor to convert the bond into shares under certain conditions obviously there are other kind of hybrids such as perpetuals that are instruments dead instruments issued by companies and banks with no maturity and where the issuer has the option to convert that instrument into equity so they're very different okay so um what are you writing about yes there is a secondary market for the bond market there's a secondary market for equity uh loan markets not so much it's very illiquid uh some of the money markets do some of the money markets don't okay so in different financial markets you may or may not have secondary markets but by nature securities can be negotiable have to be negotiable and tradable so the potential is there the question then becomes how actively is it traded how liquid is the secondary market and we'll talk about that later okay so do you get the debt and equity thing any questions on debt and equity uh professor i had one doubt uh our derivatives also are pretty prominent in the secondary market right it depends on the derivatives okay so if you're talking about futures so futures are very specific derivatives instruments because they are specific to a particular exchange and i'll talk about that later so they are traded on exchange which is why i said if you are talking about derivatives that are listed and traded on exchange then there is a secondary market but most and the vast bulk of otc derivatives like swipes do not have a secondary market okay and another doubt i had professor was regarding the dividend declaration and how it is that uh they get to the decision of how much uh a dividend percentage they should declare for the investors and what all factors that takes into account so if you think about it right so it's a matter of what we call corporate governance so remember as a company the investors put money in the company as shareholders right the shareholders are represented in the structure of the company by the board of directors okay the board of directors is supposed to set the strategy so the board of directors is the one who is going to decide whether to pay dividends or not based on the the recommendation from the management or the ceo and the management of the company and then the shareholders meeting will vote on the proposals from the management of the company and the board of directors right but the difficulty here is that do does the board of directors really represent the interest of the shareholders and who appoints the directors on the board in fact when you have the beginning of the company who appoints the board of directors is generally the ceo founder okay and then after that shareholders have to vote for the directors on the board the reality though in modern markets is that there are so many okay no problem uh there are so uh so many passive investors that shareholders actually don't vote that much so the management and the board pretty much make the decisions that they want very rarely do you have opposition from investors but this is a long discussion which would take too much time arya okay if you're interested in that you have to read about corporate covenants okay thank you all right any other questions all right so we've talked about primary and secondary we've just talked about debt and equity so you're clear on the difference between that and equity let's see benson we're on for the next iprs pension oh mention okay here we go next question all right first question if a company issues bonds which type of market does it use ecm odcm so okay um um true very good so it is indeed dead capital market next question the fx market is a capital market financial market so foreign all right indeed it's a financial market not a capital market very good okay so let me stop this and reclaim this year we go all right so i had a question from sawai uh in slide 72 75 this is primary and secondary market you say money market means fx so this is primary and secondary so foreign exchange as specified in slide 78 is fx market it's not money markets okay money markets is part of the debt markets but it is not per se a security market all right so here this is debt markets okay this is equity markets so money market is part of that markets under one year all right so that's not fx market fx is different it's it's kind of like over there all right any other questions so we're clear so we are if we're issuing bonds we're doing debt capital markets if we're doing foreign exchange it's a financial markets because we do not raise capital okie dokie almost all clear good all right so next we're going to move on to something a bit complicated okay we're going to be talking about market organization and market structure so i'm again i'm going to be debunking a lot of uh misconceptions so first thing is we're going to talk about four types of market organization so by which i mean you remember when we talk about the main functions of financial markets which is to connect sources of funds and users of funds right so how do we do that how do we get organized how does it work to connect those two signs so the first way the simplest way is directly so let's say chai wants to buy some shores in what you want to buy fizzy charm let's say you want to buy uh like an airline or something i like plates an airline okay you want to buy cafe pacific or thailand yeah i'll go with i'll go with cafe all right okay so you want to myself cafe and let's imagine for a minute that packed way uh is the owner of a few shares that he actually wants to sell how is that going to happen so one simple way is that physics i uh talks to factory taxpayers sells the shares to visit china that is direct okay the buyer and the seller meet and agree that's the simplest of all but it's also complicated why because hey you know what that phrase and where are you taking are you in hong kong china can't hear you i'm in hong kong yes okay so we have chat with hong kong and fiji chai are you in thailand or somewhere i'm in hong kong as well oh yeah but you're in a different part of hong kong right so you don't know each other you cannot meet so it's complicated so how are you going to find each other right so direct search is both simple and complicated because unless you know the other party how are you going to connect right so you need some help and some help means you can use brokers or you can use dealers okay so let me walk you through that and we'll come back to that again okay so direct search very simple buy and seller meet and agree together okay simple broker is different so we still have fizzy chai who wants to buy shares and parkway who wants to sell shares they don't know each other they're in different parts of hong kong how are they going to connect well they they happen to both know roman and roman is a broker his job is to connect people because he doesn't do it just because he's a nice guy he also does it to make some money there you go so visit chai can call roman and say hey you know i want to buy some shares in apple and [Music] roman whose job it is to know all the players in the market will contact her and say hey you know those shares you mentioned in apple would you be interested in selling them and then he will put the two parties together the transaction will happen between the two parties not through roman roman will just charge a fee or a commission for the service okay so the buyer and the sellers still transact together but they've been introduced by the broker who helped them to reach that transaction in consideration of a commission or fee okay so roman makes money by connecting people nice job right sometimes you can actually also go through a dealer so what is a dealer okay now let's see john day is going to be our dealer today hello gem day how are you all right so jongdae is a dealer in apple shares uh casey pacific sorry so his job is really to know the cathay pacific shares market and participants in the market know that john day is actively buying and selling shares all the time so why is zhang day buying and selling shares not because it's just fun but hopefully he wants to make money okay so how do we make money by buying and selling stuff dang day how do you make money that's right you can talk you know that's right difference between the you don't want to talk all right that's okay it so it's a difference between the price at which you buy and the price at which you sell so hopefully you sell higher than you bought and you make some money all right okay okay now i'm not talking about shorting right now okay let's keep it simple so my friend is a child here he could either look for where or he can call roman or he can call gender and buy the shares from chengdu who will then turn around oh if he doesn't have them already he will buy them from tech okay so notice how different roman's job as a broker is from gengdy's job as a dealer chang day is buying and selling stuff and make money from the difference we call this the spread but chang day takes risk what is the risk that genji is taking that's right chang day is taking a market risk he's taking the risk that if he boards things at a certain price the price will fall okay and that mark that change in price when it goes against you is called market risk okay so the risk arising from price changes in the market does roman take risk no okay well it takes a risk that he might not get any business done if he cannot find two parties but he's not buying and selling stuff okay he's just introducing people for free so very important to understand the difference between a broker who is an agent and a dealer who is a principal okay acting in his own name using his own balance sheet okay now there's another way you can find buyers and sellers is putting them all together in an auction market so auction markets is when you put buyers and sellers together and you have an auction mechanism and by the way it's 125 so if you need to leave that's okay with me i'm going to rub up in a second auction markets put all the buyers and sellers together and have an auction mechanism to determine the price okay so four ways that we can make a deal between a buy and a seller directly through a broker through a dealer or through an auction market okay we will talk next time about how that impacts price determination all right thank you very much have a great weekend oh my god the questions you're putting in here uh i will answer those questions but you are free to go have a wonderful weekend i will see you whenever that monday right yeah bye okay what was that question okay yitong uh how do auction institutions earn money they basically charging fees um commissions that kind of thing um but i i'll have to check in more detail because it really depends on which auction institution we're talking about i'll shares are stockholders responsible for crimes committed by the company no uh the corporate limited liability corporations the reliability of stockholders is limited to the investment that they've made that's the whole point so when you're buying shares you're just putting money in the company you're not responsible for what the company is doing but you can sue the company and the management for crimes committed by the company this is what we call securities fraud in the united states and if you read some of the newsletters that i have recommended uh like matt levin uh matt levin talks a lot about securities card okay uh can retail investors also be considered dealers in real life there are many examples of dealers so we will talk about this in more detail uh next time what's your name my only professor yes yeah i want to ask like what's the point of buying zero interest bonds for the investor since you don't get any think about it think about it why would you buy a zero coupon bond oh because like the um if you put in a bank maybe it's more risky i'm not sure so you have to think about how do you make money on a bond okay part of it is the return from the coupon but what's the other part of your return where's the other part of your return come from is it because we cannot attack jacques i cannot hear you very well it is because we can lower the tax after buy the syracuse then why that's because he's saying uh are we not taxed under the bonds that's a joke finger saying now when i was answering where you should rise right and you think about the return from the bond there's two parts what is the interest and the other part is the price that you pay for the bond and the money you get at the end so the difference between the price at which you buy the bond and the final payment or if you sell before maturity the price that you sell it up okay so you have to look at those two components and this is not the same like if i buy a zero interest bond for one dollar later on it's not going to be one dollar one day this is a whole question about bond bond pricing which we will get to eventually but first par first question is if you have a bond with the coupon it depends on what the interest rate is in the market right so maybe your coupon is pretty high and currently the market rates are very low okay so you have a difference between the interest that the bond pays and what you would get otherwise in the market so if you think about it a zero coupon bond in a normal market would not be terribly attractive apart from the price difference but if you have negative interest rates zero is better than less than zero right most importantly zero coupon bonds sell at a discount to park so you buy them at a price that reflects the difference so in other words the return that you get is the difference between the price at which you buy the zero one bond and the payment that you get at the end okay so the answer to the question why would i buy a zero coupon bond it it depends on the price oh wait yen i love the cat on your photo thank you i love it as well all right any other questions uh professor i want to ask questions uh uh what's an example of an auction market uh but we'll talk about that next week okay may ask what's the major difference between the relatives and securities yeah so some people say derivatives are part of securities i don't particularly agree because securities is negotiable transferable financial instrument so if you think about derivatives there's four main kinds of derivatives swaps are definitely not securities options can be if they are listed if you have listed options then you can buy and sell them but if they're otc they're not negotiable and tradable okay then you have forwards so forwards are not securities there are agreements to buy or sell something in the future and then you have futures futures are basically forwards but they're exchanged specific contracts so because the futures are listed and traded on exchange they are effectively securities okay that clear yeah i get it thanks okay good good any other questions uh i have a question that is uh not quite related to the course materials because uh actually i am new to this course and i just enter it using another account because i cannot enter this zoom meeting with my usd account where should i seek help for this sorry i didn't understand your question that means i just cannot enter this meeting with my usd account oh okay email benson oh okay okay for technical suffrage i don't i don't really he knows way more than i do okay if you have technical difficulties with access to our systems please email benson you have his email right uh can i find it on canvas it's on the syllabus okay okay oh thank you all right okay anything else all right if not now have a lovely weekend and i see you on monday

good afternoon hello hello everybody can you see the slides yeah good you can hear me clearly okay wonderful okay couple of minutes to go laughs i think let's see what's the weather like nice weather generally bullish there is a strong correlation in traders minds between the weather and their attitude rule as experienced in the trading floor in london all right okay how many people do that oh only about half of the participants have signed in gotta open the other one okay all right well it's 4 30 on my computer clock so let's get this started i so remember last time we talked about direct search where buyer and seller meet each other and trade with each other then we talked about brokers so we had if i remember correctly our friend roman was the broker and was basically connecting parties and charging a fee for the service and then we had dealers and i think it was jenga who was our dealer and jiang day was basically buying and selling securities and hoping to make some money on the spread which is the difference between the price at which it sold and the price at which we bought and we identified the fact that uh chang day as a dealer takes on more risk than roman as a broker because gen day takes market risk and market risk is the risk that the price of the security will move in a direction which uh is not good for you right and there is another way to put buyers and sellers together and that is to put all the buyers and the sellers in one place and to hold an auction so can you think of some examples in real life outside finance of auction market you can raise your hand or type in ebay so the b is very very good all right fish market yeah and some fish markets uh are actually using options so you have many many examples in real life where you have uh auctions so the idea is to get everybody together and there will be something that is up for trading and then people will you know uh put in uh bids and the auction mechanism will determine the price so you have different types of auction mechanisms that can be used in financial markets generally we use the discriminatory price auction which is that the highest price wins and then depending on what is being sold you fill in the offer until you have no more supply left or what is called the dutch auction mechanism which is an equilibrium of supply and demand so the price is set at the equilibrium this is the mechanism that is used in auctions of u.s government securities i'll explain more in a minute all right so four different searches why is that important because the resulting price may not be the same depending on which market structure we are using so as i mentioned in auction market the price is determined by the auction mechanism that we use so if you are using the dutch auction mechanism the price that is set will be the equilibrium point between supply and demand if on the other hand you use the discriminatory price option which for example is used in hong kong for hong kong exchange fund securities then we fill in from the highest price down until we run out of supply okay so you will have different prices effectively now if you are in a broken market remember roman doesn't buy and sell uh securities he just connects the two buyers so the buyer and the seller so in a market like that the price is directly a function of supply and demand however when we talk about jiang day and dealers there are more variables than just supply and demand why because gender is buying and selling securities in that process he puts on what we call a position that is he has some inventory okay so let's imagine for a minute that it was i think if i recall correctly pacqui and visitrai who were our buyers and sellers now let's imagine that they were trying to buy and sell apple shares from each other and uh zhengdae is our apple dealer now imagine jane day sitting on a big position of apple shares okay so he's already bought quite a lot of apple shares and he's a little bit worried he's heard that the latest iphone has some trouble and so he's quite bearish right so he's got quite a lot of apple shares and he's kind of bearish on the trade and then of course he's got uh fizzy child who is interested in selling some shares right so let's think about how chiang dai is going to price the shares compare let's say with uh songhaq and songhak is also an apple trader but he doesn't have many shares and he's more positive on apple well they quote the same price no of course not right because they might want to get rid of some of his own position so he doesn't want to add to his position so he'll quote a price that will be not so attractive for visitor so when you look at prices set by dealers you may have as many different prices as you have dealers because it's not just supply and demand but it's also what is their existing position and what is their view of the market right so if my trader is bullish he will quote more aggressive prices than if the trader is bearish bullish means very positive on the market bearish means not very optimistic about the market all right so that's why with the same information you may have very different price determinations depending on the type of search that you are using what kind of market organization may end up resulting in very different price results all right any questions on that now we're going to move on to talking about exchanges and over-the-counter so in the world there are many exchanges some of them operate as dealer markets some of them are auction markets some of them have both so when you're looking at trading on an exchange it's very important to look at the small print how does it work the types of orders you can put in how those orders will be executed who are the players how does it all work okay so every exchange have their own set of rules and if you don't look at the rules before you actively engage in trading you may end up with some pretty nasty surprises okay right so now we're going to compare and contrast exchanges and over the counter so over the counter is o t c that's the letters o t c so what are exchanges this is a centralized location all right so trying to put all the buyers and sellers together in one place so in the old days it was a physical place like the fish market they were typically called bruce or borsa and they were a building generally around one where people would congregate to buy and sell from each other well nowadays it's mostly an electronic location an electronic platform now two main types but there's also commodity exchanges and other kinds of exchanges but in our class we're going to talk mostly about stock exchanges and derivatives exchanges and in terms of market structure they can be auction markets or dealer markets oboes by contrast otc is not localized it's very diffuse it's generally dealer markets and there are many examples including the bond market foreign exchange market etc okay now one of the challenges is now that we've moved to digital everything and electronic it's kind of hard to distinguish between exchanges and otc exchanges in the old days was physical so you know exactly what you were dealing with um nowadays it's a little bit more uh difficult to distinguish all right so let's play a little game these are four asian securities exchanges and these pictures are a little bit old but let's see if you can identify them japan is number one uh no two is hong kong yes japan is for indeed very good so you've identified number two number four for singapore no shanghai is number one very good okay three nope it's not shenzhen three is singapore all right so number one is shanghai number two is hong kong was hong kong number three why singapore number four is tokyo okay now eliminate picture number three because it's completely outdated and i unfortunately don't have a more recent picture but what do you see on those pictures what do you see on these photos you see a sticker hand raised well that's in singapore but yeah computers a lot of computers right so the reality though is that today you see nothing okay actually the hong kong stock exchange floor has closed down has been demolished and now there is a museum in its place uh and now all of these exchanges uh shanghai hong kong singapore and tokyo are basically just a place to take a photograph there's no more people and the computers are actually not even there anymore okay so these places have basically gone what has happened okay before i explain what has been going on i need to clarify a few terms because there's a lot of misunderstanding when we talk about securities exchanges we talk about two different things first we talk about listing listing a security on an exchange is the process by which the firm that issues the securities will meet the requirement of the exchange so that the securities can be shown on the list of the exchange to do that you need to meet the specific rules and requirements of that particular exchange i told you before you do anything with an exchange you better read the rules okay and those rules can change for example hong kong exchange has changed the listing rules to accommodate dual class shares okay in the old days you could only list shares in hong kong if there was one share one vote no more now we can list if we have different classes of share so the rules have changed why do companies want their securities listed on an exchange that is because many investors can only buy listed securities okay many investors cannot buy securities that are not listed on a recognized stock exchange so by listing your securities you're getting a stamp of approval which means that your securities can now be bought and traded eventually in the market the second thing is trading now trading relies on liquidity so securities that are listed on an exchange are not necessarily traded on the exchange and in fact in the bond market most bonds are actually listed on a particular exchange very often actually luxembourg but are not traded on the exchange they are traded over the counter okay there are two different things say you need to be very clear listing is one thing trading is another so if you have securities that are listed on the exchange but there is very little liquidity those securities will not trade because for security to be traded there has to be enough supply and demand in other words liquidity okay now there are some financial instruments that only trade on exchanges and that is futures the futures is one of four big types of derivatives futures are exchange specific financial instruments and a future is basically the same thing as a forward you are buying the right to buy or sell a certain thing at a certain price at a certain date futures contracts are exchange specific okay they don't trade ogc forwards trade ogc but not futures options can be either listed or otc all right okay you're clear on that okay so there are many more who can regulate over-the-counter if it is not localized in one place that is a very good question okay so it also depends on what financial instrument you are using okay because the financial instrument is issued by somebody okay yes forwards do trade otc okay so it will depend on the financial instrument and who are the players because the players are localized somewhere okay any other questions okay so remember that okay there are financial instruments that trade over the counter there are financial instruments that trade only on exchange and there are some that are on both right okay now pay attention because i'm going to tell you the story basically of evolution of exchanges all right so there are lots of important things to know about exchanges and market organization the first thing is that over the last few decades we have seen the advent of electronic trading so clearly electronic trading needs computers and computers are a fairly recent thing not in your life but in mine and so over time we have seen the development of electronic trading and that has had a very profound impact on exchanges because remember exchanges used to be physical places where people would get together and would trade with each other okay and with computers you don't need to be in a physical space anymore so let me share with you a couple of things that i have yeah okay so this one is basically about one of the last few trading floors that is about to close down and this is the london metal exchange which is a commodity exchange based in london but now owned by the hong kong exchange and they are closing down that trading pit which is called the ring and it's a big story because it's it was one of the few trading floors that still existed so what you should know is that around the world there are now very very very few active trading floors uh the ring was one of the last ones in commodities uh but that knot was that was not always the case and i have a little movie to show you if i can manage to go away if i can manage to get it bear with me a second i what is it ah here we go the things i do for you okay so why are you doing this to me okay you guys are going and where's my other one no okay let's see if it's going to work so this is a scene from trading places trading places i don't know if you can see it it's a movie okay um back in the 80s and it's all about bad guys doing wrong stuff on the trading group so let me see if we can get it [Music] last bastion rolling pure capitalism left on earth here in new york they trade everything gold silver platinum heating oil propane cocoa and sugar and of course frozen concentrated orange juice now the people on the phones are taking orders from brokerage houses all over the world runners then hand those orders to the traders in the pits they're trading cotton over there that's the silver pin or the dukes trader is going to be buying like crazy right from the opening and we wait until he drives a price up right i can't wait to see his face when they broadcast that genuine crop report oj training opens at nine let's go kick them back let's go [Music] oh hey the dukes are trying to corner the market they know something i can feel it let's get in on it 200 take them [Applause] 200 200. not yet almost 142 anyway it's a great movie i highly encourage you to uh watch it uh it's a great story actually it's kind of funny because things are always happening all over again and it's a story of insider trading cornering trying to corner the market and what bad guys getting what they deserve in terms of happiness so uh let's get back to my story so open outcry which is what you saw in the floor this is what i was used to when i was your age and starting in the financial markets so in order to buy and sell on the trading floor as you can see and here there was a terrible noise lots of people very very hard to exchange information so traders on the floor developed a system of hand signals so you can google up and see the vocabulary of hand signals but to make it very short this is cell and this is by and there are positions of hands that mean different things depending on how far you are from your face how close you are on your face how you position your hand around your face so this was designed to make communication possible around very very noisy trading floors open outcry has virtually disappeared uh basically if you google trading floor today uh pretty much the only one that comes up on google is the new york stock exchange trading floor that still has a small um a few floor traders but the number is only a fraction of what it used to be now i also need to explain what has happened in terms of corporate components of exchanges in the old days exchanges were mutual organizations so remember we talked about mutual organizations before and you can see the world mutual here okay so what does it mean it means that in the old days people or organization i should say who were trading on the exchange that is the customers were also the owners so in order to trade on an exchange you needed to have a seat on the exchange so exchanges were mutual organization which as we discussed before means that the management of the exchange is working for the customers because the customers are the shareholders right over time like a lot of other organizations exchanges have de-mutualized which means they have changed corporate structure and most of them nowadays are publicly listed organizations so if you take the case of hong kong exchange okay in the old days it was the hong kong stock exchange and crumbs had sit on the stock exchange and then the hong kong stock exchange listed on its own exchange so it is now a publicly listed organization so why is that important well as management now has to focus on shareholders rather than customers as managements are wanting to do they are going to want to grow the business right because management in western capitalism models until fairly recently was very focused on creating shareholder value now how do we create shareholder value think about it in really simple terms how does management generally for any kind of business create value for shareholders make profit right increase the share value but how do we increase the share value so making profit jasper is very good so you want to be profitable roman says more sales okay so how do we increase sales growing the company very good how do we increase sales what are two ways we can increase sales actually if you think about a business marketing spread good rules lower the price lower the price that means you know your profitability might decrease okay cutting cost is not a good idea okay if you cut costs it's going to work for a very short time and then you'll cut too much and then the company will die so growing the company growing revenues and profits is generally what management wants to do now how do we do that so we sell new products so that's one dimension okay new products to our existing customers what's the other dimension enter new markets right so finding new customers right so organically two ways you can grow by finding more customers for your products or selling new products to your existing customers and ideally you want to do both what other things could you do don't talk about cutting costs okay so getting more efficient is good cutting cost is not a very good strategy okay what else could we do expand the scale of the company which we talked about post customers oh man naughty boy all right find new market but how so we've all acquisitioned thank you typhoid acquisition so this is external growth okay so we can grow organically by adding customers or adding products or both or we can grow externally through acquisitions mergers partnerships etc right in very simple terms all right this is not a management class but in simple terms when you want to grow your business this is basically what you can do now think about this and put yourself in the shoes of the management of hong kong exchange hong kong stock exchange okay shiraz not a good idea okay not a good idea we don't want to artificially increase but we are not we are all very good people in this class okay we are all good people we don't commit fraud we don't manipulate we don't have this kind of thing huh not in my class not good okay now let's get back to put yourself in the shoes of the ceo of hong kong stock exchange now that is publicly listed you are tasked with growing the company so how do you grow the business my other exchanges start one in developing countries right so what did i just mention when we were talking about the lme i told you it belongs to hong kong exchange right so here's an example where hong kong exchange went and bought another exchange somewhere else in this case the lme and this is buys them in entry into another market cooperation with other exchanges very good naying can you give me an example in the case of hong kong exchange come on hong kong people you should know that okay cooperate yes yes yes what do we call it the shanghai [Music] and shenzhen what's the name yeah almost there northbound tech bay there's a southbound too oh not fair zheng day i can't read that yes yeah time very good the start connect okay stock connect allows hong kong exchange to expand by entering into a partnership with the shanghai stock exchange and the shanghai stock exchange which allows customer investors in hong kong to invest in the mainland and investors in the mainland to invest in hong kong so it's a big new market so yes there was an offer by the hong kong exchange to buy the london stock exchange and it was blocked and in fact the london stock exchange were not very interested and didn't like the idea very much okay so these are external growth okay what about organic growth how can an exchange like the hong kong exchange grow organically growing retail investors institutional investors new products so hong kong people what kind of new products has hong kong stock exchange hong kong exchanges introduced in the last few years very good attract more companies to list in hong kong cbbc what do you mean bc bbc so what new products i haven't seen the sparks in hong kong yet maybe you did weeds yeah this has been there for a while etfs very good very good yeah ls ex change link securities i haven't seen those okay xiaomi is a company so getting new companies to list in hong kong big growth introducing new products so this is more customers for our product new products include some of the things you have suggested but also renminbi denominated products anybody derivatives so remember in the old days well no you can't remember you're too young but in the old days there was hong kong stock exchange and hong kong futures exchange so you had a stock exchange in the derivatives exchange they emerged okay so that was the first stage of expansion hong kong exchange was the result of that merger okay so as you follow the history of hong kong exchanges you will see the consequences of all these things so last year they closed last year the year before they closed the floor it doesn't exist anymore okay it was very sad a lot of people were very sad but it doesn't exist anymore right so now you've got these exchanges are publicly listed organization with the management looking to ways to grow the business to make the shareholders happy but what does it mean for the investors what does it mean for the people trading on the exchange the customers what's the situation in hong kong how many exchanges do we have how many exchanges are there in hong kong there's only one okay there's only one so it's a monopoly so you know imagine your goldman sachs morgan stanley what does it mean if you have a monopoly trading apps is not an exchange it's a way to put trades to your broker who will eventually put them to the exchange that means no competition okay that means no competition which means also that they can charge you more right so as a customer you're not so happy about this evolution right yeah people have to use you no matter what a market power so what can you do well here we go we create our own we create our own private exchange we can internalize our orders we can create dark books and all of these things have been happening not so much in hong kong which is a small market but definitely in the us okay so makes sense so far yeah right so now you have double private exchanges so now who starts getting a little bit worried large exchanges well yes there's more competition but who is getting worried yeah so of course the incumbents are worried but who is more worried because now you have private exchanges dark pools which means that you trading with your counterparties outside of the exchange oh yes very good here on antarctica the regulators now they don't know what's going on because exchange is going to be very regulated but private exchanges and dog pools not so much so regulators start getting worried that they do not have information on what's going on over there right so they start getting a little bit worried and this worry is compounded by the emergence of new actors which are the high frequency traders okay so high frequency traders are firms that use extremely sophisticated technology to send a lot of orders small orders very quickly very very very fast and react very very fast to price movements so it's massive technology expenditure and a huge amount of orders and it's driven by i'll go algorithms not human traders but algorithms that react to certain indicators okay so high frequency traders have been uh cast as villains in some cases and good people in some other cases they do add a lot of liquidity to the market but they also add a lot of fragility because algos can react to in a very weird manner sometimes uh and for example there was uh the flash crash was caused by uh high frequency traders so the combination of these two things plus the global financial crisis and you have regulatory concerns so one of the things that regulators like about exchanges is information transparency and also the existence of clearing houses so clearing houses have become prominent in the news because of the gamestop story okay so what you need to know is when you trade on exchange and let's say visit chai and parkway uh buyers and sellers of shares they don't actually trade with each other they will trade with the exchange and more specifically in terms of the plumbing the trades will go through the clearing house of the exchange so that fijichai and pathway don't take each other's risk rather the clearing house ultimately takes the risk but since the clearing house does not want to take too much risk they require parties trading on the exchange to have enough money on the account to cover any price risk okay so this is why you might get margin calls all right so every day the stock exchange clearing house will look at the market value in the account and if there's not enough money they will call you to ask you to put more money in the account which is what happened to robinhood okay so this mechanism with clearinghouse is working pretty well and because it's been working pretty well and because exchanges bring so much transparency regulators like that system and they pushed after the global financial crisis to bring many deals that were done over the counter on exchanges the main reason was to get information why because the derivatives market was the source of the global financial crisis which firm collapsed during the global financial crisis and triggered lots of stuff very good lemon brothers okay why was this so critical what was lehman brothers involved in which kind of financial products cdos yeah cdos and not so much actually not so much one of the biggest problems with lehman was derivatives okay and the problem was that when lemon collapsed all the parties they were trading with were left with nothing so the collapse of women because they were involved in so many derivatives trade has a huge systemic impact and because it was derivatives which were mostly over the counter the regulators had no idea so they let lehman fail and that failure then treated massive failure in derivatives because of that regulators have pushed since the global financial crisis to move over the counter trades to exchanges and particularly derivatives so two main reasons one for information two for the counterparty risk and i'll explain more about counterparty later okay for the moment i want you to understand the logic of the evolution of exchanges and otc why the regulators got worried and what are some of the things that are happening today so of course there is a next point after this because it doesn't stop here as you moving more transactions to exchanges who becomes more important just explain the mechanism so now which is very very important in all this the clearing house very good okay so the clearing house has become absolutely critical who owns the clearing house they're not owned by the government the private sector they are for-profit so you have a lot of questions now about clearing houses which have become very critical so are they systemically important they are private institutions who owns the data because all of this creates a lot of data right it belongs to the exchange in the clearinghouse not to the government okay so now you have all kinds of issues about who controls the data what can they do with it how much can they charge for it all right so you can see how every step can then trigger very significant consequences so we're by no means at the end of the saga so let me show you first example and this is not even finished because it's going on but this shows you how mergers and acquisitions have concentrated uh the industry of exchanges and you can see this ends in 2013 i wish i had a slide that goes further because it gets even more narrow and for example here we have the ice okay so where they have the merger with ice and nyse but there's been more more mergers since then and you can see the uh ice nyse uh the first cross-border merger was you were next uh you are next and then the nysc or next and then the big merger with ice so you can see massive concentration now you understand why the private sector wanted to have private exchanges and dark pools all right benson are you with us yes all right we're going to have iprs to see how much you have retained let's roll benson okay okay the first question is futures are traded on exchanges or otc so okay so very good so futures are only traded on exchange next question foreign exchange fx is traded on exchange or otc foreign very good indeed foreign exchange is traded on over the market very good okay so let me reclaim the share okay and here and here we go all right good welcome back okay all right so you got all the responses correct this is very good so foreign exchange is otc and futures are on exchange so remember that futures are exchange specific contracts okay all right so we're going to move on to another dimension another classification of financial markets which is along geographical lines so again this is terminology that is used in financial markets so if you work in investment banks and stuff like that you need to be familiar with it okay all right so we're going to talk about domestic foreign and euro transactions so you need to pay attention because this is complicated and if you don't pay attention you will get it wrong and you don't want to get it wrong because it will be in the question and in the exam all right so you have to go step by step and you have to follow the step in the correct order otherwise you will get it wrong so when we look at securities issues and particularly for debt but also for equity we to decide if it's security is a domestic foreign or euro issue we have to check three things first what currency is the security issued in so is it us dollar is it euros is it hong kong dollar singapore dollar indian rupee blah blah blah what currency first thing second where is the security placed so where are the investors are there in the country of the currency or not and last is where is the issuer is the issuer in the same country as the currency or not all right so when everything is in the same country we say it's a domestic issue so you take a currency say the hong kong dollar it's in hong kong the investors are in hong kong the issuer is a hong kong company it's a domestic issue so you tick all the boxes if everything is in the same country it's easy we call it domestic okay so far so good simple it gets more complicated than that all right next step you have the currency and its country the investors are in the same country but the issuer is not we say it's a foreign issue for example hong kong land issues u.s dollar bond to u.s investors the currency is the us dollar it's in the united states the investors are in the united states but the issuer is in hong kong so the issuer is outside the country so we call this a foreign issue okay now it gets really complicated now we're going to take the currency out of its country so we have a currency but it's not being used in its own country it's being used outside whenever a currency is not in its own currency not in its own country in financial market we call that a euro currency it has nothing to do with the euro okay so it's confusing why because euro currencies euro market euro issues existed before the euro and it all started with u.s dollars being used outside the united states okay so the euro dollar market has nothing to do with euros it's dollars outside the united states so remember the three checkpoints what is the currency where is it being placed if it's outside its own country then we'll have a euro issue okay example hong kong land issues a euro-denominated bond to hong kong investors the currency is the euro but it's used outside the euro zone so it's a euro euro hong kong land issues us dollar denominated bonds to eu investors its u.s dollars outside the united states so it's a uh euro issue okay you think you have understood well let's complicate things a little bit more so you have these three dimensions which is what we use in financial markets then we look at another way of classifying which is the one used by the bank for international settlements so the bis the bis is one of these supranational organizations remember the term supranational which was set up as one of the bretton woods institutions and it's a very important organization one of their function is to collect a lot of information about financial markets so the bis gets information about securities issues and then classifies them in two major categories okay so you have domestic and international domestic okay and international so for the bis they don't really make a distinction between foreign and europe for them it's all international the domestic is the same but the bis puts euro and international and foreign issues under international issues and finally you have a third classification and this one is more of an academic classification which looks at internal and external from the point of view of the market where you're placing the issue so from that perspective internal means both domestic and foreign because you look at where you're placing the issue external is basically europe you think you understand all right let's try it with iprs okay so this first question is hong kong land which is a hong kong company issues a bond in hong kong dollars placed to hong kong investors what is this this is domestic euro performing wow very good okay wow that was easy now next thing the same issue how will the bis record it domestic or international you oh oh boy how about your boy what are you doing okay so it's a hong kong land issuing a hong kong dollar bond hong kong investors classified domestic issue and the bis will record it as a domestic issue okay our last question the same issue would we classify it as internal or external oops uh oh what's going on benson benson you're sharing your email all right so it's an internal transaction very good okay so let me reclaim the sharing okay there we go all right so this one was an easy one because it was domestic now let me make it more complicated what if what if hong kong land issues in us dollars oh look at that very good all right the first answer would be a euro issue okay because it's us dollar outside of the united states from the bis what would it be that's right it will be international and from an academics perspective would it be internal or external external very good okay now let's make it slightly different okay our bodies hong kong land is selling u.s dollar bond to u.s investors very good it will be a foreign issue okay now from the bis standpoint what would it be really good okay we have international what about the academic distinction it would be internal okay all right very good i guess you've got in that one very good okay there will be similar questions in there by the prs questions is the kind of questions you're going to get getting in quizzes and in exam all right the final classification we are going to discuss is private and public okay so when an issuer places an issue only with sophisticated investors this is private markets if they place securities with the general public with individual retail investors we call that public market okay now i have to warn you that in market problems we use the term retail when we talk about placing issues to retail investors to the little guys in academic terms we call that a public issue okay so we're going to use the academic terms so why is there a distinction why do you think we distinguish public and private issues why do you think we distinguish them investment size not necessarily you can have very large private issues the number of investors in some cases investment qualifications regulations yes regulations and somehow is correct to point out that we want to protect small investors so regulators are going to watch very carefully whenever you want to sell financial products to retail investors they want to make sure that the retail small investors widows and orphans are adequately protected and one of the major ways is by making sure that retail investors have all the information that they need so whenever you're talking about public issues there will be disclosure requirements and registration requirements so those depend on the market where you operate for example in some markets the regulators will want to avoid too many issues coming to the market at the same time so they will have what is called the curing system okay so rule of thumb no matter which market you're in there will always be more regulation whenever you want to sell things to retail to you and me widows and orphans the underlying assumptions is that institutions and sophisticated investors know what they're doing okay sadly that's not really always the case all right so public issues are targeted at the general public so we also say retail issues yes check him speculatory phone no sorry i i didn't catch what you were saying sorry sorry i just mute myself accidentally sorry okay okay fine all right um so let's we public issues retail are subject to regulatory control typically will be underwritten by investment banks what does it mean we'll explain underwriting later in more detail but basically what it means because you're selling to a very large number of small investors you cannot negotiate the price with all of them so you have to sell at a set price in order to do that an investment bank will step in between the company and the investors will buy the entire issue and then sell it okay that's what is called underwriting which obviously is a risky proposition so the investment bank wants to be compensated for that they will typically require registration or filing so you need to let the regulators know that it is coming and they will ask you to bring documents together which is called prospectus or information memorandum or offering circular just three terms are equivalent which is basically information needed by investors to make that decision and they require the investment banks to carry out what is called due diligence what is due diligence anybody can tell me who can tell me what is due diligence check company's profile research the whole profile detailed examination no it's not a law doing analysis of the company's annual report in a way appraisal research okay make sure it's not a fraud yes check credibility yes so due diligence is the process of verifying the information so the investment banks are responsible to make sure that the document which contains all the information is complete accurate and not misleading in other words the information must be complete so you cannot miss any information so up until the moment where the shares are sold or the bond is placed you verify that all the relevant information is included it must be complete no missing information two it must be accurate so no fraud no misrepresentation third it must not be misleading so you must not put information which can be interpreted in a different way so three standards of care in due diligence complete accurate and not misleading in some countries including the united states and hong kong and now in china the investment banks the sponsors for the issues are legally responsible in other words if one of these three criteria is missing and investors lose money they can sue the investment bank or the sponsor for not doing their job in the due diligence process okay so due diligence is a very important process it's only recently that hong kong has begun hong kong regulators have started holding investment banks responsible but now it's a big issue okay so due diligence is very very important and regulators have started uh coming down pretty hard on uh sponsors and investment banks that don't do their job properly in some countries uh there has been requirement for debt issues uh for the companies to have credit ratings so that was the case in the united yes a circular is the same thing as an offering memorandum is the same thing as a prospectus different terms for the same thing the document that contains all the information um so ratings used to be required if you wanted to do debt issues public debt issues in the united states this is no longer a requirement but rather a recommendation and insulin robin what you want hello hello okay this is funny um so and finally in some countries you may need prior approval from the regulators you might have a queuing system and this is designed to prevent the market being flooded with too many issues at the same time okay so we just exceeded the time by two minutes but this is important to understand all right there is a logic behind it there is a reason behind it because you are targeting small investors and sophisticated investors the regulators want to make sure you have access to the information you need to make your investment decision and they will come down really hard if the arranges of the issue do not provide that information okay so are you free to go i'm hanging around to take any questions that you may have benson you're free to go as well any questions thank you uh professor i do have a question sure go ahead yeah um it's about the demutualization uh when you say that it's a company's um you know customer owned what does that uh really mean because i know that you know like if it's if the shareholders own it like they have like physical shares and stuff like that but customer owns i'm not quite sure well for example if you one of the most common mutual organizations in finance is a mutual fund so as an investor when you invest in a mutual fund you're actually buying shares in the mutual fund so you're an investor and a shareholder and there is we will see then when we talk about mutual funds that mutual funds are organized like companies they have boards shareholder boards and they function like a company and as an investor you are a shareholder okay does that answer your question right okay so uh so customers in this case are investors all right all right all right right okay got it thank you okay you're welcome i see you gem day you had a um question i have a question about mixed mode class um i have read the email about mixed mode class that um the class with a student number below 75 has a probability to open a mixmo class and i wonder if our class is going to no no because i have over 120 students so this is a launch class so this is going to stay online okay thank you you're welcome and sean hack you had a question yeah so i have a question regarding the assignment one that the group project yes we are assigned to the topics and uh my question is the the article that we find should be like a recent one or is there any time limit resemblance no there's no real time limit because if you find an article that's very relevant that is maybe a year or so old but if it's like 20 years old uh it's not like that not too much okay so within reason okay if you find something that is in like the past year or two that's okay but if you start going into and you know it has to be relevant so things change in the markets so you might find an article that was completely relevant three years ago but it's completely irrelevant today okay so the the whole think about why i'm giving you this exercise right it's to force you to look into big issues in terms of what is happening uh today in in today's market okay okay so there's another question with our topic uh our topic is a group five and it's about the derivatives in asia what is the level of development in development uh derivatives markets in asia and what about china or the issues implications yeah and i think i see there are many questions in this one question yeah you can can should we find many articles or just one not no you can pick one what i try to do with the questions is leave them big enough that you can pick one aspect of it you don't have to answer all of them oh okay thank you okay nayenn you had a question uh yeah uh i you have this answer that the article can answer only one aspect or two aspects but not all so um if i found a video that answered only what or two aspect it is okay yes it is yes it is it's sometimes i i give you different angles because sometimes it may not be easy to find just one article that gives an answer so i try to give you different possibilities okay and uh is a personal question so i want to ask how you value tesla how do i work how do you evaluate a better stock tesla how do i value the stock dresser i don't better people than me have tried it's all over the place okay this was your opinion it is quite difficult to evaluate this kind of stuff i'm not even trying okay uh sometimes you still have another question oh no no i i didn't i didn't put my hands down all right no problem no problem okay uh there were a few questions does it mean that in hong kong what does it mean to be a hong kong company because hong kong land is incorporated in bermuda and are you still around is anson still around no but it's oh what a great question it is it's such a great question i will have to answer it is an underwriter is she or still around yeah is an underwriter different than an advisor so i don't know what you mean by an advisor uh i would have to look at the definition of the relevant term in the relevant market okay uh is it legit there see she did not punish robin hood for market manipulation so who's that why saying is why is things still here yeah uh baingani um yes uh there did not find any instance of market manipulation by robin hood itself uh so in my opinion it was very difficult for sec to find a situation of market manipulation in the case of gamestop there are very specific conditions to find for market manipulations and there was not clear evidence of market manipulation even though they grilled uh rowing kitten for wearing kitty for quite a long time but there was no evidence there was actually market manipulation uh rising protect the retail investor is kind of like yeah it is vague um it's trying to convey the idea that the pro the concept behind it is to make sure that retail investors are not being taken advantage of through information asymmetry and we'll talk about this more when we discuss regulations any more questions oh nain you still have another question the price of gme grows higher the more investors suffer when it falls depends on the investor then they apparently knew what they were doing up to you what if the short quiz really happens it did okay anyway if you're interested in gamestop i don't know if you attended the webinar we did a webinar discussion on it i'll post the link for you uh we had a webinar discussion with professor abirup and professor utval moderated by my uh former student sherry so i'll post the link if you were not able to attend have a look at it okay all right goodbye people see you friday

[Music] okay it's 12 o'clock and it's time for our class together good afternoon ladies and gentlemen welcome back any questions how many questions in the quiz i don't know yet but you can do them no worries good afternoon good afternoon everybody okay so let's uh get finished on the on the classifications we talked about public and private issues and we talked about the concept behind it which is that whenever you want to sell financial products to the general public to you and me widows and orphans regulators want to make sure that investors have the information they need to make an informed decision okay so that typically puts higher standards of disclosure and higher standards of care on the underwriters the sponsors of the issue and in some cases this higher standard of care comes with legal liabilities so we've talked about all this by contrast if you are only targeted specific types of investors such as sophisticated investors accredited investors qualified institutional buyers then the standard of care will will be lower because the assumption is that these types of investors know what they're doing okay so they are deemed sophisticated and this level of sophistication may be on two dimensions one is what these people know so if you have a phd in finance regulators will assume you know about finance right so you're sophisticated because of knowledge sometimes the other angle is you're sophisticated because this is what you do for living this is what you do as a job you're managing other people's money then you're supposed to know what you're doing okay so you're sophisticated because it's your profession it's your job all right so because you know what you're doing the regulators are not so worried about you and there are standards of care the standards of disclosure will be lower than when you're dealing with the general public so um when you selling only to sophisticated investors qualified institutional buyers there's a smaller number of investors because typically they manage quite a lot of money so generally in a private issue there is no need for underwriting there's no need for an investment bank to step in buy the whole issue and then sell it okay it can be a negotiated process all right so okay yes yes go ahead talk to me okay and share the screen first okay now okay people go on to iprs access code 57537 okay so in this situation hong kong land which is a hong kong company issues a bond to hong kong investors the placing banks are targeting individual investors that means people like you and me in hong kong is this a public or private issue uh so okay so most of you got the correct answer which is a public issue because we're talking to people like you and me retail investors in hong kong okay so it's a public issue second question the mtrc places a u.s dollar bond with sophisticated investors in the u.s under rule 144a this is a public issue or private issue so so okay very very good this is indeed a private issue because we are targeting certain kinds of very sophisticated investors all right oh what am i doing and so no i want to share okay here we go okay good so with that basically any questions on that all right so the first one was public and the second one was private all right so the concept behind it is very simple so that when you're targeting the general public retail individual investors there is an assumption that they're not very sophisticated and that they need very detailed information for sophisticated investors the regulators are not so concerned caution this depends on the market where you operate so the rules are going to be different in each market so you need to really look at the rules what is defined as a sophisticated or accredited investors and in some markets there may be no differentiation so the regulators might decide that disclosure has to be very comprehensive irrespective of the investors that you're targeting okay any questions on this part of the course no okay this has changed all right i know i see the chat what's going on with my system it's so weird hello okay give me a second i'm having some ah here we go issues with this come back here all right okay now we got the message here and then i want to see my participants okay okay so how's this network if you don't have any questions then we're going to move to the next part of the course which is going to be our very first quantitative section okay and in this part we're going to be talking about interest rates and foundation theories all right okay so this is the map of the course we finished the long overview we're moving into foundations of interest we're going to talk about basics and discounted cash flow calculation so this is very very basic okay you will learn more when you take finance courses later all right so what are we going to talk about we're going to talk about time value of money present and future value discounted cash flow calculations and some basic formulas all right before we start a lot of students ask me how you can find out about finance besides the textbook so there's a lot of ways you can do that and one of the ways is by watching movies so i have put here a little selection of movies that i like very much okay i we had a look at uh trading places last week i played you a scene from this movie this one is about trading commodity futures in particular frozen orange juice and it's a very interesting insights in that world you're probably familiar with wall street so wall street is very significant in the 80s about corporate finance insider trading and all that kind of thing dealers is also from the 80s and it's about the bond market back in those days barbarians at the gate is the movie uh based on the true uh story of arjean nabisco's uh hostile takeover by kkr so kkr is a hedge fund actually leveraged buyout firm founded by colbert kravitz and roberts who kiko is active in asia as well and it's the film uh based on the book of the actual event which was one of the largest leveraged buy out ever rogue trader is the story of nick lissons it's a true story it's a story of the guy who basically uh caused the collapse of bering's bank in in the 90s uh so that was a rogue trader who put on positions that blew up and and caused the collapse of bearings other people's money is about vulture investing so this is the kind of private equity firms that swoop in uh when companies are in distress buy them out uh clean them up and eventually to hopefully turn them around it's a very interesting movie a lot of the very same arguments in the two key scenes in the movie are very very much still the case today working girl is a funny movie about corporate finance about advisory m a and boiler room is an excellent movie about very aggressive sales technique so this takes place in security firm that pedal penny stocks and the most interesting part of the movie is listening to the sales technique that they employ and it makes you realize how difficult it is to resist very good salespeople okay so this came way before the wolf of wall street is a much better movie in my opinion uh but the theme is very much the same one uh then you can also so this is a small selection there are many many others that you can watch that show you aspects of the financial markets uh you can also read books uh and this is uh but a small selection of the huge number of books that are available on finance and financial markets those of you who plan to go into investment banking should absolutely read liars poker tonight spoker is the book that made michael lewis famous and it it basically talks about his days in investment banking in the same line you have fiasco which was written by frank partner and also gives uh so that gives an eye on his time at morgan stanley so michael lewis was was with solomon and uh frank portnoy was with morgan stanley uh then you have a couple a monkey business also is is in about investment banking um fool's gold is a book about the global financial crisis as is michael lewis is the big short so michael lewis the same guy so both of these books are about the global financial crisis in 2008 seen from two very different points of view when genius fail is the story of long-term capital management which was an arbitrage based hedge fund that collapsed and had a number of nobel prize winners on the team that didn't stop them from losing a huge amount of money barbarians at the gate is a book about that the movie was based on um hedgehogging is about hedge fund so it's written by a very very well-known investor in wall street called barton biggs the interesting thing about hedgehogging is it's not just a success stories but also talking about failures then you have the poker face of wall street so one of the interesting things about the jungle of wall street is there are a number of people who play poker so i don't know how many of you actually play poker but this is something that is pretty common in wall street uh and has some very interesting applications and last but not least you have traders guns and money it's about derivatives and it's written by a guy who was a derivatives trader in asia before the financial crisis the asian financial crisis so it has a lot of anecdotes about the derivative derivatives market in asia there are tons of other books that you can read on different parts of the industry and i also want to mention uh a few newsletters that you can uh read and i highly recommend uh this one is matt levin so matt levin is a columnist on bloomberg you can sign up for his newsletter for free he was an investment banker at goldman sachs he was a derivative structure and he's also a lawyer and he writes about events in the market in a very cynical and very funny way but also in terms that you can actually understand even if you're not in that market so i strongly strongly recommend his column another one that i recommend is mark rubinstein he writes net interest and he writes a lot about banking fintech and things like that so uh it's very interesting to dive into his columns if you have time uh more classically john arthur's is uh is actually an economist so he takes a more macro view of things which are going on so all these newsletters you can sign up for free uh there are also tv series that i highly recommend and uh one of those is billions if you haven't heard about it billions is a very funny uh very punchy series about a hedge fund guy called bobby axelrod who runs a company called axe capital which is a very aggressive somewhat shady um [Music] uh hedge fund it's pretty much modeled on sac capital uh and the personnel of bobby axelrod kind of like steve cohen but it's uh it's full of interesting tidbits about hedge funds about insider trading about the fight between the department of justice the very dirty fight between the department of justice and and the hedge fund um other fund series to watch if you haven't um and it's more on more about um tech startups uh and uh silicon valley and venture capital and all that is uh it's really funny uh it's extremely well documented very very well documented uh so if you're interested in tech startups and the whole world of venture capital and all that i highly recommend silicon valley it's it's hilarious okay so there's a lot of sources you can look at to um you know pick up information about financial markets and uh if you have any specific areas that you want to hear about i will be happy to share some sources with you okay so these are the now very serious newsletters on corporate finance for those of you who really interested in that uh i recommend damodaran damodaran professor damodaran is in professor at nyu student who's known as the king of graduation so he writes about valuation and there is another corporate finance website called verney men that's named after professor verneyman who passed away about a decade ago all right so now you have all the tools you need to learn more about finance beyond the classroom and the textbook okay so now let's dig into the agenda for today so we're going to start with the time value of money and uh moving on okay so we're going to be talking about interest that you should know that throughout history way before the 20th century uh money lenders and charging of interest was not a very good thing in fact money lenders were very very unpopular and under christianity charging of interest called usury was actually illegal okay and the only people who could do that were the jews today there are many parts of the world that apply islamic law called sharia and under sharia you cannot charge interest so the charging of interest is called reba and reba is not allowed under islamic law so when you do islamic finance you have to structure products in a way that you do not charge interest so mostly it's done through profit sharing and yet islamic finance is a big market in fact you'd be surprised to know that the hong kong scr government has actually issued islamic bonds in compliance with sharia law so the hong kong ser government has been an issuer in the islamic finance market okay sorry about that forgot to put it on silent bad girl okay all right now before we actually start with calculations um there are things you need to be very careful with when we talk about interest and interest rates in this section we're going to talk about annual or yearly interest rates in the market we use the terminology pa that stands for per annum which is latin for every year okay so yearly or annual interest rate we say pa okay and this is what we generally use but we will see that sometimes you will have monthly quarterly or semi-annual interest rates so you will have to adapt the rates depending on the periodicity second point financial institutions are generally required to indicate the rates they charge on an apr basis annual percentage rate basis the reason for that is to allow consumers particularly retail consumers to compare prices of financial products and let me give you another example i don't think i did that before did i okay i will show you a very interesting platform i don't think i did before just in case i do it in england english platform so this platform is called money hero and what it does is allow you to compare offers from different banks so you have different things different products personal loans credit cards insurance etc so let me look at personal loans so here is the tax season so we can look at tax loans and what you see here is different products from different banks and they are ranked by apr okay so this is the annual percentage rate so it's effectively what you are paying if you take into consideration all the fees and charges and everything so you will see that they also show you the monthly flat rate and they give you a lot of information as well so if you scroll down so you see like at citibank 1.78 of course conditions apply right but you can see there is a big difference in terms of rates we go down to 16.47 quite massive difference so it's really important when you're looking at financial products that you compare apples to apples because the advertising that the banks do showcase the lowest thing that they can think they can get away with the reason why i'm sensitive to that is about a decade ago i started getting when interest rates were quite low i was getting uh publicity from different banks about tax loan and one of those was like an a4 sheet of paper with a big zero percent in front like 70. zero percent interest and i'm like wow free money but there was a little asterix right so at the bottom of the page in front four so you need a magnifying glass right it disclosed the apr it was something like two percent so i'm like huh how do i go from zero percent interest to two percent apr and of course the answer is fees charges blah blah blah so open account opening fee administrative charge blah blah blah blah blah so you have to be super careful because you have to take everything in consideration and it's very hard for people to do that so governments and regulators have started requiring banks to mention the apr of course they they put it at the bottom so if you don't if you're not paying attention but the little asterisks and the phone four then you don't know what you're missing all right so this is very very important to know that when we're talking with banks we have to talk in ways that we can compare the different products to each other so the apr is a very important tool to compare financial instruments third thing you need to know is the way you calculate interest differs depending on the financial instrument that you use this is very important if you ever work in debt markets in banks be very careful because certain instruments calculate interest in a very different way for example in particular under one year when we're dealing with money market instruments we don't use discounted cash flow calculation we use simple interest i will show you some of those later okay so for the moment be very careful verify what is the definition of interest the definition of interest payment and when is interest paid because that plays a role in the compounding and then effective rates okay good with this warning in mind let's start talking about the time value of money so the whole idea is okay so how can we compare the return on different financial instruments that have different cash flow streams at different times with uh it and in practical terms how and why is the promise to pay x dollar at time 1 more or less valuable than the promise to pay y dollars at time 2. you cannot compare them directly so how do we find a way to compare apples to apples and this is basically discounted cash flow calculations so whenever you're dealing with payments in time the first thing you must do is draw a timeline this is important because one of the pitfalls of dcf is intervals okay when do we start when do we finish this is absolutely critical so there are conventions we use in bcf the timeline looks like this it starts at time zero that is the convention today is time zero the end of the first period in this case i'm using years okay the end of the first period is time one time one is also the beginning of the second period okay so you have the timeline okay and it starts at zero which is today the beginning of the first period one is the end of the first period and the beginning of the second then in the bottom part you put the cash flow that is the money coming in and out okay so you have the cash flows for each time at which money is coming in or out if it's money coming in it's a positive sign if it's money coming out it's a negative sign okay so if i'm investing it's money coming out of my pocket so it's negative if i'm receiving interest or dividends is money coming into my pocket so it's a positive sign okay so this is the convention you should label the time period so that you don't get confused and notice here i'm using years sometimes you'll be using month sometimes it can be quarterly or semi-annually so in order not to get all confused it's important to use timelines okay now the fundamental concept about dcf is the time value of money it is expressed in simple terms as a dollar is worth more today than tomorrow this is the basic idea of the time value of money that underpins a lot of the finance theories so why is it worth more today than the same dollar tomorrow well there are lots of reason but some of the reasons have to do with the preference for consuming today as opposed to consuming tomorrow since generally people prefer to consume today if they are asked to delay the consumption to the future they expect some reward for it okay that's one the second is that in normal markets you can invest the dollar today and then get it back with some return tomorrow okay now this all worked fine and well when interest rates were positive unfortunately in many parts of the world interest rates are negative and by interest rate being negative i don't just mean nominal interest rates i also mean real interest rates so uh unfortunately that has a complete distortion impact on financial markets because financial markets are not designed for negative interest rate market structure is not designed for negative interest rates so unfortunately because a large part of the market nowadays has negative interest rate this has had very very distorting impacts and the markets have had to adapt to this new environment however in the class we are just going to live in a very happy world where everything is hunky-dory interest rates are positive and everything works okay all right so just to illustrate that interest rates uh are not doing terribly well so this is the picture of u.s real interest rates so real interest rate is nominal rates which is the market rate adjusted for inflation okay so what you can see is a trend of declining interest rates real interest rates uh that you have about 17 trillion plus worth of debt instruments with negative interest rates um but interestingly it's not been uh that unusual it's happened before so if you look in the last couple of centuries it's happened before and if you go even further back it also happened before so no matter what economists say this is not a completely unusual phenomena it has happened before but it hasn't generally lasted as long as it has this timeline so i put a little cartoon for you with the the four shares of the fed and what happened with interest rates so it's kind of funny because paul volcker was a very tall guy alan greenspan was not quite a stall ben bernanke was smaller and janet yellen is very very tiny so you can see the progression of interest rates here just for fun okay now i want to type your brain i want to know what you think and it's very much in the news at the moment so i'm going to send you all off into breakout rooms if i can do that benson can i send them oh yeah i can i can do that so where is this saying breakout rooms okay breakout rooms here we go i'm going to put you into 10 breakout rooms okay so i i'm going to give you about three to four minutes to discuss what do you think what do you think will happen to interest rates okay here you go so go into the breakup room okay good good chew han go to the breakout room jang day breakout room not listening you're supposed to go to your breakout rooms so so i think i accidentally came back to the main session hello so mean yes yes yes yeah i think i accidentally came back to the main room okay let me let me join which room were you in i can't remember you don't know i'm sorry hey my my where am i going well anyway i'm going to to close the uh oh okay i'm going to close the room anyway in a minute one sec you're wearing nice okay i think i'm getting more or less everybody back 27 seconds okay so be ready to share your thoughts three two one boom [Music] okay and i'm going to start with the last room for a change so room 10 we had aria warden shiraz safang roman using emmanuel i'm sure you're going to tell me lots of stuff go ahead okay let's start with uh who's put up roman and then chang day so we talked about and we said that um we looked at some trends of u.s interest rates and that they've been going down pretty consistently and we said that that's probably not going to change especially now with like corona like the financial troubles where there's no like there's a lot of risk right now and uh that's why a lot of people don't take loans that's why they have to be so low the interest rates and so we said that probably as long as there's still so much uncertainty they're going to stay low or even go down and then if their economy recovers they might go up or maybe not yeah okay uh thank you roman gender um our group talked about um the fed and the central bank are putting low lower um interest rates um to to to increase the money supply in the market and to encourage uh the commercial banks to borrow more money from more money from this on a fed to lower their interest rates as well and to recover and stimulate the economy due to the pandemic okay uh how do i have um aryan uh your professor our group also was uh i think extending one what roman said uh it it's been going uh low because of the the reducing the yield on the government bonds and so it will continue to go low to encourage growth i think uh in these hard times and i think slowly in in a year or so they'll start picking back up and they'll start increasing the interest rates okay annoying recently the federal um say that they want to increase the interest rate actually but i think that they will remain the interest rate and change because of the epidemic and even if the stock market has become overheated recently but as long as their word um has the effect um now the stock market uh goes down slightly um i think they won't actually take the action they just say it and sometimes as long as they have their effect that they want they will simply say it but not to take the action it's not the first time they do that okay songhaq so i think uh interest rate will move according to what kind of interest we are talking about so like uh some uh credit credit interest rate like corporate bonds are may increase because the because pandemic has caused many default rate rises so the risk of holding these bonds may increase so the interest rate may increase but some government bonds are still will still stay the same because they are these safe assets compared to the corporate bonds okay thank you i'll come to you in a second quote soon i want to give a chance uh so i don't know people been talking uh outside of their room i have uh so we're done with room 10 album nine we have manu sini uh so jasper why don't you start quite soon like you later so our group basically just talked about like how the situation post covet is going to look like and some of our group may say that it's going to be well it's going to turn better because the whole culvert situation will be recovered but in my opinion i do not think so because the productivity level in the u.s is still quite bad as we see there is currently a blizzard going on in the us which is quite damaging to work uh towards the whole productivity scenes and the labors and stuff but as well as the like when we take a look at on the other side like it's the us diplomatic tension with the china's and stuff all of these are still quite unsure and there's so much uncertainty so in my opinion i do not believe that it will change positive and along in the short run it is going to remain low at the level as to say be safe as i think okay cute tone yeah apart from what uh jessica just mentioned i also think that uh because of the current graphic situation like um a lot of us people travel around so like the global aviation industry is having a lower like headcount right now so and also with all the pandemic around the world uh the economic activity will be a lot lower than usual which will cause like us a low interest rate for now but in the long run maybe after the population start to get vaccinated and as the impact of the pandemic diminishes uh the interest rate will eventually get better okay good thank you so much now let's move on to room nine which oh yeah nine no what am i doing no room eight sorry theo [Music] dominic tucked him and catching so which one of you wants to talk okay theo go ahead yeah so our group discussed that um that the interest rate will go down eventually because like the the u.s are printing more dollars and and as a result they the the the dollars are devaluating so i guess as the confidence level is decreasing then interest rate will also decrease [Music] okay thanks to you does anybody else in that room want to share their thought no okay so then we have room seven seven is stu ming support visit thank you yeah um so we thought that because of this current pandemic and recession that the interest rate may have been declining but uh as for the creditors they might actually start to increase the interest rates because uh they might become more risk averse uh due to the current um you know financial kind of crisis at the moment economic recession good point anything else from room seven um uh i do yeah i do i think that uh it will basically going back to the inflation basically right now the fed is actually trying to use quantitative easing to you know generate more money to create more supply than the demand so that is trying to simulate the economy so that the banks could land money more easily to those who are desperately in need so that you know the interest rate below that gives them a very a good um reason to grow their money and after a period like five or several years later the economy eventually recovered and uh you need to low you need to keep the inflation in a very in a low level so the boost update the interest rate to keep it at low as a low level because you know the economy has been recovered at that time period yeah yeah this is a lot of discussion right now taxpayers you know is inflation picking up is it going to pick up and and you know when that happens how quickly will regulators uh get on the case because the classic regulatory reaction you know central bank reaction i should say to rising inflation would be to rise interest rates so we will it's a very very good point um let's see room six we had elliot so min toy wing adrian ed ray and wendy adrian chatlam soy in cover and so who's going to tell me what you guys discussed similar to the groups management people we think that the employment rates will remain known in this period of time and therefore the banks will lower the interest rate in order to attract more people to be involved in economic activities yeah okay good anyone else wants to share from room six um the interest rate is not really going it's not likely to increase in the upcoming future which is promised by the federal reserve in us they will keep the interest rate as low as possible to zero due to the pandemic but i think the after everyone i said most of the people in the u.s have got the fast scene and if they can get rid of the pandemic i think the interest rates that increase back to the normal level okay let's all hope that the vaccines will work and we can get back to a more normal style all right let's go to room five and it's okay if you have some of the same stuff all right weising ansen dhruv manwa yen jun yike yat tang hoi wan zaho calvin george and okay first and then uk okay so we could talk talk about two possibilities the first one is that if the government intervene then the central interest rate will be lowered so the money supply will increase and the nominal interest rate in the market will be kept at a low level so if the government do not intervene then the interest rate will increase because more people are asking for money a lot of unemployment so they need to have more borrowing and less saving and to finance their daily spending so the nominal and the number interest rate in the market will increase if the government does not do anything interesting uh uk um i think even though we started off this year with a record low interest rate um and even though kova is still sort of around i think this year people generally have better expectations about the economy and because of the covet because i mean because of the vaccines and because the number of covert cases has sort of peaked and people are expecting it to decline i think the interest rates may go up a little bit this year and i saw it on the news the other day that the um the us 10-year treasury yield or something has been rising so i don't know too much about that but i just know it's sort of important um so i guess following that trend it will sort of increase as well i am so proud of you for connecting the dots this is nice you've been reading the news look at that oh i am happy i am happy you guys made me happy what can i say oh that is very good so i i'm you know very nice room four we have someone chew hun hoilands you on renee chuck him cherie and jin kai ho yin and wai lun okay see you on go ahead so um just now and they have talked about like uh the bond yield going up i could further like we have discussed it in our room too so uh i want to further elaborate that so as per my understanding like when born you growing up like this provides sort of an arbitrary opportunity like for bands because the insurance is growing like pretty low so they can borrow the money and they can go to invest in the uh government 10-year treasury bill so there is a average opportunity and then so it's likely that for fred is to increase the um interest rate to uh follow the increased rate of the bond you so to avoid any arbitrage okay i i get the arbitrage thing i'm not sure whether the government will intervene to prevent arbitrage but this is a really good point and there's always a lot of discussion about you know the trend of interest rates and the impact on bank's profitability on net interest margin and things like that right so we'll talk about uh bank management later after we've gone through the first um coins period all right let's see room three we had ito schlock sinting timmy jin kwan king aryan you already spoke chu ching wing tsum and katherine so one of you alrighty tom go ahead okay we all agree that the interest rates may keep changing all the time we think about globalization development so we think that countries may have influence with each other by some policy makers okay i didn't get that point eton you talked about globalization globalization yes yes i think maybe because of that countries may have more influence with each other on interest rates okay so you're talking about geopolitical issues having impact on interest rates in different countries yeah yeah okay that's an interesting point all right okay and then caffeine i think low interest rates are some kind of a way for governments to increase the purchasing power community and as a way to stimulate the market um for me i think it takes time so that the interest rates can rebound up so i think uh we can't expect a race uh sooner [Music] okay thanks kathleen and then we have room 2 where we had manchik wing yen win long tongue fight chin leon samson chingye wundser po ching hoy kyu and um in my cyrus of view i think like the pandemic is still dominating and so i think the interest maybe would stay within those um in the coming future because like the economic problem is just appearing i'm doing us for example like the high um low and high unemployment rate so like the personal loan as well as like some emergency needs or likes and landing like the bank need to lend money to the people in this so like and in this kind of landing the interest rate should be loads in order to support people to survive during um the pandemic so i think um due to it and also like the facing is still a mystery if there is effective or not so like i think there are so many um unstable possibilities in the future so i think the federal will not increase the interest rates in the coming future but we means i'm still low okay thanks for sharing and last but not least room one we had chocolate hollis yiphon jung day sun [Music] who's sharing okay quote soon go ahead i i want to analyze in a more economic perspective so a higher interest rate will increase the value of currency so because the harmony will flow into a bank that if our country then providing more higher interest rates so it will make the export less competitive and in a economic uh in the pandemic economic situation so i think the country will want to have increased the level of exports rather than import yeah so i think the interest rate will keep very good uh that's great i really enjoy the sharing so as you know it's interesting for me because you read a lot about analysts expectations and things like that and what you find is there's as many different opinions as analysts it's kind of showing up in uh in this sort of brainstorming discussion that uh overall i think you're already on the side of keeping things low but watching out for the return of inflation the global impact and the currency impact whether the will economies will recover from the pandemic and the pace at which they will do that you highlighted the rules of central banks and governments which is very very important uh and what they say as well as what they do uh we will talk about some of that when we talk about central banking and monetary policy so great job people that was good okay so let's go back to uh the slides all right so we were talking about the time value of money and for the rest of the class we are going over this part of the class we're going to talk about uh posit a word of positive interest rates where things work normally okay so the interest rate is basically the tool that helps us to convert cash across time so we're going to be talking about different variables that we use in discounted cash flow calculation the first is present value so present value we use the pv abbreviation so that means the value today dates zero okay so it's the value of the cost of benefit in terms of cash today future value as the name says is the value in the future okay so we're looking at money in the future all right so future value present value all right so today and sometime in the future so how to put the two together so the future value is the value at some point of time in the future of an investment we make today okay so how do we convert it well we have to look at interest rates so the third element is the interest rate all right so to convert an investment today present value into a future value we have to do something with interest rates okay so of course it depends on how often the interest is calculated and credited let's keep it simple let's look at one year and 10 annual interest so notice 10 annual interest one year so if i invest a hundred thousand dollar today one year from now i'll get a hundred and ten thousand which is the hundred thousand that i invested today plus ten thousand dollar in interest we say the hundred thousand dollar investments yields ten thousand dollars in return which is why we also called interest rates yield to maturity or yield so we can call it interest rate or we can call it the yield to maturity it's the same thing just different names okay so we have present value future value interest rate and because to calculate interest rate we need to know the period we also have the period so we have four variables present value future value period interest rate so let's apply we have a hundred thousand today we invest at six percent for one year how much is our future value you can type it in the box okay all right okay so get back a hundred thousand which is our principal amount plus the interest that's six percent for one year which is 106 000 altogether all right so we can express it as the principle which is the present value plus the pres the principle times the rate of interest for the year okay 106 000 now one interesting thing one interesting concept is that 106 000 is also the opportunity cost of spending 100 000 today right so you have a choice you can spend a hundred thousand dollars today or you can invest it at six percent for one year but you cannot do both so you have to check you have to decide all right so you are giving up by consuming today the return that you would get in the future all right so putting the variables we have the present value 100 000 today the number of period is one year the rate is six percent per annum the future value is a hundred and six thousand so it's important to know the variables okay in dcf you'll have eventually five variables we are talking here we already have four of the variables okay remember we're talking about one period of one year we're going to complicate this a little bit okay so what you notice with those two examples the only difference was the rate it was the same initial investment the same period the same number of periods but the rate of interest was different so if your rate was 10 you got 110 000 if your rate was six percent you got a hundred and six thousand so the higher the rate the higher the future value all other things being equal right we can put it in a formula okay our future value is equal to our present value times one plus the rate of interest for one period okay we'll see for multiple periods later any questions so far i'm taking it really slow okay so all other things being equal the higher the interest rate the higher the future value the higher the present value that is the amount invested the higher the future value again everything else stays the same now it's not always that simple all right so one of the very important concepts we need to get our head around is the concept of compound interest compound interest is interest on interest okay and we will see how that works so we've been looking at one period so far one period of one year and all we did was change the interest rates now we're going to go to multiple periods so what happens if i invest a hundred dollar at six percent per annum but i leave the money in the account for two years okay so the rate of interest stays the same so we get six percent per annum for two years i don't touch the money okay i touch it at the end of year two so what happens now so at the end of the first year you have your hundred dollar in your account plus the six percent interest which is six dollars so uh then you leave that in the account that money then earns interest for another year so at the end of the second year you get your hundred dollar back plus the interest you earned in the first year plus interest on the interest plus interest on the principal for the second year so all together you will get 112 dollars and 36 cents we can generalize this as an equation where the future value at period n is equal to the present value times 1 plus the rate of interest at the power of the number of periods so we can decompose it we start today with 100 in the bank account at one year the hundred dollars still there but it's the amount has increased by the rate of interest so now we have 106 i we don't touch anything we leave it in the account the next year the hundred dollar is still there it has earned interest at six percent six dollars we have the interest we earned in the previous year six dollars and that six dollar earns interest at six percent 26 cents so if you add all that up you get the hundred and twelve dollars and 36 cents the only way you're going to get that is by leaving the money in the account and if the rate of interest on the account stays the same so surprise there is no three percent interest so far it's only six percent okay so if you take the money out you're not going to get the benefit of the compound interest okay all right so now let's look at what happens the longer we leave the money in so here we are investing a hundred dollar today at six percent annual interest the rate of interest stays the same and we look at what we have in the account at the end of different number of years so we've already calculated for one year and two years we found 106 after one year 112.36 up to two years and you can see that as we go longer we get more money okay so if you leave the money in the account don't touch anything and it keeps earning six percent at the end of ten years you now have a hundred seventy nine dollar and eight cents okay so this is compounding it's interest on interest all right so let's see quick check the time value of money says that a dollar is worth very good more today than tomorrow very good the second question the higher the interest rate the the future value all other things being equal yes so the higher the interest rates the higher the future value third point the higher the amount invested in other words the present value the the future value okay very good so the higher the amount invested the higher the future value all other things being equal the present value is the value of a cost or benefit computed in terms of cash all right very good in terms of cash today very good compound interest is very good all right very very good okay this is good you crossed all the notions very good okay so compound interest is indeed interest on interest all right so now another important point so we we know that compound interest is interest on interest right now let's talk about number of periods which has to do with how often we compound the interest and obviously it's different depending on the period so if your annual interest is six percent i want to know what is the equivalent monthly rate if my interest is calculated and credited on a monthly basis in other words how do i convert my annual rate into a monthly rate so that i can have monthly compounding so if j is a one month interest and n is a number of months one year is 12 periods a one year deposit of a hundred dollar will have a future value of 100 times one plus the monthly rate at the power of 12. this is nothing more than the formula we looked at it before but we adapted for the number of periods matching the interest rate so one important thing is that you need to bring everything back to the same things so if you have monthly payments you need to have monthly rates and monthly periods okay everything has to be matching okay so in one year your future value is 100 times 1.06 so we put 1 plus j at the power of 12 equal to 1.06 we solve for j which you can do with the calculator with spreadsheet and you can find 49 basis points 0.49 okay so and bp is a financial market notation which means basis points is 1 100th of a percentage point so 0.01 so 0.49 percent is 49 basis points so the frequency of compounding changes the future value significantly okay so we're going to look at the impact of the compounding period so let's take a twelve percent annual rate a six percent semi-annual rate a three percent quarterly rate and a one percent monthly rate and look at the future value depending on the frequency of compounding so with an annual rate okay it's 12 annual rate we get paid at the end of the year there's no interim compounding so it's a one year rate a one year period and the payment at the end we get a hundred and twelve dollars if it's six months so six months semi-annual rate is six percent for every six months so you get paid and credited interest at the end of six months and again at the end of the year now your future value is 112.36 notice the difference okay that is entirely the result of the compounding frequency if you bring it to a quarterly so now you get interest paid and credited in your calculated quarterly paid and credited in your account every three months your future value becomes 112.55 cents which is a 55 cents difference to an annual compounding and of course if you increase the frequency to monthly then the difference becomes bigger now the future value is 112.68 cents in other words 69 cents higher than the annual compounding okay and this is only on small amounts so you can imagine that it would have a big impact if you're looking at large sums of money okay so it's very very important to know what is your frequency period all right so this was with a 12 annual rate if you if your interest rate is shooting up to incredible amounts like 24 of course the impact will be higher so the higher interest rate the higher the impact of the frequency period okay so we are past the time it's 122 you're free to leave if you have any questions i'll hang around for a couple of minutes but not very long because i have something like okay um benson you are free to go as well if you want okay okay so students make sure you respond to your classmates messages for the group work remember group work is rated and if you don't do anything if you don't pull your weight your grade will be impacted by the peer evaluation so please respond to your classmates messages all right thank you everybody okay so i'm going to leave now because i have something else at two o'clock and i need to eat my lunch so have a great weekend bye ah

hmm so so ah uh good afternoon professor hello hmm okay everybody good afternoon let's get rolling so we are in the process of discussing discounted cash flow methodology all right so we've talked about compounding frequency last time now let's proceed a little bit further with our discussion so as i already mentioned present value is the value today date zero of a payment that will be received or paid sometime in the future so it is the equivalent to investing today in order to be equal to a specific amount on a given future day and we have to value payments under the same or consistent assumptions so it's going to be very important to compare apples to apples so when we know the future value we can find the present value all we need to do is work on the formula so we've established that for one period the future value is equal to the present value times one plus the rate so the present value is simply the future value divided by one plus r just the future value calculation inverted and you can generalize this for n period just like we did for the future value so that's the present value of a payment credited n years in the future with calculations at the end of each year is the future value divided one by one plus the rate at the power of the number of periods now this is very very important because it is the grounding for discounted category calculation so all of the things being equal the higher the future value the higher the present value the shorter the time period the higher the future the present value the lower the rate the higher the present value so these relationships are very very important it's important that you master them as a basis a foundation for finance and discounted cash flow analysis now what's also interesting to notice is if you graph the present value of 100 in the future at a six percent rate of interest per annum you will find that it's not a line rather it is a curve that is convex we're not going to do anything about convexity this will show up if you take finance classes a bit more advanced later on but this is an important point to bear in mind as you progress in finance courses you can see it right there so this spreadsheet basically tells you the present value of a 100 dollar payment one year from now five years from now or ten years from now with different rate assumptions so if we take the extreme you can see that a hundred dollar one year from now at a one percent annual rate has a present value of ninety nine dollar and one cent at the other extreme a press a payment of a hundred dollar ten years from now at a rate of 15 per annum gives you a present value of 24.72 so you can see that hi the higher the rate the lower the present value everything else being equal and the longer the antenna the lower the present value again everything else being equal and you can also see that for a 1 interest rate variation the difference in present value will vary with the rate and the channel which gives you the convexity all right so let's look at some examples let's uh think about what happened in the battle between sony and microsoft for gaming stations so back in 2005 uh sony found out that they would have to delay the launch of the playstation 3 for one year until november 2006 but microsoft was ready to launch the xbox 360. so they had one year without competition it is november 2005. you are the marketing manager for the playstation you estimate that if it had been ready to launch immediately you would have been able to sell two billion dollars worth of the console in the first year however with the launch delayed by one year the head start that microsoft has will reduce your first year sales by 20 so your first year sales will now be 1.6 billion dollars if the rate of interest in the market is eight percent what is the cost of the delay to microsoft to uh sony sorry to sony what is the cost of that one-year delay so how do we go about this well we know that if we were able to launch today we would make two billion in the first year but because it's delayed one year later our revenue will be 1.6 billion 20 percent less we know the rate eight percent per annum so we need to compute the revenues if the launch is delayed and compare them to the revenues from launching today which means we need to compare apples to apple we need to convert the future revenue of the playstation if it was delayed to an equivalent present value of those revenues today so we know that the revenues will drop by twenty percent so 1.6 billion if we were to compare it to the launch of 2005 we have to convert it using the interest rate of 8 percent in other words we calculate the present value of 1.6 billion dollars one year from now at the rate of 8 which gives us 1.48 billion in 2005. okay so the cost of the delay is the 2 billion we would have made in revenues with an immediate launch compared to the 1.481 billion present value of the revenue we make one year later in other words 519 million dollars okay so the whole point is you cannot directly compare the 2 billion and the 1.6 billion to compare to the 2 billion you have to calculate the present value of the 1.6 billion okay and we know the formula we've seen it before all right so your 2005 if you launch immediately after one year you get two billion if you wait a year you'll get 1.6 billion in 2007 you have to compare apples to apples all right okay so this delay has cost you 519 million dollars in dollars today turn so now we're playing with slightly different numbers so it is 2005. the marketing manager the playstation 3 has to be delayed you estimate you could sell three billion dollars worth of the console in the first year but the launch will cost you 35 percent of the sales if the rate of interest is 6 what is the cost of the delay so it's exactly the same problem with different numbers and we are going to use iprs oh most of you got the correct answer good all right so let me share the solution with you all right so it's exactly the same problem as we were talking about with uh the previous uh data all right but we just changed the number so if released today the sales at the end of one year would be three billion we have a 35 decline if it's delayed for one year and the rate is six percent so we need to bring everything onto the same date so we need to calculate the present value of the reduced sales and we should find the present value being 1.84 billion which means that the cost of the delay is 1.16 billion so it's exactly the same question with slightly different numbers okay all right so we have been talking about some of the basic rules for discounted cash flow calculations first we can only compare values at the same point of time second to calculate a cash flow's future value we compound it to calculate a cash flow's present value we discount it all right so you compound interest when you're calculating a cash flow's future value and we have learned that compound interest is earning interest on interest and we have seen that the future value at period and of a cash flow is that cash flow times 1 plus the rate at the power of n however when we calculate the cash flow at a present value we have to discount so we go back the other way and the present value of a cash flow for n period is that cash flow divided by 1 plus r at the power of f this is what we've done okay i'm just summarizing all right so just an example if you invest today 826.45 for two years at 10 the future value is 10 000 earth a thousand dollars if that 1 000 was three years from now the present value at 10 would be 751.31 okay now another little example for you to practice okay so you are considering investing in a savings ban that will pay you 15 dollars ten years from now okay if the market rate is six percent what is the price of the bond today so what do we do first and always we do the timeline so we're going to buy the bond today time zero it will pay us fifteen thousand dollars ten years from now okay we know the market rate is six percent there are no interim payments we want to know how much do we pay today all we have to do is calculate the present value of this fifteen thousand dollars for ten years at six percent per annum we know the formula okay and we should find 8 375 as 92 cents now we can do it with the formula we can do it with an excel spreadsheet or we can do it with the financial calculator so if you use a financial calculator what you have to do is input the relevant variables so you know the number of period and remember everything is on an annual basis here so we don't have to do any conversions this is 10 years six percent per year no entering payment so zero the future value is 15 000. we solve for the present value and it gives us 375.92 why is there a negative sign here that's right catching it's an outflow we are buying the bond and we are receiving the money 10 years from now very good so we need to have a negative number okay so we have an outflow to buy the bond and then inflow when we receive the payment at the end of 10 years very good now remember we talked about zero coupons bonds that don't pay any interest remember when we discussed that way back a couple of a few sessions ago and somebody said why would i buy a bond that doesn't pay me any interest well this is why okay so we notice this bond doesn't pay any interest so with a market rate of six percent the bond is worth eight thousand three hundred and seventy five dollars ninety two cents the return is basically the difference between the price at which you buy and the price at which and the money that you receive at the end okay all right your turn you're going to practice xyz company expects to receive a cash flow of two million dollars in five years with the market rate at four percent how much can they borrow today in order to be able to repay the loan in its entirety with that cash flow and it will be the ipr so that's in okay okay slowly and let me see all right so thank you very much i noticed that four of you agree with me that boring is bad and leads to trouble good okay so let's look at the solution here all right so the timeline from zero to five at the end of five years we're going to get a cash flow right and we want to be able to pay back the loan with this cash flow so we want to know how much we can borrow today given a market rate of four percent it boils down to finding the present value of this two million for five years at a four percent annual rate and we should indeed find around 1.6 million so with the financial calculator the number of period is five the annual rate is four percent no interim payment the future value is two million we solve for the present value we get one million six hundred forty three thousand eight hundred fifty four and twenty one cents okay so we notice that the loan will be less than the 2 million we pay back because of the time value of money okay all right so we're going to move on but before i do that we have a message in the chat from lying you for group 11 members if you are in the classroom and you have not yet connected with your classmate in group 11 please do so on the link provided by lying in the chat all right so we have so far dealt with uh cash flows where there was one cash flow today one cash flow in the future but now we are going to complicate things a little bit by adding a stream of cash flows all right now imagine we saved one thousand dollars today and then one thousand dollars at the end of the next two years we earn a fixed rate of 10 percent in uh in our savings account how much do we have in the account three years from now that assumes we're not touching the account at all okay we leave the money in the account so we want to calculate the future value of that stream of cash flows okay so the different ways we can do that we can do it this way so today we deposit one thousand dollars at the end of the year we have the one thousand dollar that we have deposited plus the 10 interest which is 1100 and we deposit another thousand dollars so now we have 2 100 the next year we leave the money in the account it earned 10 interest we have 2 310 in the account we make another deposit of 1 000 that means we have 3 310 we leave it for another year it accrues interest at 10 we end up with 3 641 in our account so this is one way of doing it now we can also do it by computing the future value of each cash flow separately so we have a cash flow today one thousand dollar present value charts we can compute its future value three years from now which is one thousand three hundred thirty one we also compute the future value two years later of the 1000 deposit we made at the end of the first year which would be 1210 and the future value of the third deposit which will be made at the end of the second year which is 1 100 and then we add them all up and we should get the same result so the future value of these cash flow is the sum of the future value of each of the cash flows okay so if you generalize and you look at the series of cash flow c0 c1 c2 c and we can compute the present value of this cash flow stream similarly in two steps we can compute the present value of each cash flow and add them up or we can combine as we did each present value as we go back okay so general in general the present value of a stream of cash flow is the sum of the present value of each category notice in this formula just pay attention it's important in this formula each cash flow is different the rate is the same okay we will see examples with the cash flow are all the same and there will be times where all the rates are different okay all right let's practice with a little example so you have just graduated and your auntie agrees to lend you the money to buy a laptop but you have to pay her back within six years you offered to pay her the rate of interest she would normally get on her bank account usd may you will be able to pay her 70 next year 85 in each of the next two years and then 90 each year for years four to six if your auntie gets 0.5 per year on her savings account how much can you borrow from her and this is an iprs question yes uh wait a minute okay okay we don't have the iprs uh we will have it it just takes some time okay all right so remember the cash flow 17 next year 85 in each of the next two years then 90 each year for years four to six is a total of six years the rate is 0.5 and you want to know how much you can borrow from your auntie today okay very good all right so let's walk through the solution okay so we have the timeline we start today date zero after at the end of the first year you pay for seventy dollars then eighty-five dollars each for the next two years and ninety dollars each until end of six so she should be able to give you the amount equal to these payments in present value terms we use the formula which is the present value is the sum of the present values of each of the cash flows and we can find this 500.90 so you can use the formula you can use the calculator you can use an excel spreadsheet all these ways would work now the second part to the question suppose that the auntie gives you the money and then she deposits your payments in her bank account every year how much will she have six years from now and this is appearance huh what happened mention we're seeing your email mention [Music] what happened we lost the email we got the email oh okay [Music] okay very good all right so let's walk through this little exercise together so we are looking at computing the future value of the yearly deposits so we can do it this way so by uh calculating the future value at each stage or we can calculate the future value of each cash flow and add them all up but there's an other quick and dirty way to do that since we've already calculated the present value of the cash flow we can directly calculate the future value of that present value all three ways should give you the same result 516 and 11 cents so you can verify your calculation by using one of the other ways no matter which way you go about it you should get mathematically you should get the same result all right one more exercise this is all about small exercises to practice very simple discounted cash flow okay so you have you're saving 1 000 today and then at the end of the next two years how much do we have in the bank three years from today at a rate of six percent [Music] uh [Music] very good okay you're getting the hang of these things huh all right you should be very well prepared for that for the quiz okay let's walk through it again we have a timeline the first payment is today and one year from now and then two years from now and we want to know the future value of these cash flows we can go about it many different ways we can calculate the present value of the cash flow and then the future value or we can calculate the future value of each cash flow and add them all up okay no matter which one you do you should end up with the same result any questions so far okay okay now we're going to talk about two very specific types of financial instruments the first is called perpetuity so perpetuities come from the word perpetual which means going on forever so perpetuities perpetuals consoles are dead instruments with no final maturity so the payment go on forever okay so it's a stream of equal cash flows notice the difference here all the cash flows are the same okay equal cash flow that occur at regular intervals and go on forever okay so this is what it looks like notice that the first payment happens at the end of the first period okay so whenever you're dealing with perpetuities the first payment is at the end of the first period okay so you see a stream of cash flows all the same going on forever how to calculate the present value well we know that the present value of the stream of cash flow is the sum of the present values of these cash flows however these cash flows go on for ever okay so how do we solve that well when you have these kind of cash flows going on to infinity you can simplify the formula to the division of the cash flow by the rate only if the rate is positive if it's not it doesn't work okay so if you have a perpetuity with the same cash flows going on forever you can compute the present value by simply dividing the cash flow by the rate so here's an example of perpetuity or console these are government securities that were issued in the past by the uk the u.s et cetera this is one that was issued by the united states government and as you can see it was issued in 1877 and it had no stated maturity and what happened is that the government decided to pay them back eventually so they have no obligation to do that but they have the option to do that in modern times nowadays you have this kind of perpetual bars are issued by corporations so they have the option to pay them back early okay and these perpetual bonds uh are treated uh from an accounting standpoint as almost like equity because they go on forever okay all right now another application of perpetuity is endowments so an endowment is when a charitable foundation or a very generous high net worth individual makes a donation to a university or a non-profit organization and that donation is invested to generate equal cash flows going on forever so here we imagine that you won the lottery and you made a lot of money on mark 6 and you're willing to donate 4 million of your earnings to hkust to endow a professorship assume the university earns five percent per year on its investment and the professor will get the first payment one year from now how much will the endowment pay her every year so here you know the present value you know the rate you want to calculate the cash flow okay you have the formula all you have to do is turn it around to work it out now collaborates is different roman a a caller one means simply you can call the bond when you want to it's callable is not specific to perpetuals all right so iprs people on my endowment here i want to know how much i'm going to get every year you [Music] wow oh what happened okay a few of you got mixed up okay let's see how i can fix that all right so let's walk through the solution okay so you're donating 4 million today the university earns 5 and we want the payments to go on forever so we use the perpetuity formula okay we know that the present value is equal to the cash flow divided by the rate so now we know the present value we know the rate we want to know what is the cash flow okay so we'll just turn the formula around the cash flow is simply equal to the present value times the rate so four million times five percent is two hundred thousand dollars okay questions problems okay no questions no problem all right so we've talked about perpetuity so remember a stream of equal cash flows going on forever and the first cash flow starts at the end of the first period now we talk about another instrument that's similar but instead of the payments going on forever they stop at a certain period so this is what we call an annuity or fixed payment loan so you have n cash flow and the cash flows are all the same so the difference with the perpetuity is that you have a stop okay it ends after n periods there are many examples of energies can you think of any what's a classic example of vanities yay mortgage okay mortgages savings account um no mortgages uh energy savings accounts is an account moment where you just deposit money okay it doesn't promise you a stream of equal cash flows all right but yeah so you might yeah you might have different insurance products that are the same car loans things like that they tend to be whenever especially when we talk about financial products for retail for consumer they tend to be designed as enriches because it's easier so the customer doesn't have to worry about exactly how much they're paying it's always the same amount okay so this is what it looks like all right again the first payment is at the end of the first period all the payments are the same and they end after a number of payments all right now how do we compute the present value of an entity unfortunately it's not as easy as a perpetuity you can simplify the formula somewhat because all the cash flows are the same but this is about as much as you can simplify okay so remember the present value of the stream of cash flow is the sum of the present values of the cash flow okay all right now this is how you compute the present value to compute the future value you know that the future value is the present value times 1 plus the rate of the power of n and you simply substitute present value for the formula we have made here to express the future value as a function of the cash flows the rate and the number of periods all right so let's apply this and as you all said in the chat box a mortgage is a classic example of annuities so c your cash flow is your installment so they can be annual or it can be monthly it depends how it's calculated n is the number of years r is the interest rate and pv present value is the amount that you borrow the future value will be zero because by the time you get to the end you will have paid back everything so the future value will be zero so here this spreadsheet gives you the detailed breakdown of a mortgage of 5 million for 30 years at an annual rate of two percent with an annual payment so you can compute the payment you simply sold for the payment and you can find 223 250. what i have done in this spreadsheet is breakdown for each payment that you make every year the portion that comes from interest and the portion that is principal repayment okay so we start at year one at year one you borrow five million dollars okay at the end of the year you pay your 223 250 okay now i need to know after making that payment how much do i still owe the bank the only way to do that is to calculate how much of this was interest so i compute the interest by taking the amount that i borrowed times the rate of interest it gives me a hundred thousand dollars i subtract this amount from the payment that i'm making and it tells me how much of the amount borrowed i have paid back in that installment at the end of the year i therefore owe the bank the 5 million i borrowed less the portion of the principle that i have paid back in the installment which is 123 250. this amount becomes the amount at the beginning of the second year okay and we calculate the same thing why do i do that it is to show you that at the end of six years you still owe the bank 4 million 222 000 to 527 off your 5 million dollar mortgage even though you have paid 6 times 223 250 dollars because at the beginning what you pay is mostly interest so it's important to understand the mechanics because if you decide to stop paying on your mortgage you find out that you can still owe quite a lot of money to the bank okay all right now let's apply annuity calculations with a very nice offer from your mom and dad so your mom and dad are way more generous than me and my husband they make you an offer you cannot refuse they are giving you part of your inheritance early they're giving you a choice they will pay you 10 000 per year for each of the next seven years starting today the last payment will be at the end of euro seven or they will give you their bmw convertible which you can sell for 61 000 guaranteed today if you can earn seven percent on your investment which should you choose and prs so take your time it's a tricky question take your time you [Music] oh my goodness what a mess okay my my oh dear this was a bit of a mess okay so let's have a look right this was a complicated question all right so you had to compare option b with 6 61 000 today with a stream of equal cash flow starting today and going on for seven years okay so first thing you need to do is look at what is your timeline okay so this is what it looks like so what we notice is that there is a stream of cash flow that are all the same so it makes us think of an animation problem is this ten thousand dollar today okay so we can put that aside and then look at what is the present value of my seven year annuity of ten thousand dollars a year at our rate of interest and then we'll have to adjust for these 10 000 that is in present value terms already okay so we compute the present value of the ten thousand dollar entity for seven years at the rate of whatever it was seven percent and we should find 53 000 892.89 but be careful because there is the 10 000 that your parents are giving you today so the total present value of all these cash flows is 63 892 0.89 which turns out to be more than the value of the car okay the value of the car was 61 000 so you have to be careful warning i am devious and tricky so questions may have little traps in them okay and this was a trap and some of you fell right into it alright so remember always annuities perpetuities you can use the formula but the first payment has to start at the end of the first period if you have payments occurring today you have to adjust for those all right so let's look at another example and again this is going to be tricky so we're looking at the case of adam who is 25 years old he has decided because he's taken my class so he's very aware of the retirement issue he's decided to save 10 000 in his retirement account at the end of each year until he is 45 years old at that point he will start contributing to the account but not touch it until he reached the time and age of 65 assume the account earns 10 a year how much will adam have saved at age 65. again prs question [Music] you [Music] aha okay all right so let's work it out so it was a tricky problem again but then for different nature so first thing to do is always to look at the time [Music] yes winter always look at the timer so the timeline tells you that it is today he's 25 years old and he starts putting money in a retirement account at the end of each year until he is 45 years old so 10 000 at the end of the first year blah blah blah blah blah until he's 45 then he doesn't touch the account okay until he's 65. so what we have is two distinct periods the first 20 years where he contributes equal cash flows every year in his account which is of course an enmity and then he does nothing for another 20 years so we want to know what's the future value at the end of these 40 years the way we are going to do this is by calculating what is the future value of this annuity or the present value by the way and then convert it into the future value of all of this so when you have situations like that you can look at the two periods first one then the other so we first compute the future value at age 45 of all these payments so we use the annuity formula and we don't have a problem because there's no payment today okay so payment every year at the end of the year of ten thousand dollars for twenty years at the rate of ten percent per annum for twenty years gives me five hundred seventy two thousand seven hundred and fifty at the time when he is 45 okay so that money is then going to sit in the account accruing interest for 20 years so then we want to compute the future value 20 years from now at age 65 of this amount 572 thousand seven hundred fifty dollars the rate of 10 and we find 3 million 850 333 175 dollars okay so we notice there's no payments we know the present value we know the rate we know the number of periods we solve for the future value okay negative amount because we invest this for another 20 years all right questions so when you're going to get the questions in the quiz read them carefully okay sometimes there's a little trap okay so you first spot the trap if there's one not always okay think about the problem before you start doing the calculations all right last part of the class today is about applications of the things we have talked about so so far we have sold for present value future value for cash flows now we're going to look at solving for other things in particular solving for the number of periods so if you have a credit card in hong kong your credit card statement at the end of it has something like this by regulation the credit card issuer must show you something like this it tells you how long that is to say the number of periods required to pay off a certain amount of credit card debt if you pay only the minimum amount okay so what it tells you so i want to put what i put there on this spreadsheet is a case where you would have accumulated twenty thousand dollar of credit card debt and i've been extremely generous here because really credit card rates in hong kong are about double that amount if you were to pay only the minimum amount say 500 monthly at a rate of 10 per year it would take you 48 months to pay 20 pay off the debt if it's 20 which is closer to the 35 or six percent that they normally charge in hong kong it would take you five years so this is designed to show you that if you only pay the minimum amount on your credit card and do not accrue any more debt it's going to take you a long time to pay it back conclusion you should always pay your credit card debt at the end of the month you are much better off borrowing from your bank with a personal loan it will be way cheaper in interest than the credit card debt okay so what we're doing here is we simply solving for the number of periods okay we have the present value the future value is zero we know the payments we know the rate we find the number of periods okay this is just another part of the discounted cash flow calculation here's another example where we solve for now we solve for the rate so we solve for the number of periods the last variable we can solve for is the rate of interest this is basically what we call calculated the internal rate of return or irr so let's imagine you run a toy manufacturing company and you are deciding whether you should buy a new machine so this machine costs 4 million bucks and it can produce 50 000 toys every year which you can sell you estimate for 10 each so you would generate 500 000 of revenue per year the machine is the only input in this particular problem you know for sure the revenue and the machine has a 10-year lifespan so we're looking at a 10-year investment of 4 million that can generate 500 000 every year so what i want to know is if i borrow from the bank to pay the machine will i make will the revenue generated be sufficient to pay the interest okay so we need to find out what is the rate of return that equates the present value of the cash flow of the investment with the cost so we have 4 million today versus 500 000 per year for 10 years okay so we know the present value we know the payments we know the number of uh period at the end there will be zero so the future value is zero we simply solve for the rate so we solve for r which is the internal rate of return or i so your 4 million dollar has to be equal to the revenue you generate in present value terms so we need to solve for this rate so you cannot solve directly by hand it's really complicated so you can use an excel function or your financial calculator and if you solve for i you will find that is 4.28 what does it mean it means that if you can borrow from the bank at less than 4.28 then you should buy the machine because the revenues it generates are more than enough to cover the interest payments on the loan okay and of course the lower the bank rate compared to this break-even rate the better it is right so this is an irr calculation internal rate of return which is basically solving a discounted cash flow problem for the rate okay so we're getting it's right bang on time i'm so good all right so um these are the dcf calculations so sometimes at the end we will see with uh in the second part of the quantitative thing but sometimes you have a payment at the end so then the present value will simply be the sum of the present values of the cash flow plus the present value of the final pay all right so we've learned discounted cash flow calculation foundations there are five variables you must remember the five variables in this year present value future value number of periods interest rates entering cash flows to find one you need the other four so always when you have a ecf question look at where are my five variables okay sometimes it will be zero so if you have an entity the final pay that the future value is typically zero because you will have paid back everything at the end sometimes the payments are zeros there's no entering cash flows okay sometimes the present value is zero you have nothing in the account to accumulate but always figure out what are my five variables present value future value number period interest rate and the cash flow the payments okay you need four to find one and memory if you if you've got that clear in your head and don't get confused so the rate it can be uh the symbol can be r it can be i it can be y it can be ytm but it's always the same idea all right present value is always today future value is always in the future okay any questions yes the quiz will cover everything up to and including now and not the addendum okay the annex this just explanations the quiz the exams only cover what i cover in class and remember the quiz build up on what we do in class the kind of questions we do in class you revise those it's good preparation for the quiz the quiz itself is preparation for the exams so it all builds on each other any other questions so if you think of any other questions you can always email me or benson okay yes indeed somehow everything up to and including now is covered in the quiz and benson will send an announcement uh for the group project one i know i only asked for one article if you want to add others that's up to you but i will i will grade one article okay so you're free to go we just finished the class if you have any ques any other questions just email me or uh email benson whichever way you are more comfortable all right what am you have a question uh yes um uh about a project yeah i cannot hear you one file by somebody we submitted everyone another thing what i cannot hear you oh can you hear me a little bit better uh wait wait a minute uh i might find a better microphone so it takes some time wait a minute why don't you type it in the chat it will be probably be easier uh ariane you had a question you had your hand up uh yeah professor for the group project would you prefer a pdf or a doc it doesn't make a submission it's okay thank you when do you have to present your project for yin what project you mean the article and the video or the market news the article in the video um basically there's a timeline that benson should have sent you do we have just one file by somebody else it's the same file uh just one person put it up for the entire group no problem no problem but it happens to me all the time so don't worry there should have been but where i'll ask benson to uh send a repeat announcement it normally he puts it in the announcement can we or do we need to add some description another video link no you just send a link okay yeah thanks you're welcome all right bye bye

so so no questions before we start we have one minute before we officially start the class on this very very wet day what are you doing jen day bouncing around no i think today is a very wet day it is isn't it miserable oh okay then no questions let's get started on the second half of our first quantitative part so in this part what we're going to do is apply what we've learned in the first half of it to doing bond valuation okay so we're going to learn bond pricing basics okay so let's get rolling this is reminding me that i have class with you ha ha okay all right so so we're going to start first by digging a little bit more into what are bonds so you already know a bit uh some of you might know way more but in this class we've already talked about bonds being dead instruments so are debt securities so remember securities are negotiable transferable financial instruments and in the cases of bonds there are debt securities so bonds are traded in debt capital markets and because it is a debt instrument it's a legal contract between the issuer and the investors and under that contract the issuer has to make payments to the investors and the contract will specify in a lot of detail all the terms and conditions including what happens in case the issuer fails to make a payment so when the issuer does not pay an amount that is due under the contract this is potentially a default a default or an event of default is something that has pretty bad consequences for the issuers now there are different kinds of bonds the most common type is called a coupon bond so under the contract the issuer has to make regular payments which are called the coupon payments the interest that the issuer pays and which is used to calculate the coupon is the coupon rate so in the bond market we use different terminology than the loan market in the bond market we talk about issuers and investors in the loan market we say borrower and lenders same thing in the bond market we say coupon rate in the loan market we call it interest rate same thing how often you pay the coupon the frequency is generally annual or semi-annual the date on which the money that has been borrowed which is called the principal the date on which it is paid back if it is paid back is the maturity date the final payment will include the principal also called face value or so-called par value also called notional value and the final coupon payment all right so when we're dealing with bonds we have a whole terminology that we have to get familiar with it's different from the one we use for the loan market okay so just to show you this is a photo from my collection i have a collection of these these are old bonds so in the old days the bonds were actually issued physically so there was physical paper it's called script and what you see here is one of the bonds that were issued by the chinese government quite a long time ago the size of this is about that much okay this big and if you are in hong kong and you walk down antiques road on hollywood road you can actually buy some of these so what it does it tells you who is the issuer so this is the chinese government and then it tells you the uh amount of the issue and some of the basic terms of the issue and each of these represents one individual bond so the minimum amount or what we call denomination here is 20 pound sterling so that was issued in pound sterling at the time bond full 20 pounds turning and you have more information and you will see here it's in four different languages right so it's signed by the issuer and the banks that are helping them to place it and what you see here is the coupons so the name coupon and why it's called coupon and not interest is because attached to the bond itself you had a lot of these little things each of these represents an interest payment so they were attached to as another sheet all the coupon payments okay were represented by these little coupons so every time the amount of interest was due you as an investor would have to go to the bank with these pieces of paper the bank would clip the coupon take it and give you the money okay so that's why we call it a coupon bond all right so the little things here represented the amount of interest that was due on specific dates and owning or carrying those bonds was deemed possession so if you carry those bonds then those were bearer bonds then if you went to the bank with that then you would get paid okay nowadays these don't exist anymore because it's all been dematerialized so nowadays everything is done through uh digital payments and there's no more physical paper in the vast majority of transactions okay now so we've talked about what is a bond all right the many many bonds in the market and in order to put a price on the bond we're going to be using what we learned of discounted cash flow calculation so the price of the bond is equal to the present value of the cash flows from the bond okay so the price today of the bond is going to be the present value of the stream of cash flows that you expect to receive from the bond now what does it mean the cash flow for a bond is the coupon payments that you're going to receive see they will all be the same then at the end you have one final payment which is the money that has been borrowed by the issuer when they issued the bond and that they have to pay back unless it's a perpetual of course and then the price of the bond is the present value of this stream of cash flow okay and it will be discounted back at a rate called the yield to maturity for the number of periods of that bond okay so the number of period is the tenor that is how many periods until the maturity date so this is not something new in fact if you break it down in two bits you can see that this is an annuity the first part and then you have the last payment okay that you'll also have to put in present value terms so this formula can be somewhat simplified by using the present value of an annuity plus the present value of the final payment now this is the general formula if there is no payment at the end you will notice that it's similar to the mortgage if there's no payment at the end and the payments go on forever which is a perpetual then we can simplify it like we learned as the coupon divided by the rate and if there is no interim payments no coupons but only one big payment at the end that would be a zero coupon bond okay so this formula okay serves no matter what the type of financial instruments so let's start by dealing with zero coupon bonds so zero coupon bonds is basically a bond where there is no coupon so there's only two cash flows the price of the bond when you buy it or the price of the mallet issue and the final payment at maturity since there is only two cash flows okay then it's pretty simple the bond price is the present value of the final payment so let's look at an example imagine a one-year zero coupon bond 100 000 face values so face value again it's the same thing as principle it's the same thing as par value is the same thing as notional value it's the amount of money that the issuer borrows by issuing the bond okay this is also the amount of money that has to pay be paid back at the end all right so it's a one-year bond at the end of the year the issuer has to pay back the principal face value notional value which is a hundred thousand dollar it is currently trading at 96 618.36 okay so if you buy the bond today and hold it to maturity these are the cash flows that you will have based on that we can find out what is the yield to maturity we know the present value we know the future value we know the period there is no entering payment so the interim payment is zero we can solve for the rate okay so the rate in this case called yield to maturity is the discount rate that sets the present value of the bond payments equals to the market price of the bond again this is nothing new this is solving for the rate okay so if you look at our formula here okay what we want to know is this okay we know the price we know the principal payment we know the number of period we want to find out what is the rate okay so we can simply rearrange the formula so let's apply this here you have four zero coupon bonds a one year two year three year and a four year bonds all of them have the same face value of one hundred dollars that means they all pay 100 this one after one year this one after two years three years and four years you know the prices at which they are currently trading and what we want to find out is the rate the yield to maturity for each of these bonds there are all zero coupon bonds so there's no entering cash flow you know the present value you know the future value you know the number of periods there's no interim cash flow you solve for the rate okay so you can use the equation makes it kind of hard or you can use your calculator or your spreadsheet in any case solving for the rate will give us the following rates or yields to maturity for each of these bonds okay so gen day principle is the same as face value is the same as par values the same as notional value basically it is the amount of money that the issuer effectively borrows by issuing the bond and has to pay back at maturity all right so again solving for the yield to maturity is basically solving for the rate okay we've done this when we solve for the irr internal rate of return and whenever we sold for the rate in the dcf calculation this is the same thing remember what i said five five variables present value future value number of periods entering payment rate to find one you need the other four here we solve for the rate okay so you can do it on the calculator financial calculator you sold for i so you have the number of periods there are no interim payments the future value is a hundred dollar the present value is the price okay your turn okay benson i think this is prs okay yeah uh let me share the screen for pls thank you so so you do the first year first the one-year bond 100 face value 98.52 price sold for the rate the yield to maturity [Music] so okay very good so next one the two-year one you actually have numbers there you can see the numbers so this you [Music] very good next one the three-year bond so so so so so [Music] very good and last one the four-year [Music] bond hey ah [Music] so bye very good okay so now you should be fairly familiar with how we do this solving for uh solving for the rate okay so again you can do it quickly in your calculator or you can do it on your excel spreadsheet uh whichever one you want to use you should get the correct results indeed 1.5 1.752 and 2.25 all right now let's talk about using the yield curve so the yield curve is anybody anybody knows what is a yield curve want to tell me what is a yield curve anybody curve of bonds with different maturity it's a pretty good summary somehow those would have to be exactly the same except for their maturity so you want to put on a curve the yields of bonds that are the same except for the maturity all right it's also called the term structure of interest rates generally for each particular bond market the yield curve that is used is that of the government securities for that market in the press these days you read a lot about the yield curve and what they do talk about is the u.s government treasury yield curve okay why because the u.s market is the biggest largest deepest most liquid and what's going on in the u.s market has big implications on markets around the world okay so they're all the same bonds except that they have a different maturity so here we have the yield curve of government securities in the u.s so you can see that they go from very short-term or to longer term so we'll talk about treasuries in a little while so you have this yield curve here we want to use this to find out what is the price of a five-year risk-free zero coupon bond with a face value of 100 so let's first walk through the terminology so the yield curve here is a graph of the yields to maturity of u.s government security so they're all the same except for the maturity we want to find out the price okay so the the question we have here is what is the price okay of a five year so we know the tenor five-year it's a zero coupon the face value is 100 all right so in order to find the price which we know is the present value of the stream of cash flows from the bond to no one variable we need the other four so what we want to find out here is the present value so what do we know let's work through the variables what do we know we know the the tenor five year very good number of periods very good fizzy chai what else do we know we know the face value which is the future value which is a hundred dollar very good ah so we don't know the the yield to maturity but we can deduce it from the yield curve okay we can deduce it from the yield curve so let's recap we want to find out the present value we know the tenor the number of periods we know the face value which is the future value we know there's no entering payments because it's zero coupon all right but in order to find the price we still need the yield we can find out from the yield curve okay so from the yield curve we look at the five year that we can see that it corresponds to the five percent yield to maturity so now we have the information we need to calculate our price okay and we should find 78.35 all right any questions okay i see that benson answered jang day's question about risk free i will come back to that in a minute because there's no such thing as risk free that's why i put it in commas all right so risk-free is as close to risk-free as you can get in a bond market the closest thing to risk-free you're going to get is government bonds why because the government can always print more money if they want to so normally normally and i say normally because it's not always right so don't take it as in stone normally governments don't default on their domestic debt and i said normally because it has happened in russia for example the government defaulted on domestic bonds which is why it caused the collapse of long-term capital management ltcm it has been known to happen that governments default on their government bonds for example if there's been a change of regime of political regime and the new government does not want to take on the reliabilities created by the previous government okay so it's quite rare but it happens all right so that's why there is no such thing as completely risk-free you can get close okay but no signal all right so again five variables to find one you need the other four all right in this case we inferred the yield to maturity from the yield curve all right your turn now we have a three year risk-free zero coupon bond with a face value of 900 you have the yield curve what is the price of my bond um and then i think we have a prs [Music] we cannot see the answers there we go [Applause] uh so so [Music] very good well done students okay let me claim this bag very good okay all these kind of things are things you will see in the next quiz and then on the exam all right so it's basically the same exercise with different numbers all right so we use the yield curve to identify the three-year yield to maturity of risk-free zero coupon bond which is 4.5 percent and then we can use this to compute the price of our zero coupon bond and we should indeed find 788.67 dollars okay all right so we were talking about the yield curve and as i mentioned what we talk about generally when we discuss international financial markets is very often the us government securities yield curve so a little bit about u.s government securities so the u.s government issues bonds on a regular basis to finance its budget and the way they do that is through an auction system this auction system is documented on a website okay so let me make sure how do i make this big all right so this is the auction schedule of u.s government securities so what you have on the left side is the kind of securities that are going to be auctioned the date when the auction will be announced so that on that date the government through the fed which is acting as agent of the u.s treasury will announce how many they want to issue how much they want to issue the auction date is the date when the auction takes place and the settlement date is the date the money changes hands so you will notice that there is quite a bit of time going on between the time the auction date takes place and the date when the money changes had okay so we are talking about a few days now we look at here's this today is march 5th okay so today's friday is this new announcement today just yesterday there was an announcement of 3-year 10-year and 30-year auctions so the u.s treasury issues both short-term medium-term and long-term government securities you see that they have different names so anything that is under one year is called a treasury bill so you have 4 week 8 week 13 week 26 weeks and you can see that these happen on a very regular basis so they issue quite a lot of treasury bills then they issue three year two years two years uh this is new actually they used not to do that two years three years five years seven year tenure and 30 year and 20 years is a new one so the longest one is the 30 year it's called the long bond so far the u.s government has not issued longer dated treasuries not the same in other countries other countries have issued 50-year bonds and centennial bonds so we've had 100 bonds particularly in europe and of course remember that the u.s used to issue perpetuals they used to issue consoles they haven't done that for a couple of centuries so the kind of things that you see here all right so starting from the top so we see three year 10 years 30-year 20-year and then you have this thing here it's called tips tips stands for treasury inflation protected securities what that means is that the return for the investors has built in protection on against inflation okay so tips as you can see you have 10 new tips 20 30-year tips these are inflation protected securities in hong kong we have something similar similar which is called the i bond inflation protected bond all right so it pays you a coupon which is based on inflation so if you worried that inflation might pick up then tips are a very very good investment you can see also in green the two-year f r n f r n stands for floating rate note this is a slightly different instrument which the us government started issuing after the global financial crisis and unlike all the other notes and bonds the rate of interest on those is floating that means that rather than staying the same throughout the life of the bond it changes at every coupon period okay in that market we have instruments that have fixed rate and instruments that are floating rate so the floating rate resets at periodic intervals by reference to a reference rate okay so you can see all these different issues and the auction schedule takes you out quite far out okay so the way the government in the u.s does it is very well scripted so everybody knows exactly what to expect now again the treasury bills are government securities with less than one year in maturity because they are short-term there are zero coupons so they are issued at a discount to yield notes and bonds on the other hand are coupon bonds all right why do we call notes and bonds it's based on the maturity so tenure and under we call it a note above tenure we call it a bond and the 30 year bond is called the long bond all right any questions on these okay all right now there's a lot more things to know about government security discounter yield is basically that you issue the treasury bill at a discount to the face value because there's no coupon so you will notice here right that your zero coupon bond has a price which is lower than its face value all right so when you issue a chain day you sometimes you're bouncing up and down it's really funny um so when you issue these bills of course assuming always positive interest rate they will be issued at a discount okay and this is actually the case for most of the money market instruments the very short-dated instruments like commercial paper certificates of deposit treasury bills banker's acceptances tend to be issued with no coupons so discount to yield all right so um yield curve briefly we've talked about it the term structure of interest rates and the yield curve normally is upward sloping okay so this is a normal yield curve why because you would normally expect lower return for shorter dates and higher returns for longer term dates okay however yield curves have been known to flatten and to invert and when that happens it's a sign that something is very very bizarre happening in the market so when you see the yield curve start to having very sudden movement uh then that is typically a signal that something is happening in the market all right so now let's talk about coupon bonds which is the most common form of bonds in the market they pay the face value remember face value principal par value notional value it's all the same thing it's the amount that the issuer has effectively borrowed by issuing the bond and that they have to pay back at maturity and they also make regular coupon interest payments the return on the coupon bond therefore comes from the difference between the price at which you buy the bond and the principal value assuming you hold it to maturity and of course your coupon payment so in order to compute the yield to maturity of a coupon bond we need to know the coupon interest payments and when they are paid and then we will be using our tried and trusted formula to calculate the price so in order to know the price we need to know the coupon payments we need to know the yield to maturity we need to know the number of periods and we need to know the principle this is the same slide as before huh nothing new here all right so let's try it out we have a five-year 1 000 bond 2.2 coupon rate semi-annual coupons and we know the price at which it is trading we want to find out the yield to maturity let's stop briefly here because one of the things that is very confusing about bond prices and fixed income in general is that you have two rates you have the coupon rate which is used to calculate the interest payment in other words the coupon payment and you have the yield to maturity which is the return on the bond okay so don't be confused the coupon rate is only used to calculate the coupon payments okay it's not the yield to maturity okay now notice also we say a one thousand dollar bond what does it mean it means that one thousand is the principal amount of face value okay so when you say a five-year 2.2 percent one thousand dollar bond it's a shorthand way of giving you essential information okay we'll say a five-year 2.2 percent semi-annual 1 000 bond trading at 963.11 okay so here you have the information you have five-year 2.2 coupon rate but big trap semi on your coupons since you have semi annual coupons you have to bring everything on a semi-annual basis okay we have the current price and we want to solve for the rate the yield to maturity so you can do it with your financial calculator or you can do it with your spreadsheet all right so the number of periods it's 10 because we have semi-annual frequency okay so five year times two equals ten periods the present value is 963.11 this is the money you invest to buy the bond the payment so the payment is basically the coupon okay so how do we find the coupon we multiply the face value by the coupon rate and divide by two because it's a semi-annual frequency the face value of future value is one thousand dollar you can solve for the yield to maturity which is 1.5 but you don't stop there because it's 1.5 semi-annual so to find the equivalent annual rate you have to multiply by two okay so that gives you a three percent apr all right okay so to recap here you have all the information beware the trap whenever you have monthly payment to semi-annual payment quarterly payment you have to bring everything that is to say the rate and the um number of periods on an equivalent basis so here we need to calculate the coupon payment okay which is the face value times the coupon rate divide by two because this is an annual rate and then you have all the information you need to solve for the yield to maturity all right and you can do that with your spreadsheet or you can do that with your financial calculator in both cases you should find three percent apr with semiannual compounding uh professor i got a value of 3.1 is that 3.16 what did you use uh i tried to do it manually to get the process so what i did was i calculated the coupon rate uh on the face value so thousand into one point zero one one uh resupport n since it's compounded semi-annually a thousand times two percent what is it one thousand times two point two percent uh yeah but i divided that by two since it's so yeah uh payment should be your coupon payment should be eleven dollars uh yes professor right and then what else did you do uh so i calculated the overall value the amount of coupon payments and the final value including the face value would be uh a thousand uh hundred and fifteen dollars i added the coupon uh values actually no no no i got i got the mistake professor okay okay so ariel is asking me the coupon rate is on the face value yes so to calculate the coupon payments you simply take the face value and multiply by the coupon rate and then you have to adjust by the frequency so if it's semi-annual you divide by two okay all right now let's look at another one um where we did okay now you have a five-year 1000 bond 2.2 percent coupon rate semi-annual coupons and now the yield now we give you the yield to maturity it's two percent okay expressed as an apr okay so this is the annual rate all right with semi-annual compounding so last time we sold for the rate now we want to solve for the price okay so we know the yield to maturity but be careful it's as an apr we know the number of periods be careful it's on a yearly basis you have to adjust for seminar no compounding you know the face value you need to find out the price okay so now we solve for the price which is the present value so the two percent apr is equivalent to a one percent semi-annual rate the cash flows are 10 payments of 11 that is not changed okay because we have the same face value the same coupon rate the same uh maturity as well so you still have your 11 coupon payment 10 times every six months and the last flow cash flow which is one thousand dollar the face value at the end of five years okay we want to find out what is the price so we can use the financial calculator or the spreadsheet the number of period is ten the yield is one percent semi-annually the payment is eleven dollars semi-annually the phase the future value is one thousand dollar we solve for the present value which is one thousand and nine point four oh hmm do you see something weird what happened that's right the present value is higher than the future value what happened so notice that before we had found out that the [Music] yield was three percent apr okay this was the yield to maturity when we calculated it but now notice that the rates in the market have gone down quite a lot okay so the yield has gone down in the market to two percent that makes our existing bond more valuable okay that's why the price has gone up all right let's apply this with i think it's a purest question now you have a nine-year 1 000 note 3 coupon rate semi-annual coupon trading at 1 1038.32 what is the yield to maturity so benson the screen is yours so my so so so [Music] okay half the class fell into a trap okay very funny all right so let's walk through the answers okay all right so it's exactly the same problem as before just with different numbers this is a nine year 1 000 note 3 coupon rate semi-annual coupons don't forget and it's trading at 1038.32 which you will notice is higher than the principal amount right and we want to know what's the yield to maturity so we have 18 payments of 15 so the first thing you do is you have to compute the coupon which is three percent times one thousand divided by two and convert the nine year into semi-annual period so that we have everything on a semi-annual basis and then solve for the yield to maturity so we have 18 period we have the price with the negative number we have payments of 15 every six months and we have the future value which is 1000 we solve for the rate but this is a semiannual rate so you have to convert it into an apr by multiplying by two so don't stop at six months you have to convert it into an apr by multiplying it by two okay any questions so far so these are the kind of questions you'll have in your next quiz and in the midterm exam okay all right so a very important question and something that trips a lot of people is the relationship between the price of the bond and interest rates it's very important the bonds promise fixed payment on future dates so you remember the relationship the higher the interest rate the lower the present value though this is something we talked about before everything else being equal the higher the rate of interest the lower the present value so the value of the bond which is simply the present value of the cash flow varies inversely with the rate of interest that you use to calculate the present value in other words with the yield to maturity so let's look at an example we have a bond with one thousand dollar face value par value principal value notional value the coupon rate is 3.15 this is annual and seven year to maturity so we can calculate the coupon payment which is the face value times the coupon rate is 31.50 this is annual frequency we don't have to adjust for anything we know at the end we will get one thousand dollar and there is seven annual period so depending on what is available if you have the price you can calculate the yield to maturity if you have the yield to maturity you can calculate the prices so notice so far i didn't give you either of the bond price or the yield to maturity you need one of those to complete the four variables okay so using our formula we have the 31.5 coupon payments up to and including year 7 the 1000 payment iq7 and if we use two percent for this yield to maturity we find the price to be 1074.43 which we can express as a percentage of the par value okay the par value being one thousand dollar we can express the price of the bond today as a hundred seven point four four percent of the par value inversely if our yield to maturity is 4 the price of the bond is 948.98 which is ninety four point nine zero percent of the par value okay so you've noticed we did this before that when we changed the yield to maturity we had a change in the price okay so what we observe here is that for a lower yield to maturity everything else being equal the price is higher for a higher yield to maturity the price is lower now why express it as a percentage of the pi value this is terminology in the market when the price is higher than a hundred percent of par value we say it trades at the premium when it's lower than a hundred percent of our value we say trades at a discount when it's exactly a hundred percent we say it trades at par okay all right so when the yield to maturity is equal to the coupon rate you'll find that the bond price is a hundred percent of par value we say the bond trades at par if the yield to maturity is higher than the coupon rate then the bond price will be less than a hundred percent of par and the bond will trade at a discount if the yield to maturity is lower than the coupon rate the price will be higher than 100 percent of par value and we say the bond trades at a premium the tenor amplifies these variations all right any questions this is a lot of terminology okay i've swamped you with the terminology don't panic okay because underneath it all it's the same old dcf calculation with the five variables so what you need to do is get more familiar with the equivalent bond terminology all right so in dcf we talk about the rate in bond pricing we talk about yield to maturity right so the coupon rate be careful all right it's only used to calculate the coupon you can use it as a rule of thumb to determine whether the bond is trading at par premium or discount by comparing the yield to maturity to the coupon rate so i know it's a lot to digest now you have to practice lots of terminology that later if you work in finance and particularly in debt markets this will become second nature all right so any questions after you review these things and you do the uh exercises again if you have still questions just email me or benson okay now we're going to go into a totally different universe and you're going to have to pay attention and forget what we've just talked about and move into this new universe because now we're going to talk about short-term debt instruments and for short-term debt instruments we use different techniques so in this section you're going to have to pay attention and be meticulous if you do not follow the steps you will get lost it's not complicated but you just have to pay attention all right so we are now moving into the universe of short-term debt instruments so the maturity the tenant will be less than one year in this market the money market interest calculations and the names are all going to be different again so this universe includes time deposit treasury bills certificates of deposit commercial paper bankers acceptances forward rate agreements etc in this market the interest is calculated as follow the interest is the notional so this is the principal amount this is the par value times the rate of interest times the number of days to maturity divided by the number of days in the year remember we are dealing with instruments with less than a year in maturity okay so to simplify the future value will be the present value times one plus the rate times the days to maturity divided by the number of days in the year this is just putting in formula terms which i've just said okay so i'm going to walk you through step by step a simple actually not that simple but um an an example all right and we're going to call it the diy dilemma so on the 1st of january 2010 delta investment sealed has 10 million excess cash to invest for two months the treasurer is weighing different options he could place the money in a two-month fixed deposit with sunny bank limited that pays three percent on a money market basis which is actual number of days divided by 365 days in the year or he could buy a lucky gold company bond with the remaining maturity of two months that yield three percent on a bond basis now the bond basis calculation counts 30 days in a month and 360 days in the year so what should he do the first thing to think about is all other things being equal what is the only difference between the two options what's all other things being equal what is the only difference the basis right so the number of days in a month and the number of days in the year okay on the face of it but what other factors should our treasurer think about the risk very good answer the risk okay so we have two options we can place the money with the bank sunny bank or we can buy a lucky gold company bar so in both case we want to know what is the risk that i will not get my money back in other words what is the credit risk okay that's very good anything else we should consider your corporate treasurer very good wing yen liquidity very very good the liquidity so if something happens can i get my money back on the face of it which of the two options is more liquid option one aha we have different opinions okay so the correct answer is the bond remember bonds are negotiable tradable financial instruments so at least theoretically you should be able to sell it back in the market a fixed deposit has penalties so if you place your money in a fixed deposit you shouldn't you normally cannot get it back until the maturity which is why fixed deposits tend to have slightly better yields okay so on the face of it the bond is more liquid than the fixed deposit all right okay and we notice that both are paying the same returns so in answer to one of your classmates point the market rate we can compare them to the current market rate but notice the return the rate is the same okay the maturity is the same the rate is the same okay all right so so assuming we don't have a problem with liquidity and credit risk the only difference is the way interest is calculated so the interest calculation is principal times the rate of interest times the days to maturity divided by the year basis why is that important well we need to answer the two questions how do we calculate the number of days to maturity how is the number of days in the year defined and this brings us to the first of the conventions we are going to be talking about it's called the day count convention or year basis this is the way the market expresses how to calculate interest as a ratio of the number of days in the month by the number of days in the year and they are different conventions so actual actual says you calculate the exact number of days the actual number of days in the months and the actual number of days in the year which means when you're in a leap year you have 366 days in the year and the month of february we have 29 days actual over 365 which is actually quite common says that you use the actual number of days in the month but the year is meant to use 365 days you also have actual over 360 which is sure assume 360 days every year and 30 over 360 which assumes every month has 30 days all of these conventions exist and in fact you can see here that depending on the different instruments you may actually have different ways of calculating interest so if you look at malaysia for example government bonds use actual actual but corporate bonds use actual rubric 365. so when you're going to be dealing with debt instruments one of the things you'll have to check is the fine print to see what is the databases convention that you have to use okay so now we have a little bit more information let's put it down in our two options so can we do the calculation so now we know sunny bank is actually over 365 lucky gold is 30 over 360. we know how to do the calculation but can we do it well no you don't because you don't know when the deposit will start and when it will end so you have to start digging deeper the first problem is that after the treasury agrees a trade with the banker it takes time for the transaction to be executed the trade date is generally not the same as the settlement date you already saw that with the treasury auctions you notice that the auction date and the settlement date are a few days apart okay so you need to know once you've agreed the trade when will the money actually change hand okay so the first thing you need to know is when does the treasurer call his banker that will be called the trade date and you find out when the money will actually change hands that is the value or settlement date and then you want to know when you will get your money back which is the maturity date so the trade or fixing date is the day when you agree the trade the value settlement or effective date is calculated by reference to the trade date and the maturity or turn date is calculated by reference to the value date okay so you don't start counting until the money has changed hands all right so fasten your seatbelt is getting more complicated okay so illustrating this if my trade age is the 28th of march and my settlement date is the trade date plus two business day the value date will be 30 of march and we count one month from that gives us the 30 of april our maturity date all right i'm going to stop there because it gets really complicated after that so i want you to stop digesting all the stuff we have talked about and have a nice weekend in the mists of hkust or wherever you are okay any questions i know it's a lot okay it's pretty heavy duty okay so if you don't want to ask the question now and by the way it's 1 20 so you're free to leave um if you have any other questions that you don't want to ask now you can email me you can email benson all right have a lovely weekend i'm sorry the weather is terrible zhang day go ahead um professor i have a question about uh quiz one yeah uh i see the answers are still hidden so is there any way that we can check our like uh missed questions um okay so if you want to check your so you can talk to benson about that benson is in charge of logistics okay i noticed that the answer has been posted on cameras something i just posted on canvas yeah thank you thank you okay any logistics questions benson will be very happy to help you all right if no more questions then professor had one small doubt sure uh what do you mean by basis the year basis okay that is the convention okay so it's called day count or year basis you can see okay thank you welcome any more questions all right bye bye then

um my hello hello everybody how are you okay so i guess it's time for us to start i hope you all had a nice weekend okay so let's go back to what we've been discussing okay so uh we looked at the diy dilemma okay so the situation was that on the 1st of january 2010 the treasurer of diy was looking at what to do with a 10 million excess cash that he has and he could invest it for two months we looked at two options one being a fixed term deposit for two months with the bank that yields three percent money market basis or buying a bond with a remaining maturity of two months also yielding three percent but on a bond basis and we talked about the fact that we should consider things like credit risk and liquidity but all other things being equal the difference between the two options was basically the way that interest rate is calculated and we looked at how we calculate interest on money market terms which is basically simple interest so where the interest is calculated by multiplying the principal amount by the rate of interest and then by the ratio of the days to maturity to the number of days in the year and that's important because if you were to do and you'll see as we do the calculation that it has a significant impact on the amount of dollars that you receive in the case of the treasurer or that you have to pay if you are the bank and then we we identified the questions we have to answer which is first what is the number of days to maturity and what is the number of days in the year and we talked about a number of different conventions that exist to describe that ratio and it's called the day count convention or the year basis convention and it tells you depending on which financial market you are in what financial instruments you use whether you should use the actual number of days in the month or 30 days in a month and then for the year whether you should use the actual number of days of the year or 365 or 360. now i showed you this to express to show you that different financial instruments have different ways of calculating the year basis all right so then we put all this together and then the question was okay can we actually do the calculation now and the answer was well no we don't know exactly when the deposit will start and when it will end so we need that information to be able to determine the number of days in the month so then that brings us to the question of trade date and settlement date and maturity date as i explained uh on friday the trade date is the day when we agree the trade so we talk on the phone or we message and we agreed to do a trade then the money changed his hand on the settlement date also called value date also called effective date and it's not necessarily the same because it takes time for the process to happen and the maturity date then is a function of the date when money changes hand which is the value or effective date and the number of calendar months that occur okay so in timeline which is i think where we left off okay you have the trade also called fixing date which is t the value or settlement or effective date v is expressed as a function of the trade date plus a certain number of business days and then the maturity or term date is a function of the value date plus a certain number of calendar days or month now pay attention because this is very important all right so if we have a trade date let's say of 28 of march and the convention in that market is for the settlement to happen two business days from the trade date then our value date is the 30th of march and then in one month deposit would bring us to the 30th of april now i am not taking into consideration the next thing we will look at which is business days okay so this is just to show you the mechanics of going from the trade date to the value date to the maturity date all right so let's apply this with diy so in both cases we want to know what is a trade date and then what is the value date and from there the maturity date now the information i'm giving you here is that in both cases the effective date or value date is two business days from the trade date we call this spot spot has different meanings in finance this is one of them okay in this particular environment when we're talking about money market and we're talking about trade date and value date spot means t plus two trade day plus two business days and we know it's a two month deposit so we compute two months from the value date okay so now let's see what else we need to know well i was talking about this problem and then i noticed that the 1st of january is a public holiday so you cannot call your banker on a public holiday because the bank is closed so it cannot be the trade date this is where we start dealing with the third element which is business day definitions so this is very important and in any debt contract you will have a business day definition in this particular case the definition is public holiday in hong kong okay so the first of january is a friday it's a public holiday you cannot reach your banker so you have to wait until the next banking day or business day to agree the trade which sadly for you pushes you to monday the 4th of january which is when you are able to reach your banker and agree an investment trade now we assume the market convention is spot that is t plus two that means my value date which is the effective date that is the day when money actually his hands t plus 2 will be wednesday the 6th of january so monday the 4th is the trade date okay one business day would be tuesday the fifth two business days is wednesday the six so my value date or effective date is the sixth of january and for the maturity date we need to compute two months from the value date which is saturday the 6th of march but saturday is a non-banking day the banks are not open for business in hong kong so what to do you cannot have money changing hands when banks are closed so that's where you have the last convention which is also the most confusing one that is the business day convention which tell you what to do when a payment falls on a day which is not a business day so you have to first look at the definition of business day so in this case everything was in hong kong so the definition only concerns hong kong if you're doing cross-border trades you may have business days in different centers okay so you'll have to consider all the days that are not business days in all the relevant centers and then you have to decide which convention applies in case a payment falls on a date that is not a business day in other words where banks are not open for business in the relevant centers you're considering they are three possible conventions modifying following business day convention preceding business day convention and the most common one which is also the most complicated one is modified following business day convention how does it work all right so i have my trade date my value date and then i have my maturity date and unfortunately my maturity date falls on a day which is not a business day so what can i do well here are the options if you have the preceding business day convention you will move back to the preceding business day so if this is saturday then the payment will happen on friday if you use the following business day convention and your payment falls on a saturday you move to the next business day which means monday so far so good the modified following business day convention tells you you normally use the following business day convention and so you move to the next business day unless by doing so you move into a different calendar month in that case you go back to the preceding business day so if this were to fall say on saturday the 30th of january the next business day would be monday the 1st of february that would change calendar months so you move back to friday the 29th of january don't okay the reason why we're doing this is because of traditions but it still works that way and unfortunately the modified following business day convention is the most commonly used in financial markets all right so now that we have all this we can finally resolve the diy dilemma so we know for both cases it was spot t plus 2 so our trade date is monday the 4th the value date is wednesday the 6th of january 2 months from that would have fallen on saturday the 6th of march but it's a saturday so we move to monday the 8th of march since we don't change calendar dates we calendar months we don't have to adjust and we are fine so now we have everything we need to compute our interest in both cases it's not as easy as it looks so we know the day count convention in both cases so for the deposits it's actually over 365 for the bond is 30 over 360. so in the case of sunnybank we count the actual number of days in the relevant month from the effective date or value date to the maturity date and we can 365 days in the year so for january which is 31 days but we have six that have already passed we only have 25 days we have 28 days in february and eight days in march totally 61. for lucky gold we consider every month to have 30 days so for january we now have only 24 days we have 30 days in february and 8 days in march 62. so now we have that we can calculate exactly the amount of interest in each case we have 61 days divided by 365 in the case of sunnybank 62 days divided by 360 in the case of lucky gold therefore for diy they should buy the bond all other things being equal okay so you can see that the process is very meticulous and at each step you have to think about what are the conventions that apply the calculations themselves are very very simple but if you miss any of the steps you will completely mess up the problem okay so i give you your own little exercise to do right now with supreme bank so for supreme bank i give you straight the trade date which is friday 29th of january 2010. on that day supreme bank borrows 50 million for one month from ksle bankers at five percent per annum and what you need to find out is what is the amount of interest that supreme bank will pay at the end of that one month loan the information you need the market convention for the value date is t plus 2 [Music] wow where was that the day count convention is actually over 365. the business day definition is banking days in hong kong and modified following applying to the maturity date okay so those steps you have to follow the first thing is to find out what is the value date so you have the trade date you have the convention first you compute the value date then you determine the maturity date okay adjusted by the business day convention if necessary once you have that you compute the days to maturity and then you calculate the interest applying the day count convention all right go ahead and do it first step the value date sorry can we see the numbers again here this you want roman is that what you want yes okay so um so yeah very good i'm getting very good responses well done very good okay so most of you have this correct and indeed this is the solution so the trade date remember is the value date plus two business days so the trade oh sorry the value date is trade day plus two business days it was 29th of january so monday the 1st of february is 1 business day tuesday the 2nd of february is 2 business day so our value date is the 2nd of february we count 1 month from that date to the 2nd of march there's no problem with it so we don't need to do any adjustment we then count how many days there are between those two date which is 28 days then we apply the convention and indeed we find 191.780.82 cents okay all right any questions so it's it's really not complicated but you have to be very systematic so during the quiz and then the exam there will be questions like this you will have all the information you'll have a calendar you'll have all the conventions you'll have to read the questions very carefully because i am tricky and devious and make things a little bit more complicated okay so make sure to read the questions carefully any questions oh professor i had a doubt yes uh if the value date was supposed uh 29th of jan suppose the value date was 29th of jan and the the maturity period the the tenor was one month and so basically that would mean that the maturity date would fall in feb which doesn't have 29th feb so which should be here unless it's a leap year yeah if it's not 728. okay okay and if the 28th is not a public holiday then you have to do the modified following business day convention and then you can end up with a very short month okay so with the modified date it would fall to the previous uh or the next modified following the modified following business day convention moves you to the following business day unless you change calendar month in which case you go back to the preceding business day okay so if 28th would have been a holiday then it wouldn't go to the preceding date right yeah depending on whether the previous day is a public holiday or not when you fall into a period like chinese new year or easter and you're un unhappily fall on one of those days which are not banking days and it it can mean several days of adjustment so it's very significant uh roman tells me doesn't january have 31 days yes so i was just confused because if we add then wouldn't the v date be the 31st of january or well oh friday 29th saturday 30 sunday 31st monday first february oh do we have to go back in time and look at the 2010 calendar or whatever no what are you talking about here it's not complicated here you have friday 29th oh okay sorry sorry i think i was looking day 31st right monday first of february one business day tuesday the second two business days yeah are you with me uh yes in this case you don't have you don't even have to look at the calendar right it's 29th of january's friday saturday is the 30th it's not a business day plus not a business day monday the 1st of february business day count one tuesday first second of february business day come to okay yes uh renee is asking me how to get 28 that's the number of days between the 2nd of february and the 2nd of march so song mean as i explained when you calculate the value date so for a day on which you have money changing hands you care about business days the banks have to be open for money to change hands okay so saturday and sunday in most countries are not banking holidays which is what are not banking days which is why you have to read the definition because if you're in the middle east then they can be business day so you have to be really careful okay so no not always the settlement is not necessary t plus two it could be cheaper plus three can be t plus one or it can be same day so some of you have listened to our gamestop webinar and part of it one of the reasons why robinhood suspended trades in gamestop was that because of the t plus two settlement in the united states market there is a risk so whenever you have a day when the money changes hand is not exactly the day you agree the trade there is a risk which is why brokers have to deposit collateral with the clearing house okay so the t plus two settlement was a problem and robin hood ceo was saying why can't we have same-day settlement well because it's more complicated than you think okay so in the market you can have same day you can have t plus one you can have t plus two you can have t plus three which was the way it was in the u.s until last year by the way uh in the old days it could be up to t plus seven okay why because in the old days we didn't have all these computers and everything remember the bonds you had to carry them physically and it would take money for it would take time for the money to change hands so nowadays the argument that the ceo of robin hood was making is nowadays we can actually do this with you know just a line of code right the reality though is same-day settlement um makes it more complicated because you cannot adjust for errors so you would have to pre-fund the trades which is what is the case in the stock market in china by the way okay all right so any other questions on this no okay so if not let me show you in practice why this is important okay so you're familiar with the fact that the hong kong seo government issues a certain number of bonds and this is the retail bond issuance program whereby last year they issued an inflation protected bond it's called the i bond okay so this program comes under what is called the retail bond program okay the retail bond issuance program of the hkscr government so under that program they have the eye bond they have the silver bonds which are for people with silver hair like me okay and this year they changed the age to 60 which is great so i can actually subscribe anyway so the i bond program was issued last year and unfortunately i didn't get enough of the bonds because it was very popular and heavily subscribed so what you can see here is uh the logo of the hksar government so this is the issuer this is the program this is the amount that was issued this is the maturity date 2023 and the government is represented by the hkma which is acting their agent and then you can see the banks that underwrote the transaction and placed it with people like me okay so then you have the information all right so the key facts so the issue date was the 16th of november 2020 it was issued at par a hundred percent and then the minimum amount that you can apply ten thousand and that is also the minimum denomination so one single bond is ten thousand hong kong dollars right then it tells you the interest rate so this is a very unique bond because it's an inflation protected bond so in this case you get the higher of two percent per annum or the floating rate which is the arithmetic average of the one-year change in the cpi compiled and published by the census department of the hkacr for the sixth preceding month rounding to the nearest to decimal places all right so clearly if inflation is going up then their rate of interest will be higher which is um nice but you are guaranteed a minimum fixed rate of two percent which is for three years by the way okay so you can see the maturity date here 16 of november 2023 the fees blah blah blah so i'm going so here the risk the key risks that you're taking on the by buying a bond and then you have some important information here in particular you'll have how interest is calculated so let me move down to there all right let me see if i can make it bigger no uh-huh right so here we say right interest payment dates so you have two asterisks here so whenever you have asterix if you've been properly trained by finance professors the first thing you do is you check the asterix and you check the little font here and you use a magnifying glass because it's always important so here it says unless specified otherwise if the due date for any action on the part of the government with such as making a payment is not a business day in hong kong the hkr sarah government will perform such action on the next day which is a business day in hong kong unless that action falls in the next calendar this calendar month in which case the hkr islam government will perform such action on the day immediately presenting the due date which is a business day in hong kong so here you recognize the modified following business day convention all right and then you have a specific thing because in hong kong you also have specific situation due to black rainstorm warning or typhoon 8 and above and again if that happens and we move it to the next business day okay so then it tells you so if the payment date is changed interest shall continue to accrue to the new payment date and any additional interest shall be taken into account for the purposes of calculating any amounts of interest payable in respect to the interest period okay so you can see that this is very very important i don't think we so here we've defined business day as being a business day in hong kong and then you can check this is all online by the way so you can you can look it up by yourself all right and then if you look at by the way you can see that the bonds are listed on the hong kong stock exchange that doesn't mean they're very actively traded you have the definition here business day means a day other than saturday sunday and general holiday on which both the cmu is operating and banks in hong kong are open for business all right so you can see why this is important all right because it applies directly to the calculation of interest and it can have quite a big impact on the actual amount of dollars you receive or if you're the issuer that you pay so you can find all this on the website of the government of hong kong any questions no all right well if you don't have any questions on this we shall move on to the next part of the course is we're going to start discussing in detail the foundations of financial institutions and particularly we're going to talk about financial intermediation all right so we've done the overview we've done part one and two of our foundations of interest rate we're going to talk about a very important concept right now which is financial intimidation and then we'll dig deep deep deep into financial institutions okay so we are going to start from the big picture by remembering what is it that financial institutions do we look at the classification of financial institutions and then we'll talk about financial intermediation and conflicts of interest all right so it's really important when we talk about financial institutions which form the financial industry to remember that besides the fact that they provide very important functions in the system they are an industry and they are a major contributor to the economy in big financial centers such as hong kong new york london etc so when the financial industry is in trouble when there is a banking crisis going on you may not feel very sad for the highly paid investment bankers who lose their job but you could feel sad about all the taxi drivers and all the restaurants that have a lot fewer customers as a result so when the banking industry is in trouble it's not terribly good for places like hong kong new york london etc now we're going to talk about a big and important differentiation of segmentation of the financial industry so this is again important please pay attention we broadly separate the financial institutions between those that perform financial intermediation which we call financial intermediaries and which are further divided between depository institutions and other financial intermediaries from financial institutions that do not perform financial intermediation okay so you have two big categories financial institutions that are financial intermediaries because they perform financial intermediation and then you have a number of other financial institutions that do not perform financial intermediation within the financial intermediaries we separate those that collect deposits from you and me the retail widows and orphans those that collect deposits are called depository institutions and the other financial intermediaries that do not collect deposits okay so these are the three big types now the depository institutions can issue checkable deposits which is the main way they fund themselves and also can issue financial claims to raise financing from the markets and from other other institutions while financial intermediaries that do not collect deposits rely on issuing a bunch of financial claims okay so notice that i have put here different types of depository institutions okay so commercial banks which we will be digging in detail later but then you have also things like credit unions mutual savings banks building societies i could add a few more like cooperatives a lot of these function on the model of mutual organization that is to say that the customers in this case the depositors are the shareholders big banks like credit tag we call for example they function on that basis okay it's a mutual organization in the uk there were building societies which were a particular type of financial institution specifically designed to help people uh finance housing so building societies with societies that help with acquiring buildings right over the years they demutualize so they've become a lot of them publicly listed corporations and they're no longer mutual organizations all right then on the side of financial intermediaries that do not collect deposits you have insurance companies pension funds mutual funds money market fund and finance companies all right so remember the typology with on the one hand you have financial intermediaries further broken down between depository institutions and the others and the other financial institutions that do not perform financial intermediation now i know this is confusing because a any financial institution could be named or could be called a financial intermediary because they intermediate but here we use this term very specifically to talk about financial institutions that perform financial intermediation okay all right so remember when we talked about at the very beginning about financial system and we established that the financial systems helps channel funds from surplus units to deficit units right now what is important to understand is that two big channels direct finance so remember direct finance when my buyer and seller find each other okay so the money changes hand between the buyer and the seller that's direct finance and that can be assisted by dealers and brokers in the financial markets indirect finance on the other hand requires the intervention of financial intermediaries but before we talk about that we're going to talk first about a number of financial institutions that are not performing financial intermediation this includes brokers dealers investment banks in the strict sense of investment banking custodians trustees and a bunch of others so before i talk about brokers and dealers which we've talked about before let me first talk about these two very very important type of institutions custodians and trustees and anybody know what they do what is the role that they perform anybody very good three are you on time i say see you on yes you hold assets on behalf of your customers okay the role of custodians and trustees is essentially to hold assets on behalf of their customers okay so there is a difference between the two because they are operating under different legal regime custodians operate under company law trustees operate under trust law but their role essentially is the same and it is indeed to hold assets on behalf of their customers all right so see you on do you know any names of custodian or trustees big names anybody yes that's right jp morgan have a big custodian and trustee business very good other big names would be yes citibank has won yeah swiss banks not so much the big players jp morgan state street state street is the big name you've never heard of uh it's massive uh bank of new york melon i've never heard of vargas fish but say the big ones you know the jp morgan's hsbc city bank have custodian services so the this is a business that the banks love because it's not very risky and it's all fees and commissions you need scale because you need the systems you need the efficiency but once you have that then it's a very lucrative business okay so custodians and trustees is a very very important uh yes bank of new york melon um state street jpmorgan city bank hsbc the big ones what do they need to do exactly well they need to hold the assets safely on behalf of their customers so there will be a custodian or a custody agreement between the client and the bank and uh same thing that for the trustee slightly different because the legal system is slightly different so the trustee is actually the legal owner of the assets on behalf of the beneficiary for custodians it's company law so they're holding the asset on behalf of the owner of the assets okay now i don't have time to go into a lot of detail but this is a very very good business for the banks all right okay now we will talk about investment banks later now let's remind ourselves what we already know about brokers and dealers you will remember we discussed it brokers they connect two parties they act on behalf of their clients and they charge a fee for the service they do not buy and sell assets so they don't take positions they don't carry inventory you have many examples of brokers like real estate broker insurance brokers and of course the stock broker so brokers are agents they act on behalf of the clients okay we've already talked about this so you should know about it also we talked about dealers dealers act as principal in their own name with their own balance sheet okay they take position they buy and sell assets they carry inventory and there make money from the difference or spread between the price at which they buy and the price at which they sell the assets now pay attention within the universe of dealers there is one very very specific category which is called market makers so to answer renee question to take position is that they they may decide to buy assets and hold it for a while because they think the price will go up that is taking a position all right so it's having a view on the market and acting on that view by building an inventory okay so let me go back market makers are a subpart of the dealer's universe what they do as the name say is to make a market so they post two-way prices so when you call them they will give you both the bid and the offer they will tell you the price at which they're prepared to buy and the price they're prepared to sell in that way they provide liquidity why because if you have an asset that you want to buy or you want to sell you know you can call the market maker for that asset and you will always get a price at least that's just theory okay so a market maker in government securities is called the primary dealer and that's what they do they make markets in government securities so in very actively traded assets you will have market makers that take a huge risk because they don't know when the client who's calling them whether the client wants to buy or wants to sell so market maker is far more risky than just being a dealer and far far far far more risky than being a broker okay so you have foreign exchange dealers primary dealers in government securities security dealers in certain exchanges you will see dealers and market makers in many different corners of the financial market so remember everything to do with liquidity is always going to be relative right so in normal markets when the markets are humdrum and you know everything is going hunky-dory that's no problem everybody's providing liquidity when the market goes ballistic and everybody is scared the market makers stop making markets so there's no more liquidity okay and it happens so this is a very risky a very risky type of job especially when markets start to move all over the place it becomes very very risky okay any questions on that so i've put now some pink slides which are summary slides of the things i expect you to know when we finish a portion of the course so key learning objectives for you to remember when you review so that was suggested to me by the previous students in the previous term so i've added key summary slides especially as we get into the part of the course that is a little bit more intensive okay so out of this you should remember the classification of financial institutions the definition of brokers and the definition of dealers and i should ask you should remember what's custodian and trustee all right now let's talk about financial intermediation all right so you remember we have financial intermediaries and we have separated them between depository institutions such as commercial bank savings bank mutual bank post office central bank why the post office why did i put the post office as an example of deposit intermediary that's right sunghak in many countries the post office is also a bank they provide banking services retail banking services in my country they do in korea i think in japan as well but in in many countries the post office is also a bank why do you think that is the case and why do you think it makes sense why does it make sense for the post office to also be a bank in many countries logistics thank you very much logistics it's everywhere that's right wing yen it's everywhere winyan ariel warden very good yes the post office is everywhere they have offices branches or presents pretty much throughout the country so they're already here so why not have banking services as well it makes perfect logical sense right so it's easy for people to go to the post office to deposit money to cash their cheques to do basic banking services retail banking services okay how about the central bank hmm why did i put the central bank here that's right sunghak the commercial banks deposit with the central banks yes mean q very good so they are the bank to the banks but in some countries like mine you can also put your money in the central bank so the bank defaults opens retail accounts so not many central banks do that but in some countries they do so you can open an account with the bank of france as a retail investor broadly speaking most central banks act as bankers to the banks and often bankers to the government so the fed in the u.s when we talk about it later at the end of the course you will find that the fed is the central bank of the united states access banker to the banks and banker to the government okay very good all right so we've seen quite a few deposit intermediaries and then on the financial intermediary side we have different type of non-deposit intermediaries such as insurance companies and pension funds which are called contractual intermediaries but you get into a contract with your clients portfolio institutions such as mutual funds and unit trust and other financial institutions such as finance companies so somebody put a question in the chat before about what is a finance company can anybody answer that question for me what is a finance company and give me an example that was songhai's question it's a good question so what is a finance company they lend money to customers yes they offer short-term loans to individuals not a bank okay car loans very good they provide credit no insurance companies are different okay finance companies are typically set up by large corporations to provide financial services to their customers so think about for example car manufacturers like gm gm had a big subsidiary called gmac and what they do is they provide financing for people to buy gm cars in the same way general electric had gecc general electric capital corporation that started off in the same way to provide financing for their customers to buy their products and then became enormous and then grew up and then collapsed okay so that's a good question assuming is and for alibaba counted as finance company not really because it is not designed for financing clients who are buying stuff from alibaba it's kind of and financially is really and that's why the regulators acted it's actually a finance company it's actually a financial institution it should really be regulated as a bank because that's what it does okay the mercedes bank what is the mercedes bank roman mercedes-benz has a bank oh i didn't know so probably then but it's if it's a bank if it's called bank then it has a banking license then it is a bank uh so banks have there are different kinds of licenses for banks and in the united states for example they are what we call um industrial banks so they're not commercial banks they're industrial banks it's a specific charter microfinance that's a very good question kelvin so microfinance it depends whether they're collecting deposits or not so if they're not collecting deposits there are microfinance institutions and so in each country they will be regulated differently so grameen starting off as a microfinance institution but then became a bank so they got a banking charter so now they call grameen bank so it's very specific in china for example rural cooperatives provide a lot of microfinance so then you have to dig into what it is that they do and how they're regulated in their particular country a unique trust aria warden it's kind of like a mutual fund and i'll explain that when we talk about the buy side on the investor side all right lots of great questions very good okay all right so now let's talk about financial intermediation so you will recall okay that where did i put it there you remember that so we said okay direct finance that includes brokers and dealers and people connecting to each other and trading with each other right with help from the financial market but then you have indirect finance which involves the use of financial intermediaries so why do we have that well one of the reasons is that to connect lenders and borrowers issuers and investors and generally supply and demand it's difficult it's difficult because we have different expectations in terms of risk return maturity liquidity let's say for example wig n is a bright young entrepreneur and she's just invented this fabulous machine that is finally finally going to transport us teleporters you know she's going to revolutionize the world i've been waiting for that since star trek she's done it okay but she has no money i'm sorry for you wing yen so brilliant girl but no money she's got this plan she needs financing problem is it's a risky proposition okay you have to finance a young person with you know okay she's been to hkust so that's a big plus but still it's a very risky endeavor it's going to get some time and you will expect a high return for it but our friend aryan he's not so keen because he's a very conservative guy very conservative and he saves money by working really really hard on three different jobs while getting a scholarship to go to university is not about to embark on a super risky proposition plus he might want to get married which is going to be quite expensive okay so he typically will want to keep his money safe and get a decent return but not too much risk and fairly liquid so you can see how this might be difficult to connect the two parties it's not easy when you have so many different requirements and you will remember that because remember we brainstorm investors desires and issuers desire and they have very different requirements so to solve the problem you have financial intermediaries so what do they do they step in the middle of this okay and our friend nothing is going to be our financial intermediary today so she's going to step between yen and aryan and she tells aryan don't worry you can deposit your hard earned savings in the bank of lamb it's a very solid sound bank it's well regulated we have this big vault we have all the security your savings will be safe with me and i'm not going to pay you a huge return but you can get your money at any time so aryan is happy tick not much risk tick okay return take liquidity and then nighting turns around and says to inyan i believe in you i think this company that you're trying to start up has a good a good potential but it's super risky nevertheless you know with your mom and dad providing a guarantee i can give you a loan at a pretty high rate of interest but it gives you time to start your prototype and then she makes a loan to win yen's company okay so by stepping in the middle you resolve the problem the lenders will receive money okay in exchange for a contract which is typically a loan contract the savers are the lenders that's the savers okay we'll give money to the financial intermediary so that's our friend aryan here in exchange for deposit contract and the financial intermediary the bank of lamb will lend money to win yen's company under a loan contract okay so this is a very very important function okay so the big thing to understand with financial intermediation is that the financial intermediary steps in the middle okay that's why we call it indirect finance they deal with both sides separately and by doing so they solve this difficult problem of different objectives from different sides now they financial intermediaries perform many many useful functions in the economy first off they provide indirect finance which by the way is a much bigger channel than direct finance for all the obvious reasons that it's far more risky to do direct finance the much more important source of finance than the capital markets they reduce transaction costs and asymmetric information so these are can lenders also be borrowers in the same time we will explain about that later yes they can lenders can also borrow so a lender like a bank for example can also be borrowing from other banks that is a possibility okay let's talk about transaction costs for a minute can you give me an example example of transaction cost tax yes fees very good processing well done time yes because time has a cost all right so all these things yes the time and the money that it takes you to perform a financial transaction there are many examples of these in the markets as you've mentioned the fees that you're paying taxes etc etc by the way market news talking about transaction costs can you make the link with what happened in hong kong what was announced last week haha very good that prey very good very good sri lankan oh you're very good you've been following the market very good okay so paul chan our financial secretary has he announced a increase in stamp duty on stock transactions massive right when you put it in those terms it sounds horrible but it just went from 0.10 percent to 0.13 percent so not so massive after all okay so very low yeah very low really but a little bit increase helps so this is transaction cost okay stamp duty transaction cost all right the other thing is uh so our financial intermediaries they help to reduce transaction costs why shiraz stem taxes money that you pay every time you buy or sell stocks on the hong kong exchange the word comes from a stamp that used to be applied to transactions which no longer stamps so yeah so how come our financial issues intermediaries reduce transaction costs okay i know it's late monday morning blah blah all right so they reduce transaction costs because they develop expertise and they have economies of scale because they do many transactions of the same type the fixed cost involved in the transaction cost can be spread over many transactions so one typical example of that is the cost of the lawyer to draft a loan contract once you have the loan contract you can replicate it and just change the names and the turns so you can spread the cost of the lawyer over many many transactions all right and because that's what financial intermediaries do they have a lot of transaction because the fixed cost can be amortized over many transactions and they can pass that benefit to their customers that's what we call economies of scale that also allows intermediaries to provide additional services like liquidity services like payment services okay so they can provide checking accounts that allows you to pay your bills so probably not many of you still use checkbooks but they used to be a very big form of payments particularly in the united states check payments were the number one form of payments up until about 2010 and then you can also have savings account and different forms of accounts with the bank another benefit that financial intermediaries open to their customers is the process of risk sharing which is actually a fundamental function of financial intermediaries because as you've seen they solve the problem of different risk expectations on both sides by stepping in the middle and taking the risk on the two uh the two sides of the equation so they can create and sell assets with less risk to one party to buy us us with greater risk from the other party they sell a deposit to our friend aryan and they can make a loan to our friend wing yen this is a very important term asset transformation so what do they effectively do they transform the deposit that aryan has made into a loan that they make to win yen which is why we call it as a transformation on both sides of the equation there are different financial contracts on area inside it's a deposit by which aryan is effectively providing funding to the bank on the other side the bank is making a loan to wing in okay so you have two financial contracts you have asset transformation asset transformation is critical and this is how you know if a financial institution is doing financial intermediation or not when a dealer is buying stocks and selling them is not doing asset transformation the asset is the same on both sides it doesn't change but when a bank is making is offering it taking a deposit and making a loan it is performing as a transformation okay so this is what i call the acid test of financial intermediation acid transformation now an additional advantage of financial intermediaries is economies of scope so remember economies of scale is doing many times the same type of transaction so you can amortize the fixed transaction cost economies of scope is once you have this customer base then you can sell them multiple services so this is the multiple products to the customer base part the skill it's the same product to multiple customers the scope is multiple products for the same customer remember we talked about this when we talk about how we grow our business if we're managing a company we want to grow our business organically we want to sell more products to the same customer or acquire more customers for our products this is a two dimensions of organic growth okay so the banks can get economies of scope when they provide multiple services to their existing customers which is in fact because the acquisition cost of these customers has been spread out all right so to illustrate what we talk about quickly before we finish so banks make they collect deposits from all kinds of savers households corporations other financial institutions and they make loans to corporations household and other financial institutions so you have asset transformation if you're an insurance company that's also what they do they collect contractual savings premiums from household corporations other financial institutions and they invest these in capital markets by buying equities and other forms of securities again you have asset transformation okay all right so it's 5 52 which means we run out of time you're free to leave i am hanging around to take any questions that you have thank you i want to ask what's the major role difference between financial intermediaries and financial institutions so financial intermediary is a subsection it's a subpart of financial institution remember this this chart here this okay so you have financial institutions financial intermediaries is one category other financial institutions is another one okay all right chuck funk all right thanks okay oh professor i had a dog yes aryan uh so like in this uh in this slide if you see the other financial institutions also includes investment banks yes i can talk about it about them yet okay i i can see the question you're going to ask me i'm reading your mind okay so you're going to tell me but investment banks they do financial intermediation in some cases yes but the core business of investment banking corporate finance is not financial intermediation and we'll explain that when we go into investment banking so here what i mean is investment banking in the strict sense of investment banking which is corporate finance okay thank you for listening a great question uh professor i have a question sure yeah um so it's about the modified following the business day convention so like um so in my understanding it's that uh it's like it it's flexible so it's it depends on what they state right yeah it depends on two things first of all the day on which payment is made falls on a day which is not a business day as defined in the contract okay if that happens then of course you need to do something then you look at what is a convention if it's modified following business day convention you move the date to the next business day to the following business day okay but if by doing that you change calendar month then you go back to the preceding business day oh oh okay okay i got it now you got it all right yeah right we shall see we shall see right thank you you're welcome okay any other questions uh professor yes could you explain about that economics of skillscope again economies of scope yeah sure economies of scope is when you can sell more products to your existing customers all right so in other words you have a bunch of customers already and you can sell more products to them so what it means is that because you've paid a certain cost to acquire these customers your marketing etc etc if you can sell more products to these customers then you can make more profit and you can amortize your acquisition cost you understand what i'm saying um yeah yeah okay um what about the economies of scale the economies of scale is when you are amortizing the cost of doing a transaction over multiple customers all right so for example where is it yeah all right so imagine that you're starting a bank right and so you're collecting deposits and you want to make loans to make a loan you have to write a contract to do that you have to hire a lawyer to write the contract so the lawyer is going to charge you a fee for that so you pay the lawyer the fee and now you have a contract okay so you can use it for your first loan but then you can use it again and again for other loans because they're all going to be very much the same all you have to change is the name and the rate of interest and things like that so you don't have to pay the lawyer to do the contract over and over and over again because it's going to be the same contract so that cost of the lawyer fee you can amortize it over many contracts that's what we call economies of scale okay okay i see you guys i get it okay good all right okay then bye-bye

okay looks like you don't have any questions yet but uh please do put them up in the chat box or raise your hand if you have any questions i so we're going to be continuing the discussion about financial intermediation and just as a very brief reminder about the very important concept of financial intermediation one of the key ways to determine whether or not a financial institution performs financial intermediation is to identify if there is asset transformation so like in the case of insurance insurance companies collect premiums in the form of contractual savings from investors and then they go and invest those into financial assets for banks they collect deposits from savers and invest them in loans but also portfolios of securities etc so you have asset transformation okay so this is a key way you can distinguish financial intermediaries from other financial institutions all right now financial intermediaries perform many services for the economy they help to monitor costs because as we pointed out since they do a large volume of similar transactions they can amortize the transaction cost and perform economies of scale and they can pass on those savings to their customers they also provide liquidity and lower risk to their customers because as we've seen by stepping in between buyers and sellers investors and issuers they can provide each side what they are looking for in terms of risk return maturity and liquidity we've talked about transaction cost services now this is super important and this is something you have to note and remember maturity intermediation all right so remember the case of a bank the bank collects deposits from savers those deposits tend to be oh did i forget to share my screen all rights rights right sorry people sorry sorry sorry thank you for alerting me oh gosh thank goodness i'm not like this singapore professor that spent the entire lecture on mute and the students couldn't say anything ah so terrible very bad okay so let me thank you thank you and here i am so all hyped about talking to you guys and talking in okay so all right so uh so we've just talked about monitoring costs liquidity and price risk and the economies of scale which means that transaction cost services can transaction costs can be amortized over many uh transactions and uh the savings can be passed to the customers all right so the thing that we need to talk about is maturity intermediation so maturity intermediation in the case particularly of banks they collect deposits from savers and those deposits are typically very short term as a saver you can open a saving account a deposit with your bank and you can take the money out anytime so this is daily liquidity so you can withdraw your money whenever you want to in turn the bank will make loans so those loans are typically medium or long-term loans think about mortgages for example so the financial intermediary the bank in this example is taking the risk of managing this maturity mismatch between assets and liabilities imagine for example if there is one bank let's say it's using bank and yitong is the one depositor and so min is the company that the bank is making a loan to so there's one depositor one deposit and one loan so the deposit that yidong has made is on a savings account so it's got immediate liquidity but the loan that the bank has made to zoom in is three years what is the risk what could happen okay roman uh it could be that um our depositor all of a sudden wants to withdraw the money but the bank doesn't have it yet because the maturity isn't done on the loan that's right so unless the bank has managed this somehow if the depositor wants the money back how are they how's the bank going to give the money back if it's lent all the money to the client right so this if you imagine this very simply this is the risk of maturity intermediation this is a very fundamental bank 101 risk issue and a large part of what we will talk about later when we talk about bank management is how do banks manage the risks arising out of this basic business model okay so very important thing to remember the other one is denomination intermediation so this is more applicable to financially intermediaries like mutual funds unit trusts this kind of financial intermediary so what does this have to do denomination is a term that has several different meanings in this case we talk about the minimum investment size okay so denomination in this particular example talks about the minimum investment size so the the minimum amount of investments that you have to make to participate or the minimum ticket as we would say in financial market okay denomination has other financial meanings that we'll talk about we've already talked about for example it can mean which currency are we using so when i say a bond is denominated in u.s dollars it means it is issued in u.s dollars all right so there's already two definitions of denomination that you have come across so when we say denomination intermediation what does it mean it means that the financial intermediaries that pull together savers investment to then invest them in the financial markets perform a useful function of denomination intermediation why because individually each investor may not have the minimum amount necessary to invest in a particular market for example the bond market okay minimum investments for bond issue tends to be at least ten thousand dollars more often bigger than that the money markets treasury bills commercial paper uh wholesale cds has even bigger denomination minimum of like a hundred thousand dollars so as an individual investor this would be too much for you to invest in a single investment or you might not even have the minimum amount however by pulling together your savings with other investors in what is collective investment schemes in the form of mutual funds or unit trust you invest in the fund and then the fund invests in the market so that gives you access to money markets bond market that you would not be able to invest in simply because of the high denomination minimum okay all right do ask if i'm explaining things too quickly or too not very well all right so other things that financial intermediary do they are basically the banks in particular are the way through which central banks execute monetary policy so they um they effectively are the channels through which the central banks are acting in the economy or at least say where before we had massive changes in how central banks conduct monetary policy but there's still the principal channel now banks are also a way for governments in some countries anyway to direct credit to certain parts of the economy so not everywhere but broadly speaking you have financial intermediaries such as development banks agricultural banks that are designed to channel credit to important sectors of the economy in economies like mainland china which is a bit more dirigist then you have more [Music] influence of the government on the banks to tell them to provide credit to certain sectors of the economy now this term i love it because on the surface it looks really complicated but in reality it's very simple so what is this about intergenerational wealth transfer maybe it's like the inheritance that is passed down from parents to their children very good yeah so you understand so when we don't know we think about what it means in english and we read backwards right so it's transfer of wealth between generations so as physics chai said it's passing wealth to the next generation so financial intermediaries can help with that and in particular life insurance companies is a way to transmit wealth to the next generation you're right mean q very good very good very good post in the chat gosh i love this class all right payment services of course banks perform a lot of payment services we've seen that they can offer liquidity services to their customers as well as the opportunity to save and to borrow so in other words financial intermediaries perform a number of very useful functions in the economy all right benson euron iprs and we go straight into the first question is a mutual fund a financial intermediary so so so oh okay most of you got the correct answer so mutual fund they collect savings from investors so you buy a share in the mutual fund to invest in it and then the mutual fund invests in different kinds of financial instruments so there is asset transformation so the correct answer is yes next question oh benson where are we i think you're doing the same as me benson you're not sharing the screen so [Music] oh dear oh dear okay um so stock brokers is a broker okay so they connect two parties they don't buy and sell stuff so they don't do financial intimidation they are not financial intermediaries last question how do dealers make money um uh [Music] okay so dealers they buy and sell assets they make money from the price difference so the difference between the bid and the offer okay so yes i will go back on to uh over the the concept because clearly some of you did not grasp the concept of financial intimidation can you see my screen can you see the slides yes good okay so uh let me go back and let's go back on some of the the key concept okay so first thing is that we distinguish in financial institutions those that perform financial intermediation which include both financial institutions that collect deposits and other types of financial intermediaries and then we have other financial institutions that do not perform financial intermediation now i know this is confusing because in english intermediation is just connecting two parties right but in finance the term financial intermediation has a very specific meaning which is why we are going through this now so you can see here there are financial institutions that do not perform financial intermediation at least not in that particular function okay so they do not perform financial intimidation brokers dealers investment banks we will see that in the narrow sense of corporate finance which is the core function of investment banking there is no no financial intermediation okay so that's the first thing then remember financial intermediaries they stand in the middle okay so the flow of money stops and then moves so here we have what we call asset inter m asset transformation all right so direct finance is where one party finds the other with help with help from brokers with dealers investment banks etc in indirect finance there is a clear stop in the middle imagine it's a wall okay so you have one asset here and then on the other side you have another asset okay so you have financial intermediation because you have asset transformation okay why do we have that because savers so entities which have extra money to invest okay they have money to invest they have different requirements in terms of or is it where's my thing they have very different requirements okay they have they want no risk some return very high liquidity while these guys there are risky prepositions they want the money for longer they don't want to you know they'll pay the return necessary to get the money so that's why you have the financial intermediaries stepping in the middle okay so financial intermediation allows these lenders these investors these people with money to put their money in the financial intermediary and they get what they want in terms of risk return maturity and liquidity then the intermediary provides the borrowers the issuers with the money they need for their projects they charge them a return commensurate with the risk and very often the maturity is longer okay so it's really important to understand the difference between financial intermediaries and other financial institutions financial intermediaries provide financial intermediation that always involves asset transformation so you have one type of financial asset on one side another one on the other side it may be the same type but it's not the same asset for example in our mutual funds okay where's my mutual fund i didn't put the example but anyway imagine here if it's a mutual fund okay okay imagine it's a mutual fund you have investors okay they put their money in the mutual fund and in exchange they get a share in the mutual fund on the other side the mutual fund will invest by buying different kind of securities okay so they may invest for examples in shares of these different companies they may invest in so equity securities debt securities it could even be real estate or commodities or anything else okay so it could be that it could be equity etc all right so we have come back you we have asset transformation i'm sorry my handwriting with the mouse is awful i write like the three-year-old with the most okay so you have asset transformation okay so as an investor in a mutual fund you are putting your money in the fund you get a share in the mutual fund the fund then invests in all kinds of things and it could be shares but they're not shares in the mutual fund their shares in other companies so you have asset transformation all right so this is very very very very important to understand now in this case we can also talk about denomination in in intermediation because here to invest in a mutual fund the minimum amount is tends to be quite low we're talking maybe one thousand dollars something like that but because of that you can invest in a money market mutual fund that invests in money markets where the minimum investment would be like half a million bucks okay all right so let's go back to brokers and dealers i can see some of you are still struggling with that okay so remember in the topology we distinguished financial institutions that are not financial intermediaries they do not perform financial intermediation and we talk about brokers dealers investment banks and custodians now and trustees brokers brokers act on behalf of their client okay there are agents they connect to people they don't buy or sell anything for their own account okay they charge a commission okay the role of the brokers elliot is to connect you with a stock exchange or with another party they you pay them a commission for that work they execute your orders they don't buy the shares for their own account they buy it for you okay they do not perform financial intermediation okay they do not take positions they do not carry inventory if you have difficulty to figure it out with stock brokers then think about it with the real estate broker it's the same idea these people you see outside new new developments with you know they've stopped the car and you know corner you say you want to buy an apartment they don't buy the apartment and sell it to you they represent the developer so they are here to put you in contact with the person who wants to sell the apartment same thing insurance broker same thing the insurance broker is going to try and connect you with the right insurance company same thing they do not buy and sell the policy you buy the policy from the insurance company the insurance broker gets a fee a commission for the service okay so shiraz asks a very good question is the only purpose of getting a broker to save time so what do you think anybody convenience yes it facilitates transactions yes yes yes you might not know where to find they might negotiate for you very good avoid fraud get larger pool of buyers and sellers better pricing sometimes it's the only avenue less risk that's debatable that's debatable now let me complicate things a little bit a little bit more for you so immediately you can think of the obvious reasons why because you might not know the other players you might not know who is going to be willing to sell something that you're interested in buying and to find out would take may not be possible or would take time and maybe costs info so remember we have to pay the broker right so there's a commission involved there's a cost involved so broadly speaking you want to use a broker when the time and effort it takes you to find the other party is higher than the cost of the broker right makes sense but there's more than that in markets where everybody knows everybody for example for an exchange all the big players know each other and yet yet they use what we call inter-dealer brokers why so here's the other reason why you might want to use a broker yeah fx market it's a pretty transparent market very good area world and very very good privacy you don't want to disclose that you are interested in buying or selling something because if people know it will change the price remember okay so in a market like foreign exchange spot dealing the dealers they all know each other but they use brokers to cloak their intentions let's think of a spy you know advancing in disguise same thing socialize that was an excellent question which allowed me to talk a bit more about why we use brokers okay so there are many many reasons why we use brokers it's very important you understand the difference between brokers and dealers and i'm talking about the brokerage function versus the dealer function and it's confusing because we will see when we talk about investment banking that an investment bank may have brokerage function dealership function corporate finance function commercial banking function asset management function custodian functions etc so an institution like goldman sachs some parts of the business is financial intermediation and some parts are not okay so the this is something i need to hammer into you you need to distinguish the function from the institution okay the function of brokerage has nothing to do with financial intimidation okay it's connecting two parties and charging a fee or commission for the service the dealer function okay the dealer it also connecting parties but in a very different manner because they act for their own account as principle okay they buy and sell stuff all right so you have dealers on the floor of the new york stock exchange okay that's what they do they buy and sell shares all the time they're market makers right so this is very very very important you need to be able to distinguish what's a broker and what is a dealer the dealer they act in the market with their own balance sheet they buy and sell assets however however it is not financial intermediation because the asset is the same they buy the asset and they sell it it's the same asset there is no asset transformation all right are we clear it's really really important if i have to go back again and again once you get the the logic of it then everything falls from it that's why i spend a lot of time at the beginning and then as the course moves forward i accelerate all right but we need to lay the foundations very very strongly so you you can see the business model and understand the functions okay all right so what have we talked about in this section let me get back to where i was initially okay okay so somebody also asked in the spot non-financially intermediaries aryan are financial institutions that do not perform financial intermediation okay somebody had asked me something oh maturity intermediation okay maybe i go back to that all right so maturity intermediation think of the bank okay let me go back to the bank okay so the best example of maturity intermediation is a bank because the deposits tend to be very short term oh man this is even worse okay when you put money in the bank you open a bank deposit account depending on the type of deposits that you do if you do saving deposit you can get your money back in any time okay if you do a fixed term deposit of course you cannot get back the money until the end of the term but they're generally very short term okay on the other hand for loans they can be medium or long term okay when we make a loan to a company to finance their the construction of a new plant it will be several years it will be five years seven years when you lend money to people to buy a house with a mortgage the mortgage is very long it can be 10 years 20 years 30 years right so as i was saying what the bank does is transform short into medium and long term so that is why we call it maturity intermediation maturity has to do with how long the financial instrument is maturity term tenor is all the same thing okay so maturity intermediation all right now i'm not saying that all banks only have short-term deposits and long-term asset hopefully not because then they run a huge risk of a mismatch and we will explain how we manage this kind yay creation how we manage that risk when we talk about bank management all right this is answer the question okay i'm willing to spend as much time as necessary so everybody's on board right okay so i'll have to redo all my slides all right so this is where we were all right so a mutual fund is a financial intermediary they collect savings from investors by selling shares in the mutual fund they invest those savings into different financial instruments which can be shares or bonds or real estate or something else so there is asset transformation a stock broker is not a financial intermediary they do not perform financial intermediation there is no asset transformation in fact the brokers don't buy and sell assets they just connect parties together dealers do make money by buying and selling assets and hopefully they make money by selling them at a higher price and they bought it but they do not perform financial intimidation all right so in this foundational section we discussed financial intermediation we've learned to distinguish financial intermediaries from non-financial intermediaries financial intermediaries are those financial institutions that perform financial intermediation which always involves asset transformation non-financial intermediaries do not perform financial intimidation and we've learned about the key services that were provided by financial intermediaries in the broader economy any questions nope all right so the last part of this section is discussing something that is very very important in finance and that is to and that is to save conflicts of interest the conflicts of interest are very important and they exist because structurally as you have seen financial institution are in the middle they help to connect parties or they stand in the middle and perform financial intermediation so they have clients on both sides so inevitably we will be faced with conflicts of interest it's intrinsic in the nature of finance all right so remember financial intermediaries provide multiple services to their clients so they can realize economies of scope remember the two dimensions scale it's when you do the same transaction with many different customers and scope is when you offer different products to the same customer okay but you might have conflicts of interest so what is a conflict of interest it's when one party has incentives to act in its own interest rather than the interest of the other party so a bank may have an incentive to act in the interest of the bank rather than the interest of their customer by nature conflicts of interest can create incentives to provide false or misleading information in order to do the deals that you want to do and why do we care because as these incentives arise and you provide false or misleading information you increase asymmetric information asymmetric information is of course when one party has more information than the other one okay so this is very very important when you stand between different parties sometimes you have incentives to act more in favor of one customer than the other and or in your own interest rather than the interest of your customers so this is intrinsic in the nature of finance industry now we will see that we have different ways of addressing the problem now there have been many many many cases of conflicts of interest i will walk you through the first two which have to do with investment banking and auditing and accounting i will briefly mention credit rating agencies but there are so so many examples so does anybody know which financial scandal is currently all over the papers all over the world and no i'm not talking about gamestop although it's rebounded but there is a financial scandal which is just amazing i love it it's fantastic i'm going to write about it jp morgan in which way i mean they are involved actually into this one ey they've been involved in a number of scandals but not the one that's all over the papers at the moment david wow you must know about scandals i'm not aware of davey who's davey hmm okay i'll type the name because it's very it's a company that's been all over the place yes yes to tao very good yes indeed grinsell okay green cell capital has just collapsed and it's a fantastic story it's an amazing story i love it it has everything i've ever talked about with my classes everything circular flows of money conflicts of interest doubtful accounting um sleepy regulators um conflicts of interest i mean like gazillion uh greasy politicians uh mysterious steel magnet from india and it's right to riches story wonderful so to tell thank you thank you for sharing that if you have time read stuff about green cell it is a fabulous story it has every single ingredient i can think of so uh green seal is yet one more example of conflicts of interest it involves uh credit swiss funds uh gam funds it involves soft bank and vision fund it involves british politicians it's fantastic it's a great story anyway so every day you have new examples of conflicts of interest and some of you have mentioned some of the big four or jp morgan jp morgan's involved because they're trying to buy some of the pieces uh left over from from the grinsell stuff so it's fantastic anyway um so we're going to be talking about the first two in detail and the third one about credit rating agencies is very much similar in nature with with the accounting problems so um briefly what can we do when we found ourselves in a situation of conflict of interest so the different approaches the first approach the libertarian approach the um free market approach is to say leave it to the market because you know what you can mess with the client once mess with the client twice third time you don't have a client anymore so the market will take care of it that's one approach second approach completely opposite to say okay we'll we'll make rules we regulate okay we will impose obligations of standards of disclosure impose uh more transparency so we decrease information asymmetry so everybody knows what's going on and can make very informed decisions and correlated with that so we put regulations but we also make sure that the regulations are implemented by having supervisory oversight so we are monitoring and addressing the situation now another way you can deal with conflicts of interest a very popular way is to try and avoid them in the first place to try to avoid a situation where somebody or a function puts it has dual responsibilities okay so for example in the case of nucleasin and bearings or the case of many rogue trader scandals one of the ways to try and avoid it is to make sure that the trader the dealer does not control the operations so we separate the front office where transactions take place and the back office where transactions are executed okay so separation of functions in credit rating agencies you separate the rating process from the consulting process or advisory function in auditing firms you separate the auditing function from the consulting function that way you don't end up with conflicts of interest in the first place socialization of information production is a complicated sentence to say well we don't trust private entities with the production of information so we do it at the government level so we create let's say a credit rating agency which is a government entity okay so we trust the government rather than the private sector to provide independent clear accessible information in a way that is what centralized stock exchange information can do when they're owned by the government um sorry so you have like five big ways to address conflicts of interest so now let me walk you through the first situation which resulted in a regulatory and legislative response before i talk about that let me bring into the discussion the notion of regulatory pendulum pendulum goes like this right so you have a curve so what happens when a crisis happens okay something bad happens the first reaction will be who is responsible okay then you have a response from the government okay and the parliament this is going to be a regulatory and legislative response okay so we regulate we put rules in place over time things get deregulated and things ease up and then another crisis happens so we go back and we regulate okay and this is how we go so this is the regulatory pendulum kind of thing so sabin oxley act 2002 so it's called socks or starbucks it is the regulatory reaction to a series of corporate scandals in the early 2000s culminating with the collapse of a big company that you may have heard about especially since texas has been in the news again because of the power structure in interestingly it ties with this so sabin oxley was the regulatory reaction to massive corporate scandals in the united states and in particular can anybody tell me the name of the company sort of which company collapsed no lehman was later that was 10 years later yes yes yes yes yes and run very good the collapse of enron so enron started off as a very boring utility company but then senior management having been to mckinsey decided to change the business model and to become an energy trader okay and it happened while the energy utility electricity sector in texas in california was deregulated which has had the consequences we've seen now today in texas with the big wave of cold you know the snowstorms and everything and the blackout part of the reasons for that goes back to enron and the liberalization of the energy markets electricity market in texas which is quite amazing anyway so enron collapsed they had manipulated the financial statements and they've been doing a lot of very complicated financial engineering transactions that did not show up on their balance sheet because they were off balance sheet and one had been advised thank you calvin i don't know is it calvin or george i'm not sure which one i should use um they've been advised by a firm called arthur anderson which was at the time part of the big five because there were five big accounting firms arthur anderson was their auditor but they were also providing financial consulting advice to the senior management of enron and in particular advising the cfo on how to disclose the financial transaction in such a way that the auditing guys of the same firm would give a good auditing statement in the financial report so what happened well enron went bust the employees lost their jobs and their pensions because the pensions were invested in and run stock arthur anderson went bust okay the ceo and cfo ended up in jail okay so there was like a huge massive scandal of course there was a regulatory reaction and congress passed this massive piece of legislation called sovereign oxley sabinoxley is huge and has different parts of it so i'm going to point out some specific aspects that you need to know why you need to know them because sabin oxley is still in effect and has profound implications in terms of corporate governance so what are the major components the first is to set up a public company accounting oversight board so remember the approach is to remedying conflicts of interest you know a supervisory oversight right so now we want to make sure that there is a regulator for the accounting firms second separation of functions okay public accounting firms are prohibited from engaging in non-accounting services to clients they are auditing so if you auditing a firm you cannot provide consulting services and vice versa separation of functions members of the board's audit committee must be independent so this is one of the fundamental terms of corporate modern corporate governance is that members of the board have to include non-exec non-executive independent directors okay and particularly as far as the audit committee is involved those members have to be independent that means not connected to the company in any way requires the reporting of off-balance sheet activities why because they had not disclosed on the balance sheet there are activities there were some notes to the financial statements but you had to be really really good at looking at that to find it so now we're saying oh boy stuff that you're doing off balance sheet can have really really really bad implications so you should report it request additional funding for the sec why because in order to investigate problems the sec needs to have people if you only have one person in charge of investigating 500 different companies this is not going to happen right so funding for the regulator and the stick if you do bad stuff you'll end up in jail so charges for white-collar crime and obstruction of justice were increased part of that was because the people arthur and anderson were happily destroying documents as soon as they found out that they were going to be investigating so all the paperwork was going going through shredders just as the government investigators were coming down on arthur anderson offices so clearly that was not good so you can see how there was multiple responses to the conflicts of interest that had arisen in uh the case of enron and other corporate scandal now one of the parts of the sovereign oxley act that had a very profound implication on financial markets was the section 404 so what what is section 404 it basically requires all company that are under us uh jurisdiction to create an internal control report that basically means you have to document your corporate governance process and that report has to be certified by the auditors and personally signed off on by two senior executives of the firm why is that important because it creates personal liability for the senior executives it requires auditor to certify that the firm has processes in place to address possible conflicts of interest problems now this was all good and well but when it came out there was a very strong reaction about it because people were saying well this is very expensive for a smaller company to have to go through all your processes and documenting them and getting them certified by the auditors it's time consuming and it's expensive and on top of it because the auditors had gotten burned seriously with the whole collapse of arthur anderson of course they're going to spend time on it and they're going to charge you more for it so there was a strong reaction from some parts of the financial markets in the united states saying that section 404 of sabin oxley was disproportionate was too expensive compliant costs were too high and it would drive firms away from the u.s market to more accommodating jurisdictions like say hong kong and of course this did not really happen and um sarban oxley is now considered as the foundation of modern corporate governance okay so what do you need to know about sober knoxley very important stuff so i'll highlight it for you you need to know about section 404 okay you need to know about the pcaob the separation of functions and the independent members okay so you need to know what is sabino oxley what was the cause of the scandal okay and what sector does it have to do which is accounting and auditing okay by the way they have mean many other scandals in the very recent past involving auditing issues such as wirecard lacking coffee [Music] you name it any questions on that one before i move on to the next one so remember if you're a company that wants to list in the u.s you have to comply with sarban oxley all right so no matter where you're from if you intend to list in the united states you have to comply with sovereign oxley all right the second point is another scandal at around the same time that had to do with investment banking so why it happened anybody knows anybody knows what happens no okay well at the time the new york attorney general was a guy named elliot spitzer and what he did was investigate u.s investment banks in the aftermath of the dot-com boom and bust okay so similar to what we've seen in recent months the market the stock market in the u.n went crazy with huge valuation for internet companies so this was the internet or also called the dot-com boom and bust of the early 2000s so lots of companies went public with crazy valuations similar to what we've seen in in the last year or so and investment banks analysts were of course writing very glowing recommendations to buy recommendations on these companies but privately they were saying this is really crap sorry forgive my language so they were pitching to investors to invest in these companies while they themselves knew these companies or they believe these companies were really not that good they were not good investments why were they doing that you asked me well you haven't asked me but you should so why were they pitching in glowing terms companies they knew perfectly well we're not good roman tell me why because i think if they are an underwriter for example and they help with the ipo then they get a percent of the proceeds of the ipo so if it's valued high then they get more money maybe so yeah not a percentage of the ipo per search but they get a bonus so what what was happening okay so analysts the research part of investment banking they are a cost center right so they produce and those reports are distributed to um investors and the idea is that the investors will then call the brokerage part of the bank to buy these ipos that the bank is doing but it's very difficult why do i say to pro it's a cost center because the cost of running research is not directly linked to specific results and so it's really hard to allocate that cost so what the banks had found was a way to tie the performance of research analysts to the performance of the investment banking division that is the people who went out to companies and tried to convince them to do an ipo with the bank one of the ways you do that is by promising research coverage that hopefully is going to be positive so if your research analyst and the bank is going out to talk to cat.com and convince the company to do an ipo they want you the research analyst to write a positive report because if you say cad.com is really a bad company the cad.com ceo is not going to give your bank the mandate to go for an ipo and they're going to hate you a lot so as a research analyst it's not a good idea to write a negative report you will not have a long career with the bank on the other hand if you write a glowing report to say how cat.com is everything a cat lover would want then your boss is going to be happy the investment banking guy is going to be happy the ceo will love you and you might actually even get a nice bonus at the end of the year now this is absolutely morally wrong okay why because the function of research is to provide independent advice to investors okay and investors use the information from research analysts to make investment decision so if you produce research that is patently biased then you are creating the rest that investors will lose money which is of course what happened when the dot-com bubble exploded causing massive losses and then this being the united states the first thing they do is to sue you they call their lawyer that's very u.s call the lawyer and sue whoever could possibly be responsible okay so then of course the new york attorney general and did an investigation and he found a lot of really naughty stuff going on so he punished the banks they reached an agreement for 10 years it involved paying 1.4 billion dollars in fine so nowadays it looks like petty cash at the time 20 years ago it was not petty cash it was actually quite a bit of money and here we see something we're familiar with you must separate underwriting and research this is what is called now regulation fair disclosure reg fd okay so this is separation of function separate underwriting that is the investment banking function from the research activity and then there was a very naughty practice called spinning so spinning was the practice that investment banks had of offering shares in an ipo to their best customers first so that the best customers could benefit from the pop so when the ipo takes place generally the price goes up that is called the pop and then those preferred customers could then sell the shares at a very nice profit which was a way for the investment bank to give them back in exchange of other investment banking business so that is basically banned uh the firms must make public the analyst recommendations and target prices that means when a research analyst produces a report it has to be disclosed to everybody at the same time okay so you cannot give the information to your preferred clients first because that would be creating an unfair advantage and brokerage firms are required to obtain third party independent research for their clients okay so that is to avoid having buyers research reaching their customers and influencing their decisions okay so what you need to know about the global legal settlement of 2002 is that it was a case of conflict interest in investment banking okay and it has included separation of functions and we separate investment bank and research and a very important reg d a reg fair disclosure reg fd sorry reg fd regulation fair disclosure which means that we have to make the analyst report available to everybody at the same time any questions all right okay just double checking all right so we've talked about how conflicts of interest give rise to asymmetric information because we have an incentive to create false or misleading information to influence the way our clients are going to behave now asymmetric information is a recurring issue throughout the financial industry there are two aspects in particular that we need to talk about adverse selection which is asymmetric information before a transaction takes place and moral hazard which arises from a transaction so asymmetric information okay two aspects before a contract takes place and after the contract takes place examples so for adverse selection this is asymmetric information because one party has more information than the other classic example in banking you as an entrepreneur know more about your business than the bank does we call that the lemon problem okay so those who have more risk have more incentive to try and borrow money from the bank of course the bank is very aware of the problem okay they know that the borrowers that are more risky will tend to come and ask for the loan so they will take precautions similarly in insurance you know more about your health than the insurance company does okay so you have incentives not to tell the insurance company that you're a lifelong smoker when you sign up for health insurance for moral hazard this is the incentive you have to behave in a different manner once you've signed the contract for example you've just signed a motorbike insurance with your insurance company you know you're covered against any damages that you might incur or might cause to other people you might have an incentive to drive faster and more recklessly okay so these are two very important aspects of asymmetric information that exists throughout the financial industry both before you make a choice or after you sign the contract so examples of moral hazard during the global financial crisis many governments bailed out the banks in the system that creates moral hazard because now the bank's management know if something bad happens the government will bail me out so why not take even more risk rating agencies have faced scrutiny as a result of conflict of interest why because they were advising investment banks on how to structure products in order to get the highest possible rating in the case of green cell we see the same problem again the rating agencies gave a high rating to the money market products of grinsell because of the involvement of an insurance company government bailouts so during the global financial crisis the governments bailed out a number of banks and where did the money go to pay our bonuses insider trading you have asymmetric information and the conflict of interest because you want to act for your own benefit rather than for your customers benefit and so on and so forth right so we coming to the end of the class it's 1 22. feel free to leave it's two minutes past the time there's still a couple of things we need to talk about on monday and then we will start diving into the commercial banking part any questions please let me know otherwise have a great weekend bye bye oh professor had a doubt yeah hey i win uh is it was the global legal settlement uh targeted towards investment banks yeah okay thank you any other questions no more questions okay then that's the end of today i will see you all on monday bye have a great weekend people

okay time to start people all right so we left off we were talking about uh the asymmetric information we talked about conflicts of interest sorry i'm on the wrong page we talked about conflicts of interest we've talked about current issues how we talked about moral hazard which is asymmetric information that arises after you enter into contract and we explain how central banks by bailing out the banks are creating okay uh wing yen this slide is not updated benson can we check uh benson can you check canvas to make sure the lecture slides are there this one and the next one okay okay let me check it okay thanks because win yen says that this lesson there's only four notes on canvas okay let me check okay thanks so thanks wignian for uh telling us all right so uh coming back my central banks yes by bailing out banks during the global financial crisis the central banks have effectively created moral hazard because the bank's management know that something going wrong then the central banks were or the government will bail them out which is effectively encouraging them to take more risk in the hope of generating more returns then you have the situation with rating agencies so during the global financial crisis there was a big scandal about rating agencies uh because a lot of the mortgage-backed securities uh cds uh cdc pds so constant proposing that obligation pdos were uh downgraded spectacularly from aaa to non-investment grade and uh the analysis of what has happened showed that rating agencies were providing consulting services to the investment banks so that they would design products that would get the highest possible rating from the rating part of the rating agencies so again we had a typical conflict of interest that has forced separation of functions and regulations of the rating agencies another conflict of interest was that government bailouts were used to pay bonuses during the global financial crisis which was a huge outcry insider trading it's a recurrent issue we have conflicts of interest arising when you are you have access to non-public information and that you use it for your own personal benefit and so on and so forth so we've talked about this big issue that underlies the financial industry and some of the methods that we can use to mitigate or control conflict of interest before they degenerate um so we have a video that has been shared by one of the groups there we go in associations board members or committee members may find themselves in a conflict of interest this arises when the interest of a board member or committee member has the potential to be at odds with the interests of the association that is the member could personally benefit from the board's decision board members are responsible for making decisions that benefit the association that's their fiduciary duty that's why they must be cautious of any benefit that outside persons other organizations or they themselves might gain from those decisions failure to manage conflict of interest could mean the association's members stakeholders and the public could lose their confidence in the association undeclared conflicts can put the association at risk there are three different types of conflict of interest to manage direct conflict of interest is when a board member or committee member stands to gain or lose money or goods personally because of a decision made by the association in direct conflict of interest is when the conflict is one step removed from a board member or committee member and the loss or gain would affect family friends or colleagues a perceived conflict of interest is when someone from outside perceives that a board member or committee member can get the association to make a decision that directly or indirectly benefits that board member or committee member it's the responsibility of each board member or committee member to declare any type of conflict of interest real or perceived and to remove themselves from all decision making related to it if a member is uncertain if a conflict of interest exists they should discuss it with the association's president or board chair once a conflict of interest is declared the board member or committee member should excuse themselves from the discussion by leaving the room and not voting on the issue this would be reflected in the meeting minutes associations should have a conflict of interest policy which outlines the process for declaring a conflict and procedures for dealing with it ideally board members and committee members would be required to declare in writing that they'll adhere to it also board members and committee members should review it regularly to ensure that they're acting in accordance with the requirements and spirit of the policy conflict of interest puts an association at risk of not acting in the best interests of the association and its members directors should declare all real and perceived conflicts and excuse themselves from decision making all right so this is a video that is applicable conflicts of interest are applicable whenever you are on the board of a company or an association and basically in professional life you might come across conflicts of interest so the good well-governed companies will have codes of conduct and you will you might have to declare conflicts of interest if you come across any the group also submitted an article that talks about what happened back in 2019 with a particular asset management company that had uh internal control failures and regulatory breaches and the uh illegal short selling orders and various other forms of non-compliance so the sfc investigated and published some reprimand and some fines for the company and the people in that company so these are some good examples of conflicts of interest now let's talk about whether you have understood the key points about this part of the lecture and of course to do that uh where benson will start the iprs oh no i'll sorry this one no i always yeah so first question what is moral hazard just respond in the chat raise your hand okay roman what is moral hazard so moral hazard is the incentive to act differently from what you said you're gonna act before the transaction happened right so it's but you have to connect it to asymmetric information so this is asymmetric information after we enter into the contract okay very good what is adverse selection aryan can you take that one what is adverse selection uh so if any stakeholder has access to information that is not publicly available or extra information before entering into a contract and changes the decision or acts based on that asymmetric information then that would be adverse selection right adverse selection is asymmetric information before we enter into a contract very good all right the global legal settlement of 2002 addressed conflicts of interest in which type of financial institution very good aryan and roman good investment banking very good jung day all of you good excellent okay so for this the part that we've just finished the things that you need to understand and remember is understanding conflicts of interest the spots about sovereign oxlay and the legal settlement of 2002 and the key ways to remedy conflicts of interest all right any questions no okay then i will take that one away close this one and then i'm going to switch to the next part all right so now we're going to be talking about commercial bags so we have finished the general foundation so we finish the overview with the discussion about the classification what are financial intermediaries and what are not we talked about conflicts of interest now we're going to do a deep dive into different types of financial institution so i broadly divided it between the cell side this is terminology we use in financial market so the sell side where we're going to talk about commercial and investment banking and then we'll move to the buy side where we'll talk about traditional institutional investors which means insurance companies pension and retirement funds and fund management and then we'll talk about alternative investors which are hedge funds private equity and sovereign wealth funds all right so let's start with a chat about what are commercial banks so we've just seen in the past section that banks are financial intermediaries they perform asset transformation they on one hand collect money from savers in the form of deposits and then on the other side they lend that money or invest that money by making loans or investments in different types of financial assets so there clearly is asset transformation so the first thing to remember about banks is that they are financial intermediaries they perform financial intermediation all right now remember the big typology so we had financial institutions then we separate financial intermediaries from other financial institutions that do not perform financial intimidation within financial intermediaries we separated those that collect deposit depository institutions from those that do not and within depository institutions there is a category of commercial banks so on this picture i have shown you the three major business areas that commercial banks typically have the terminology may change from one bank to another but broadly speaking big commercial banks engaged in on the one hand retail and consumer banking which typically includes retail banking consumer finance credit cards and various payment instruments on the other hand they engaged in what they call either wholesale banking or corporate banking where they typically have a corporate and investment banking part and then trading treasury and markets the names change depending on the institution the business model basically stays the same and then most of them also have private banking wealth management and possibly also asset management so three very different business models not all banks have all of them some of them will be the smaller banks will only do retail banking some very large commercial banks may engage in all of them in their home territory but abroad overseas they will only have one or maybe two for example if you look at the big french banks like bnp paribas uh south gen crediagrical at home in france they do all this and more but in hong kong they don't have the retail and consumer banking part okay so the bnp paribas has the commercial banking investment banking part and the asset management private banking part similar for crediagrical although they don't have private banking they have asset management okay so you have different strategies depending on the market where you are operating but broadly speaking when you look at large commercial banks this is what you will see all right so i'm going to send you in breakout rooms so that you can brainstorm about the business of commercial banking so i want you to tell me what's the difference between retail banking and wholesale banking who are some of the competitors what kind of products do they offer so i'm going to send you into breakout rooms for about 10 minutes maybe 12 there 12 breakout rooms are you ready yeah let's go do like all right i have a few people who have not joined their breakout room here yunju okay who's not chang day what's going on with you um professor i have two accounts in the um zoom meeting so i got my pc into the breakout room but not the phone otherwise i will be joining two breakout rooms oh okay okay okay okay i understand all right chi-ho what's going on chi-ho hello i think chi-ho has turned on this uh camera but is not actually attending anything so so so you so so so so so so so so so yes strength day oops i'm sorry i i i missed the bottom um all right so very soon everybody should be back into the main room here we go all right so let's start the debriefing process there was a lot to discuss so let's start with room one we had shiraz nothing oh ching chuk fung man hey aryan do you want to tell me what you talked about who's going to raise a hand and talk anybody okay nothing yeah maybe i can do it so as for question one we discussed that um [Music] the commercial banks are usually over the services of um depository and also lending and also some kind of financial services like um credit cards yeah lending as well yeah and so on yeah and there uh who are the competitors of banks um we identified there are several like some financial instruments some companies which provide financial instruments or securities because there are some kind of um substitutes of deposits in the bank coins for example and then uh yeah and also like futures and so on um also there are some other lenders or creditors in the market they they are providing some kind of like fast um landing service within 24 hours and they're highly accessible which doesn't even require you to show like id cards on the kind of thing and they are also kind of one of the competitors of the banks because they're providing similar functions yeah my good may sound raising hands as well so maybe i just stop here okay uh so who was in the same group aryan go ahead uh yeah i guess i'll just add on to some of the points uh she made uh so for the products and services uh there are expanded services also provided by commercial banks such as uh maybe uh private banking or retirement planning or other wealth management services and uh certificates of deposits etc so there are many products of that sort and adding on to the discussion we had regarding the competitors we also spoke uh regarding cryptocurrencies as one of our team members brought it up as it's a substitute for transactions in uh that whole arena of retail banking and uh yeah for the for the business model difference between retail banks and wholesale banks uh i guess one big difference is uh who they cater to and that a retail banks cater to individual investors and retail investors and uh the wholesale banks have services towards corporate bodies or large companies and their source of revenue is mostly from interests and fees uh they get from the services they provide and uh the financial volume of transactions is also a bit higher than the retail banking size side because of the the clients they cater to very good and then we have uh taxpayer yeah i just want to add some points on the products and services that are offered uh by the commercial blanks to their clients that includes the currency exchange part you can go to the banks view currency exchange and some of the banks also offer insurances for their clients like hsbc insurance something like that for example and they also do a mortgage stock trading and transfer services uh with uh domestically or internationally that's the banks that currently uh is doing and and one of the points that we've talked we've discussed with my group mays in the bank competitors is the fintech companies nowadays for example paypal or square uh you know people are now you know uh really one of faster payment services and the banks are just too slow to do a transfer or if you're going to if they are going to do the international transfer they're going to going to use swift which costs money and time so uh it will disrupt bank's ecosystem on transferring assets from one country to another country so uh which is a very hot topic right now it's a very huge competitors yeah that's what i want to add very good checkpoint yeah just a pointer add on the competitors on the of the banks yeah for example there are now many some lending online platforms which is suited to the public such as the p2p so that lenders do not have to um to lend money to can can they monitor others directly instead of with the process with the banks very good very good uh kindly lower your hand once you've spoken so i don't get confused who's still waiting to speak thank you that was very very good contributions uh okay in room two we had theo waihong chu tao go ahead i think the business model of the retail banking is more related to interest rate uh by lending their money to the customers and also they may invest invest the invest in what the customer deposited to their bank by using the wholesale banking and lend this money to the corporates or the institutions i think however the horse's banking is different in the business business model in that they are more concentrated on the brokerage services okay all right anybody else yes i mean and now you still have your hand up did you want to add something yeah i want to add something um especially in china there the implement platform like the early page they also provide financial service and so far i know they encourage their users to deposit money and they offer quite a quite high interest rate if you deposit them they will ultimately um help you to buy in funds yeah this is really interesting what's going on with unfinancial alipay and all these guys so we'll talk about that thank you yes then uh all right um three we had ju ming mantic my new hollis swan soy wing song i have some tactic twice oh no sunghak suntak now windy and emmanuel so who wants to talk come on people you must have talked about something for 10 minutes and for wholesale banking we have discussed that and that the scale of hotel banking is larger and provide by merchants banks to larger scales business organ organizations and even maybe for government institutions yes very good skills is much bigger and for the retail banking is usually giving loans to individuals like windows and orphans very good okay well done um i think i have something to add for uh uh wholesale banking they would have more branches spread out geographically more spread out because the individuals are also more spread out whereas their corporate offices aren't as spread out very good very good anything else from women three okay if not we move on to room four and i appreciate you probably discuss some of the things that your classmates have mentioned okay no problem you can say something about what you've discussed uh room four we have sidney shang yuan cyrus june xiumin jian then chuck him we knew we you and yasmine huh yasmin oh it's not the same yes mean is it i get people with the same name it's very confusing and have naying in room four and oh it was nothing people you're confusing me endlessly okay so who wants to talk so yes means already chair the bed but anybody wants to share for room for see nietzsche and jung cyrus june xiumin jen fang chuck him ring you and yes finn uh i think in the retail uh bank sometimes they will provide some service that uh help you to know more information about finance very good that is true anything else i'm gonna add one about the competitors of the bank since um because painting services is like one of their most used services but it's being replaced by a lot of companies like in starbucks they have their own loyalty cards so they weren't ready to withdraw money very good very good well done very good excellent yes one scene anybody else okay let's move to room five then we have jengdae ching yi sir hint why how man calvin george toho go ahead um for uh what what retail banks do uh i think they check they does the checking and saving accounts mortgages personal loans credit card services and um most importantly things like a certificate of deposit basically retail banks does those kind of individual and smaller business services and for wholesale banks it does service to um larger businesses like corporations and probably other banks and um government and for competitors i have something to add on the online online companies like uh in china alipay and wechat they have been very popular recently and i believe there are some government regulations on those things to um kind of protect protect the traditional banks and um for the difference between a wholesale bank and retail bank they are scale and um targeted consumer like targeted busters like uh targeted objectives are different yes very good different i'm very good very good my typing is bad excellent anybody else from room five wants oh it's so why go ahead um the retail banking the service includes some utility functions like um to provide safe deposit boxes and provide money transfer facility and to issue the travelers checks and also um for the differences between uh wholesale banking and retail banking is that um the wholesale banking service is like a facility that um they only serve the large the large organization so that they offer a discount if um business meets like a minimum cash reserve requirement and minimum monthly transaction requirement so um the per the the order will be have uh in a much lower price okay very good all right let's move on to room six six we have elliot pointing visit shai anson amy trixie or kathleen again i'm not sure which one you use catching and lying okay she's a chime yeah um i i think a lot of the things that we discussed was already mentioned but then um there uh one thing that is um a difference between retail and wholesale banking would be that the value proposition of retail bankings are a little more catered towards the convenience of um the customers as as in um they wanted to be not a centralized um banking system but a more um dispersed uh services that would kind of provide um banking services kind of everywhere just for retail right yeah okay thank you very good i have to find a way to get everybody country but maybe i'll limit to a couple of things next time because we still have a few of them room seven ray hang wing yan car carry cancun jasper loptens phone and cheating okay winyan one difference between the retail and hotel bank is that the retail one has a lower customer intimacy but for the wholesale bank because you have one personal banker for each client so you have higher intimacy customer intimacy between the bank and the customer client so you're talking about higher intimacy with the core customer relationship for the bank and the client for which one sorry for which one for retail for oh this one is for wholesale okay very good very good all right jasper a lot of stuff is actually being covered by the previous team but i would like to add on to the uh banking competitors just now i saw uh the first group talked about the fast landing service of some companies but then actually there are more and more uh startups often tech companies actually providing some sort of uh credit card payment solutions for company to for smes to actually gain instant credits so they can pay off all their bills with the use of credit cards so we have stripe in u.s and as well as a company called reap in hong kong as well very good point jasper hello hello okay just a point to add on for the services that wholesale banking offer um not just um not over service to big companies um it's not just include landing capital but also include like providing m a services and also to provide financial and strategic consultation to these companies so hold on you're talking about nvt services i'm talking about um like merger and acquisitions oh yes yes yes yes yes yes so for wholesale banking yes so corporate finance advice yes very good well done very good okay let's move on to room eight where we had kam chun kochun chuck leek adrian coover okay soon you go ahead yes so i want to ask a example for the competitor so there are some financial other some lenders company for example like ua and performance in hong kong and also we have several virtual banks here providing similar function and they are growing very fast and for wholesale banking it has a lower operation operating expenses compared to retail banking because retail has more advantages and also there are some expenses for example like chase bank in jp morgan so chase what what do chase and jpm provide facebook is a wholesale banking uh-huh yeah and uh so it has a lower operating expenses and higher transaction size compared to those details okay good uh anybody else from room eight wants to say something oh talk tim go ahead hello uh for hello yeah yeah for the first question we may think that uh the band provides an atm for people to withdraw money very good very good yay and for the second question the competitors maybe to me maybe all the companies that provide installment loan may be the competitors of the bank because the customers do not need to borrow money from the bank and for the good very good yes um maybe um that's very good the competition also the securities company also is uh competitors because uh some of the com for example womanhood people can buy stock by themselves all night simply by an app they do not need to uh get through the banks and so uh the commission um that that the commission that the bank can earn will be become lower very good great bonds back them wonderful wonderful all right let's move on see you can add more stuff as we go room nine we had aria warden tick one hong phai wing chi ching long ching long once uh yat tang using and wing soon yeah so once the dock okay area warden go ahead um so basically for services provided by commercial bank they also provide and they also provide consulting services to widows and orphans so that they can like make an informed decision while investing in investing so you talking about banking or wholesale banking retail banking which here okay so services your advisory yes very good and as far as wholesale banking is concerned um so they also collaborate with other banks and wholesale bankings because the inve the transaction is quite large so they mean so unparticular bank may not have enough money at that time very good point excellent point yes indeed that's called syndicate finance that's what i used to do really good okay anybody where else in room nine that's so great points you know i'm so proud of you guys look at that all right room 10 then we had adrian wing yan one sean chuck nam [Music] roman go ahead i think with the other groups pretty much everything has been said like the difference is that the retail banks target like small and like consumers like us and then wholesale is more about big corporate customers but something that i don't think i've heard maybe i have but for the competitors for for example retail banks especially if they have if they offer credit cards might be the companies that consumers buy from themselves like sometimes they even offer their own credit systems like for example starbucks very good and one chan um i think the customers of retail banks are not only the individuals but also the small to medium-sized business okay so it depends on the banks but that's a great point one chen great point very good uh all right uh then room eleven [Music] is park waisin marco jangdae sutin shuan hoyen and ho yin um go ahead hi professor like i would like to add on on the difference between uh retail banking and wholesale banking yeah one point have been missed out is about the pricing structure so for wholesale banking there are a lot more on a fee business so they collect fee from their clients customers by providing uh professional services such as mma advisory uh cash management advisor etc so for retail banking most certainly are they during the difference between interest rate instead of collecting fee from customers so this is the point i would like to make okay okay very good anybody else in room 11 wants to add something then we go to the last room oh sorry zhang day go ahead go ahead oh i have some uh some things to add on the competitor parts sure like some um so some retail banks might have some competitors such as um such as like some kind of investment banks of investment um uh what is that i think investment bond is that and also uh credit unions yeah yeah very good uh and for um for wholesale banks probably some um corporations like their investment department might be the yes yes very good very very good well done and last but not least we have room 12 we have dishai fang po ching man kwan min kyu hoi kyu and hu tong and yiton go ahead uh i want something about the bank competitors and i guess that maybe in some countries some government department will be competitors of bank huh interesting perspective on what kind of products but i haven't found an example yet so i'll put the question mark and bought ritual banking and wholesale banking i think that risk banking requires large network of branches in order to cater to large customer base and hence it results in high operational costs high cost okay high operational cost and this will be low lower of the wholesale bank okay all right and thank you i just wanted to add to the competitors so recently the new business model called buy now pay later they have been getting gaining popularity sorry i can't hear you very can you say that again so the business model of buy now and pay later they have been getting more popularity as a alternate to credit cards what what kind of payment system is that a buy now pay later oh yes very good excellent wow this is very good okay my goodness people you've managed to on earth a lot it's really good very proud of my class this is excellent okay so we've talked about a lot of things so when we talk about retail banking you can see that banks provide many many services which you would associate with banking right so the first things that comes to mind would be you know lending collecting deposits credit card then you have things that have been added over time like currency exchange by providing insurance it's not a banking product but banks act as platforms to distribute other financial services like insurance like stock trading i they also provide educational services that's very very well seen then you talked about some of the ancillary functions like providing safe deposit boxes travelers checks that goes together with foreign exchange currency exchange the original fintech atm very good advisory services or wealth management services which strictly speaking is not a banking product it is something that is added on i one thing you did not mention here you said the advice for investment you didn't talk about the investments themselves so many banks provide investment services so they will sell you mutual funds unit trusts annuities etc etc so they can provide a platform for investment services as well there's a question that was raised about the customer base for retail is it just individuals or does it include smes that will depend very much on the bank so many banks will have a separate counter for corporate functions because typically it requires more due diligence more money laundering compliance things but um [Music] yes when yen is has got an afterthought people use bank accounts to prove their credit scores so it depends on the country so this credit scoring it's a method to quickly estimate whether a customer is credit worthy or not in the united states and we'll talk about it later when we talk about bank management there's an organization called fair eyesight corporation so i'll type the name in the in the chat box okay and uh it's called fico so everybody gets a fico score and based on your fico score the banks will provide you or less services so it tracks basically your whole banking history whether you've had any problems paying back your loans how many credit cards have you been rejected for all of that we don't yet have this in hong kong but we do have uh a credit bureau so banks have been exchanging information so if you're a delinquent borrower they will find out about it okay uh so peer-to-peer person-to-person peer-to-peer lending yes business to business there's a lot of discussion in the chat okay um so the first point about uh retail banking is to showcase the diversity of services that banks can provide and even in some countries the atm can offer other functions for example booking a movie ticket and things like that so atms can be multifunctional not just for depositing and withdrawing money but they can provide many other functions so the changing technology has been quite astounding now competitors so you covered a lot of ground and it was delightful because i'm very very happy to see that you're thinking outside the box and yes you are absolutely right there are a whole range of companies businesses that provide alternatives to some of the bank services the big disruption area is payments because particularly international payments through banks is very costly and quite slow although not that slow anymore but very costly so there's a lot of competition to provide payment services there is also a lot of competition to provide credit as you pointed out so indeed you have a lot of retailers like starbucks walmart uh kafu in france all these guys provide financial services they actually provide their own credit card they provide payments uh installment loans to buy their stuff okay so you can go to a fortress and you might have like no interest credit for example so there is a lot of competition you correctly identified other financial institutions which may be encroaching into the business of the banks and one big example uh as far as investment bank is concerned is goldman sachs the goldman sachs got into uh commercial back into retail banking with marcus okay marcus is the online online retail banking and consumer finance from goldman sachs and you also have you did point out other depository institutions like credit unions securities companies so brokerage firms broker dealer firms that can offer some lending facilities for example on margin trading is very popular particularly in hong kong there is one that you have not mentioned and i'm surprised because i have quite a few korean students in my class which type of companies in particularly in korea provide financial services which are not listed here yes trimming teaching sorry so you're not korean but you're answering for my korean students very good yes samsung and mobile phone companies do provide financial services okay so uh there are many mobile phone companies in different part of the world both developed world like south korea and not so developed world like in africa where they provide um yes and the apple credit card yes very good which is actually jointly done with goldman sachs which is kind of interesting when you think about it so you can see how banking services are being attacked from different competitors and they don't necessarily all come from the financial sector so you've talked about the fintech companies cryptocurrencies online platforms but also old school brick and mortar retailers mobile phone companies car manufacturers that provide installment loans as you said okay so there's a it's a great discussion because you really so yes that's right gm finance yes mean very good yes so you have a lot of companies that you don't think of as financial companies but whose codes do have quite a significant retail finance business okay consumer finance retail finance and then uh we we discussed why did i ask you to think about retail versus wholesale banking because these are very different business models so commercial banks have these two big business models with quite different so when we talk retail you know you're talking about small customers small transaction side but a lot and a lot of them right so when you talk about a business like that what you want is automation standardization investment in technology by contrast when you're servicing large corporations large customers governments there is much more tailored advice and some of you have pointed it out the customer relationship is very different there's more intimacy there's more in-depth knowledge of the customer to be able to succeed you have to be able to really understand the business of your customer and to promote services that make sense to them right so it's really important to understand that we are talking about very different business models and the keys to success in each business model is quite different okay so you did really well i'm very very happy with this so we talked about retail banking versus wholesale banking very good and i had a group that sent me some information about mortgage mortgage business so here we go [Music] [Music] my [Music] do [Music] why have mortgage payments in hong kong just gone up it's a domino effect of sorts and it's all tied to the u.s central bank which they called the federal reserve on 26th of september the fed raised interest rates for the third time in 2018. that sent ripple effects all the way across the pacific to here in hong kong where the city's monetary authority raised the base lending rate that's the interest rate banks pay on the money they borrow from the city's de facto central bank that caused hsbc to raise its prime lending rate the lowest interest that charges customers who borrow money for the first time in 12 years and other banks in the city followed suit so what does this mean for people who have mortgages tied to the prime rate hsb has raised that rate by 12.5 basis points from 5 to 5.125 most banks offer 2.75 below the crime rate meaning an effective mortgage rate increase from 2.25 to 2.375 that means for every 1 million hong kong dollars someone has borrowed in a mortgage loan they will now have to pay an additional 67 hong kong dollars or 1.75 per month on their mortgage payment the rate hike is going to tighten the squeeze on hong kong homeowners many of whom spend 60 percent of their monthly income on mortgage repayments one brokerage service forecasts that could rise to 70 by the end of 2018. the average mortgage in hong kong is 4 million hong kong dollars the new prime lending rate means anyone who borrowed that amount of money today would have to repay 93 000 hong kong dollars more but there is a silver lining of sorts to the interest rate hike with loan repayments going up the soaring hot prices of hong kong properties are expected to finally start cooling down [Music] well sadly this did not come to pass as usual house prices are very very high and it's a little bit old so it actually is kind of the opposite way since then but it's interesting because it explains to you the linkages okay and the article that the group submitted was about the different kinds of mortgages in hong kong so you have fixed rate mortgage flexible rate mortgage and deposit linked mortgages so this is from the money hero educational page all right okay so let's continue the discussion all right so as part of you know the evolution of banking so you've seen we've talked about new entrants new competitors not just in your own country but you have also foreign competitors coming into your country because of globalization then technology called changes which can have some really good positive impact on the bank or very negative impact and innovation so all of that with the phenomena of regulation and deregulation we will talk about puts a squeeze on profit margins and much more competition for the banks so of course they cannot sit still they have to respond to all these changes so what does it mean it means that the structure of banking has evolved to adapt to the changes that means the banks are doing less lending and more capital market business this is disintermediation they have to continue innovating both new products but also new processes to become more efficient and they have to keep up with the transformation of the regulatory framework so we'll talk about regulation a little bit later now with all of that commercial banks have evolved so they traditional products and services including all the stuff that we discussed but also as far as corporations are concerned trade services credit enhancement payment guarantees supply chain finance all of that is a traditional banking product but the banks have added a lot of new products and services including investment banking services consulting risk management broker dealer services insurance services asset management services so as competition increased the bank started encroaching on other financial institutions business and other financial institutions started encroaching on the banking business so what used to be a very simple one institution fits one model has become all convergence which is why it's important to understand what were the basic functions initially but to understand that for a specific institution it may actually be performing many different financial services so investment banks can have commercial banking services wealth management services and a commercial bank may have insurance services think about hsbc for example bank of china they have insurance companies life insurance companies etc so you have this convergence in the financial industry which makes it a little bit more complicated to understand what are the core businesses of each of these institutions on top of that you overlay the technology so this is what my grandparents dealt with this is banks in the very old days so what you see is like massive rich opulence safe retail positioned in main street so in the main center of the business district so very rich and you would go there and it would look very very safe you wouldn't have a lot of security and you fast forward to today and this is what you have okay it's all on your mobile phone so you can see that we have changed the model of banking has changed quite considerably over the matter of just a few decades and also another important thing to remember is that banks themselves also play multiple roles in the economy the banks provide lendings they are lending they provide loans to both the retail side and the wholesale side but they're also borrowers so they borrow when you put a deposit in a bank you're actually lending money to the bank so they borrow from you but they also borrow from other banks and all their customers they provide liquidity so remember by being a financial intermediary they increase liquidity for both parties with which they work but particularly for the depositors because when you put money in deposit you if it's a savings account you can withdraw the money at any time they also provide credit enhancements you remember we talked about this you remember an example of credit enhancement go ahead fizzy child you look like you're nodding you remember what's an example of credit enhancement it's it's not going to be ah well insurance can be used for credit enhancement but the this the classic example of credit enhancement is just because you took a quiz doesn't thank you win yen guarantee okay providing a guarantee so banks provide guarantees to their customers just like your mom and dad can provide guarantees for you when you borrow your first loan okay so banks can provide guarantees to their customers it's a very important function they are the conduit for monetary policy they provide custodian and trustee services and they provide a payment channel so you can see how the banks have multiple roles in the economy so what it means is that when the banking sector is not functioning then the economy is going to be not functioning very well okay because they are so central to the to the entire economy but one of the most important role of banks is that they create money this is one of the most critical most fundamental roles of banks in the economy they create money and how do they create money by making loans so a lot of people get it wrong because they start the opposite way but how does it work so imagine a bank and then it makes a loan to a business that business in order to get the money has to open an account with the bank thus creating a deposit so the loan is an asset for the bank and a liability for the customer and the deposit is a liability for the bank and an asset for the customer always remember when you open a deposit account you are lending the money to the bank okay so it's a liability for the bank they owe you that money they have to pay back and it's an asset for you but the money is no longer with you it's with the bank so you're effectively lending money to the bank and as you as the bank opens makes a loan and then opens an account the the client opens the deposit account with the bank it creates money because bank deposits are part of the money supply so if you start from scratch with a bank that has nothing else with the first loan it makes it starts creating money and that's because of the way that the banks are set up and how monetary policy works okay now suraj is asking me is there a minimum deposit the bank must keep so we will talk about reserve requirements okay which is a tool for the ba for regulators to sort of try to prevent a run on the banks we'll talk about liquidity management later okay so the different tools and prudential ratios that the banks have to meet all right so it's really really important that you understand that money creation arises from loans not from the deposit the deposit is a consequence of the loan so even if this bank had no deposit to work with simply by making a loan it would create a deposit okay so very often this is taught very badly in economics all right and i'm going to finish with this one which is digital thank you i haven't seen it yet oh my friend tat our lives have gone digital we are now a click away from shopping and dining and our banking system has done just the same virtual banks also known as neo banks or digital only banks provide retail banking services online through mobile phones and customers no longer have to visit a physical branch [Music] the idea isn't as modern as we might think currently in the uk there are around 13 million digital only bank customers double the number that existed in 2018 and this figure is expected to almost triple by 2020. to move hong kong into the new era of smart banking hkma hong kong's de facto central bank is welcoming eight new virtual banks by late 2019 or early 2020. the idea which targets underserved retail and sme customers in the city disrupts the banking landscape and hopes to move the industry into a more tech driven future however as a large amount of overseas digital only banks are still struggling to become profitable many question virtual banks long-term sustainability hong kong banks being some of the most profitable in the world are earning a total of 268 billion hong kong dollars in operating profits among a total of 164 licensed banks in hong kong the market is led by five dominating players would virtual banks be able to disrupt the scene and gain enough traction or will they be a mere distraction and remain overshadowed [Music] i think in the long run um there will be no more different trading between the traditional ban or virtual brand i think a lot of different banks they will start to accelerate the digital transformation and in one day all of them will be offering mainly on a digital channel and kind of um trying to reshape the banking experience honestly this will create a lot of competition in the market instead of you know compete with the products or the pricing these virtual banks will bring a lot of customer experience most probably no competition will be different as a result of this hong kong people will win and to be honest hong kong people deserves no better services better digital solutions no doubt i think consumers will be the biggest winner in this environment of intense competition because it would imply that better and newer financial products can be offered to them at a lower cost banking has to change and it will not go back because consumers expect digital real-time convenience fast cross-border i think all players in hong kong will share the view that we need many more talents who will join this digital banking transformation journey which is going to last in the long foreseeable future i also hear a lot of banks and also fintechs talk about their biggest pain point being the lack of talent the lack of developer talent the lack of fighty talents in hong kong hong kong does not have enough talent particularly on the tab on a ted talent right now we always look for talent with um banking experience but at the same time they are having a good time mindset and they are being test savvy the countdown begins will you switch to this new form of banking my digital banking potentially be an ideal career path for you okay so as i mentioned in the chat box you were free to leave it was because we ran over time but if you have any questions just let me know okay otherwise i will see you on friday thank you bye-bye uh professor i have a question here oh yeah so um like this is like very um like a basic understanding but like i've heard that you know some banks have or some reserves have like a gold reserve or something like that um like for like for example um i think like the bank of england or something they have like yeah with central banks yeah central bank so central banks have to manage their foreign uh reserves so because they have to manage foreign reserves they have to keep a certain amount of foreign currencies but also some of them have gold and so it depends on the view of the central bank and the related government as to what it what they think is prudent in terms of managing the country's reserves and particularly foreign reserves so when for example when the rnb the chinese u.n started to internationalize and was a few years ago there was a rebalancing of the sdr which are the special drawing rights uh which is a sort of fictional international currency which is a basket of the most liquid currencies in the world and after the r b started internationalizing and becoming used for trade as well as uh currency exchange then they incorporated the rmb in that basket and as a result of the rmb being part of that basket many central banks started getting r b so that they would have enough reserves in a variety of different currencies so central banks do have to manage their international exposure so they have to have enough currencies for you know financing international trade and for also helping the banks in their country with international transactions so for example during the global financial crisis uh in the fourth quarter of 2008 there was a big squeeze and particularly in u.s dollar so in order to remedy that central banks had entered into swap agreement currency swap agreement with the fed so that the fed would provide us dollar in exchange for their own currency so that in turn the central banks were able to provide us dollars to the banks in their country so this is a very important aspect of central bank management and the gold is um a kind of remnant i think of the gold standard in the old days where currencies were packed to the gold but also it could be a more prudential tool of managing the reserves oh okay and so when when when like the central banks like when they print more money um like like do they tie it to to some sort of um like value based on that like for example if if they print out like 100 million us dollars like does it just not mean anything no not anymore it's fiat currency in the us you trust or you don't oh that's like that's cool but it's also kind of scary as well it is very scary when you start looking at the history of money it is very scary and it was not that scary when the us was the most stable power but when they the political discussion started kind of paralyzing the government system in the u.s and when you started having uh total dysfunction in congress which resulted in they not being able to agree on a debt ceiling or anything like that and then the government stopped operating the us was that close to default and at that point everybody kind of got scared because they realize that oh my god we're depending on the us dollar on the u.s financial system and look at all these crazy people not not managing the country and that is the point at which china started thinking well we better start stop relying on the us dollars so much for our trade we need to start using our own currency and of course the trump uh rain did not help we are sure people right so now of course we have biden which is sort of reassuring but you know this has proven that you cannot expect that the stability will will last forever so yeah it is not terribly reassuring i'm sorry yeah all right thank you okay no problem all right have a good evening bye bye

[Applause] all right good afternoon welcome back i hope you're all well today i i there any questions before we continue our discussions on banks no ways you don't okay um all right if no questions and we we looked at the video last time on monday and a little bit of sharing on the digital and virtual banks in hong kong as you can see so this is from a marks presentation that i i attended uh there were eight awardees of virtual banking licenses in hong kong in 2019 these are all the winners right there and the objective was to excuse me oops sorry sorry sorry i had not put the uh i had not put the sign on my door um [Music] so uh yes so the objective was to increase access to banking services to spur head innovation and improve customer experience and these are some of the similarities and differences between virtual bank and conventional banks one of the things that you should know that in hong kong the regulators have made it quite hard to get a banking license virtual banking license because they ask for kind of the same constraint as physical banks do have so that means high threshold in terms of capital requirement um and then there are different operating models for the virtual banks um this is sharing some big trends uh this was from the mckinsey global report uh global banking report 2020. so you can see how uh there's some really interesting things happening so their point of view is we have increased deglobalization and of course more geopolitical concerns which is definitely the case many changes in a micro environment the ways we work the challenges from the tech players which is what we've been discussing uh transform customer expectations with younger generations coming into the workforce we have a digitally aware workforce and they are less likely to put up with very stodgy customer experience such as we've experienced in hong kong for a long time and more awareness on esg and increasingly so this is a report from bcg boston consulting group back in december 2020 on banking and this is documenting the increased use of digital banking by traditional bank customers so um here we have a video from group 3 about china is about to launch one of the most revolutionary financial projects in the world it's turning its physical coins and banknotes digital unlike most other cryptocurrencies like bitcoin which work outside the control of a central authority the digital uin will be the world's first that is state-owned issued by the central bank you can use digital yuan anywhere since it works exactly like cash except it's on your phone what does money in your phone look like well digital urine might be stored in a digital wallet like this the additional wallet as we see right now only requires a download of an app on a mobile phone it does not require mobile phone data signals even to make a transaction to take place which is a technology what we call the nfc uh the near fuel communication i think this is also one of the major differences compared to alipay and richard pay because the nfc allows you to do offline payments so even if you can't get a signal say you're mountain climbing or on a flight you'll still be able to pay with digital un all this leads to one big plus for china's authorities the government can check every single transfer that happens to the platform they can eliminate counterfeiting they can eliminate money laundering and they have a much more clear understanding of who is spending what hold up wait what every single transfer every single transfer this does raise potential privacy issues [Music] in other words you could go on indulging in virtual gifts for your favorite live stream celebrity or advice like gambling but your transactions may all be monitored the government has a lot more control over their currency so for example if we had a very low social credit score or the government maybe wanted to increase their finances very quickly they would have a lot of power to prevent you from doing something with their money because they're controlling the digital system on the flip side visitors to china will find it much easier to use renminbi travelers can't use wechat or alipay if they don't have a chinese bank account or chinese registered credit card you might have to ask someone to send you a red packet in wechat or alipay or risk dirty looks when you try to pay with cash and that will change with digital yen on a basic level you do not need a bank account to essentially use digital it gives more opportunities more significantly to people who live in remote areas such as people in qinghai or tibet who are significantly underbanked businesses may find it more efficient to deal directly with digital yen so right now if i want to send money from a bank in china to a bank overseas i basically have to use the swift network or one of a couple of other networks and it's going to be much cheaper for them to do transactions the digital unit is expected to launch in the next one to two years at the moment it's undergoing trials in four cities shenzhen suzhou and chengdu actually right now i'm in sudo one of the travel cities it said the government employees will get travelling around halfway through hours for now and then ironically american franchises such as the mcdonald's as barbecue subway have become the first vendors the tender chinese teachers yes so we must say these are all great new experiences it's also believed that the digital yen will be piloted at the winter olympics in 2022 with international be interesting to see how that plays out i i think some countries may be concerned because they don't want data control to rest in china i think that's a question that the china's going to have to answer is you know what exactly is being tracked by the government versus what's just being tracked so that's secure well very interesting video thank you very much to group three for picking that i learned a lot uh okay so let me switch back to my powerpoint where is it yeah all right some very very good videos so we've learned quite a bit of things in this section and just to show you the size of financial intermediation globally we're talking about 5.5 trillion dollars estimated revenue in 2019 according to the mckinsey global banking report 2020 and you can see the part here about retail banking payments commercial and corporate banking you have the wealth management side here market infrastructure infrastructure and then we're going to be talking about investment banking in our next session all right so from this part of the course you should have understood what are commercial banks what is it that they do who are they emerging competitors and what is the role of banks in money creation so now we're going to talk about bank management so we've touched upon hint in uh previous uh discussions but uh i'm going to uh send you all into breakout rooms again uh and this time what i want you to figure out is if you were suddenly waking up and you were the ceo of a large bank what would keep you awake at night and why and so i'm going to give you about seven minutes so so do so okay so chang day what's happening i still have three students in the main room this is weird did you not get uh a room i'm confused as to what's happening with you why are you still in the you're into groups again but but i'm still seeing you in the main room and i have tsuna sayat and reihang why are you still in the main room and not joining room two are you really here aha so not yet are you here you should join your breakout room so yeah then sana what's happening with giant day foreign okay three minutes wow so nope my okay so i'm getting everybody back more or less ah there's a room that is still hard at discussion very good all right so the way we're going to do it this time i want to make sure everybody has a chance to contribute so i'll just ask each room in turn for two contributions and then we can go back and reopen the discussion so i think i have everybody now back yeah looks like we do okay so i'm going to start by asking somebody from room 1 to share two things you came up with so that's pong king pooching wan shan hoy yan hauman min kyu soy in shu yin manchu and hoyen so uh one chan go ahead uh if i were the ceo of jp morgan in hong kong maybe i'll worry about how the government policy change in the united states and is there any shocking financial news in united states because why in different time zone and what happened in the states may affect the financial market in hong kong in the next day so you were the ceo of which bank like jp morgan in hong kong which bank like jp morgan oh jpm okay okay very good so policy changes and geopolitical news i suppose okay all right room two we have etong uh shooting our group has mentioned that the stock market maybe have drastic fluctuations at night when maybe the political stability or radical news about something happened in the other time zone um very good okay so i'll come back to to the other people who raise their hands i just want two things initially okay and then we'll come back to you so keep you keep there uh you know raise your hand later uh room three shiraz manchik wing long ching long shlock jasper song tag to why mak mankwan and wing sum so we have jasper has raised his hand co-head jasper when we talk about like how bitcoin is actually drive decentralized the whole equity system in the world and how it is driving the money and cash out of the banking system into bitcoin okay bitcoin impact and what's the second thing i would like to add the thanks okay thank you very much room for we have shanyan anson yes and so we are the ceo of hcsbc in hong kong branch and we worried about some sudden policy announced by the central government and some contagious rumors that can result in bank run and this is the first one and the second one is security problem robbery security problem yeah like robbery oh yes very good all right let me move on to room five wai hang winche amy chuhan lok ching chi ching kathleen yo ying emmanuel cinna attacked him and when you we have chi-ching okay let's go chichu um if i'm the ceo of an eye bank like goldman sachs i would like probably be worrying about not getting a big deal like some ipo projects which can like generate big revenue for the company i mean for the bank yeah good okay and the other thing two things um oh we have uh maybe maybe um i think we may have flight of the ipo project for example like the ant bank they may be affected by the legal by the legal policy maybe for the uh if we are the with help the ceo of the retail banking when we are afraid of the ban run very good thank you okay let me move on to room six where we have elliot ishan chu ming oinning support more culture tao o ching ting li yeah thanks cyrus and catching so okay watching you go um we have talked about uh corporate social responsibility like how the social issues and recent news are affecting the brand image and how that will affect uh the people perceive our bank is or yeah so we didn't talk about some examples yeah thank you good great anything else with two things we have also talked about the staff morale because the behavior of a staff would affect like if they are doing some business unethical things then it would impact our image also very good excellent excellent very very good i like that okay we have room seven theo ti kwang fizzy chai shin lang yi sang manwa adren renee menhei pokang ching kai raise his hand okay yeah um so i guess um one thing would be how to kind of foster talents or attract um people that are more digitally savvy or more tech savvy to get with the times um and and another thing uh would be um kind of new market expansions where can the bank explore um you know next where can they um you know grow very good well done excellent okay room eight we had many shiny jung day su ming wing yen calvin aryan hutong and binet say okay jen they go ahead if i am a ceo of a conventional bank i would be um i will wake up by night because of two reasons uh the first one would be the like the um invention of virtual currency that may challenge uh conventional banks um as a new new competitor and the second reason being a sudden withdrawal of deposits by clients during the financial crisis which may lead to immediate bankruptcy thank you very good okay and then we have room ten oh nine sorry sorry i'm jumping one uh arya warden hong fight way hang soy wings windy come chun coat and roman raised his hand okay so i think one of the biggest uh things that would keep me up at night um being the ceo of hsbc would probably be data breaches or hacks okay and [Music] yeah maybe also innovative competitors innovative competitors thank you great and last but not least we have room 10. why sing wing yan siwan jung day na ting won adrian hai ching and lying and jang day okay if i am a ceo of commercial uh investment bank i will be wake up at night for three reasons the first one being a seven change in market such as uh interest rates and a sudden rise or fall of a market price of some stock the second one being like a uncertain risk of my clients or my targeted corporation and third one being the invention of a new kind of technology which i may need to and analyze it um to see if it will be like changing the future environment of the market very good all right very good let me just adapt this a little bit so that we have more space okay so anybody wants to add something i have aryan aryan go ahead uh yeah professor so we also felt that data breaches and security breaches would be a severe problem and the way we perceive the question was as a sudden event that would suppose wake a ceo up at night that would uh so for that we thought of a loss of a client suppose in a big international client that would have uh seriously i'm talking in terms of a corporate rank uh who would have lost a big client and another was uh certain situations like suppose the treasury bond yields as they go up and uh suppose there's an increase in your liabilities over your assets and suppose your employees and certain bank employees are administering more loans than you'd like so that would also be uh i think a problem to oversee for big banks commercial bank okay thank you nyen yes extra species increase in the bad death and don't forget one of the things that can keep me awake yeah because um if they're better english the cost and the financial statement will be worsened as well yeah very heavy stock price excellent very good and then we have uh seonghak i think one more point to add is that the banks care about the inter-bank interest rate and the changes in the interbank industry may affect their liquidity also recently there is a change in the libor system and transition to the new system so that can be very hard for the bank to adjust to the new system so there can be another problem very good and we still have nothing okay so because like the points are mostly mentioned and i just like to add a bit more like regarding uh like for example i find this ceo of gottman sex the end group was going on ipo but suddenly because there's a change in the government policy and and the ipo was suspended so i guess like that kind of news sudden change will also cause a lot of trouble and also worry in inside of me well i think at the same time like some ethical issues of the um the bank of the company which has already gone listing for example like the look and looking coffee that one like after being iv after his initial public offering in the u.s market and then it was like kind of the accounting information was actually facing a fraud and then the whole company is like being kind of facing some kind of um under investigation so on that kind of thing will be also a big concern if i'm doing the ipo for that company very good excellent and emmanuel um i have a question uh what issues like hyperinflation e problems for banks sorry what issues like hyperinflation be a problem for banks oh yeah it could be yes so how you adapt to this kind of change in in market circumstances changing the economy that would definitely be uh you know you would have to see how that impacts your product offering your customers and everything yes clearly so not just changing market but changes in the economy as well anything else you want to contribute oh i was just not very sure about how exactly hyperinflation would affect banks yeah uh well let's pray we don't experience it shall we you probably don't want to experience it uh anything else i still have two hands up not denying any manual so yeah okay now yank you still have something you want to mention dying oh i just pressed one or just i don't know already i just forgot to put my hands down sorry okay okay okay no problem okay this is very very good and one of the reasons security of customers bank information yes yes yes very good uh so data privacy very good excellent i am very very glad that you've mentioned all of these things because all of these things have of course been impacting the banks yes liquidity we're going to be talking about within the uh the discussion later so there's a lot of things and what i want you to do with this brainstorming is to get you to realize how what a variety of issues bank ceos have to deal with and also the degree to which those are bank or country specific okay so when we're talking about digital over digital currency right now this is something that bank ceos in in the china and hong kong are are you know having to adapt to because this is coming no matter whether they like it or not but there are also discussions going on in europe and uh in the us around that so ceos have to wrap their head around first of all the the product itself which is very very new and most importantly the implications uh then you have things that are like one of you mentioned that you you went at the issue of the question from a sudden perspective but you may have recurring things that that you keep worrying about your reputation hsbc has been in the news with bad bad stuff for quite a while so if you were hsbc ceo you're probably worried about what is the next headline going to be and where where from my huge organization will bad news come from and and that could be as you mentioned some of your staff behaving behaving badly it could be some very bad market conduct it could be a rogue trader it could be many many different things so we will see how all these things have uh issues about legal and reputational risk operational risk all of these are very very critical um so thank you very much for all this wonderful sharing and now we're going to talk about four main aspects of bank management that uh is a recurring thing so it's not like sudden changes or anything but this is something that bank senior management has to be concerned about and has to work on on a day-to-day basis so there are four major aspects the first one is liquidity management okay so liquidity management is basically making sure that you can meet your customers demands okay in terms of cash so you or you mentioned this uh when you talk about the bank run here okay so he always already highlighted this okay sudden deposit withdrawal this is basically an issue of liquidity management okay so why is it number one because the bank may be solvent but if it doesn't have the money to face a sudden run then it will be bankrupt even while being solvent so liquidity is absolutely critical and we're going to look at different ways that we can manage liquidity then some of you talked about bad debts right so bad debts and bad customers so what happens with that this is a matter of asset management so when you're looking at the asset side of the balance sheet for bank it's mostly loans but of course different kinds of investment but broadly speaking for commercial bank the bulk of it will be loans so there you want to have acceptable risk so you need some risk in order to get returns but you don't want too much risk so that you um you're having a uh a problem with non-performing loans and bad debt so we'll we'll dig into that uh as we go deeper into each of these aspects we have a saying in banking that you want to have customers with no risks that pay very high returns this is kind of trying to square the circle acquiring funds at low cost so funding yourself so you guys did not mention that that i can see except a little bit about interbank here but this is besides deposits how the bank funds itself and this is the liability management side so how much short-term versus medium-term versus long-term funding sources we should have to finance our business and then uh part of this liability side of the balance sheet is our capital management and we will see that banks are not free to do whatever they want they are regulations that apply that dictate the minimum amount of capital that banks have to keep on the balance sheet and we will dig into that quite a lot when we go into regulations okay so these two aspects asset and liability we call that asset and liability management because you cannot do one without the other you have to look at the balance sheet on a holistic basis and of course liquidity management will have impact both on asset and liability management so it's all linked together okay all right so let's dig into uh liquidity management first and we're going to look at a scenario with why are you moving uh a scenario with a bank bank a that has this is bizarre i don't know why my thing is moving um it is a simplified balance sheet of bank a and bank a is an american bank so in the in the united states banks have to keep a minimum amount of 10 of their deposits as reserves with the central bank with the fed okay so as you can see here the biggest source of liabilities for this bank is deposits and it has 10 million of capital so with a hundred million in deposits you have to have ten percent of your reserve of your of that amount in reserves but you observe that this bank has 20 million dollars in reserves what does it mean it means it's a very prudent bank so they like to have an extra cushion just in case something happens so it has excess reserves of 10 million dollars right now you might say this is a policy that is costly for the bank because uh before the global financial crisis uh banks were not getting any interest on reserves that has changed that has changed since the global financial crisis in the u.s the u.s now pays interest on reserves um but let's look at what happens if we have a sudden outflow of 10 million dollars of deposits so 10 of our deposits walk out the door okay what does what does it mean from the balance sheet perspective well obviously our 100 million dollar deposits now become 90 million and since they are walking out the door they take their money with them so that's 10 million of reduction in our reserves okay but reserves the same as cash so 10 million dollars reduction in reserves now what's the outcome of that well we're still okay from the 10 percent reserve requirement aspect because 10 of 90 million is 9 million dollar so we don't have to take any immediate steps we still have one million dollar of excess reserves so we've been able to handle this small bank run or some important run 10 is actually pretty significant okay but now let's compare and contrast with a more aggressive bank bank b the bank b ceo considers reserves as a tax on the business so he only wants to keep the minimum amount of reserves so there is no excess reserves if they're hit by the same issue of a 10 million deposit outflow what you see is that they're exhausting their reserves right away which means they are immediately in violation of the reserve requirement which means the regulators will be breathing down their neck to tell them to replenish their reserves very quickly so they have to take immediate action what can they do tell me some suggestions what can they do you have the balance sheet simplified balance sheet what can they do call back the loan says anson interesting we do have 90 million dollars of loans so we could arguably call them back borrow money says nyeing from others or from the central bank says wenyen borrow from other banks is catching sell assets says ensen sell security says roman tomorrow from the central bank all very interesting propositions okay transfer stocks back to cash check from that what do you mean by that prepared to go to jail hopefully you can do something before okay all right okay let's walk through all your very very interesting suggestions okay apart from being prepared to go to go to jail hopefully we don't get to that drastic situation okay so first thing would be as some of you suggested set up coup from me you guys are historical okay so borrow from other banks and corporations okay on the face of it this is a good solution okay so notice my balance sheet right now okay my balance sheet right now has 90 million dollars of deposit 10 million of capital 90 million of loans and 10 million of securities so the asset and liability size is a hundred million if we borrow from other banks or corporations okay let's say nine million dollar the strict amount necessary to reconstitute our reserves okay so notice that immediately our balance sheet will increase again now it will be 109 million so you're adding to the balance sheet by doing that okay that might have other interesting implications which we'll talk about later but what's the problem with this interest payments okay the interest might be pretty high there will be a cost associated to it yeah anything else what do you mean visit shy by credit rating yes roman you put the you put your finger on it and wing in yeah availability and you may not be able to do it right imagine the situation where uh the bank has been suffering a bank run so bank runs a very public event okay so that means that other banks may not be terribly inclined to lend you money okay because if you've suffered a bankrupt that's typically because there's been some bad news about you so typically other banks will immediately stop lending to you so the first source of funding that evaporates for banks when there's bad news and rumors is interbank so the other banks will be very quick to cancel their lines that's the first thing that goes now you might be able to issue some short-term securities to the market but that takes time and again you you also some one of you was talking about this and i think it was the uh uh buh i think it was physical your rating might be impacted so if you weigh if you're downgraded that will also impact whether you can actually issue in the market and the price that you will be paying for it okay so on paper a good solution the thing you need to know is interbank markets tend to dry up much faster than any other form of funding now second solution that you talked about is and that was um roman's suggestion let's sell our security portfolio okay we have 10 million dollars of securities portfolio and we know that securities are negotiable transferable financial instruments so on paper they're very liquid so that sounds like a good solution notice this solution does not change the size of your balance sheet okay you're simply liquidating your portfolio and cashing it in so it doesn't change the size of your balance sheet now what's the problem with this solution so you have a diversification lower return the liquidity thank you the price transaction cost it takes time you forgo the potential return very good all excellent points now the securities portfolio is at 10 million on our balance sheet what is this is the book value or the mark to market value that they have at the latest statements but what is the true market value so first thing you need to know is when a bank is in trouble all the competitors know about it they know the bank will have to sell assets so it's a fire sale situation the prices may not be very attractive and on top of that if you are in a bad market that is you're not the only bank in trouble imagine fourth quarter 2008 liquidity crunch the market is in a panic there is no market nobody will give you a price okay so don't believe your economics teacher when they say there's always a price that's not true okay in extreme market volatility nobody will give you a price okay so you might believe you have liquid securities before you to liquidate in case of a crisis but in case of a crisis liquidity evaporates very fast so for example in the fourth quarter 2008 a number of banks had portfolios of aaa rated mortgage-backed securities two things happened simultaneously okay there was a huge liquidity crisis in the interbank market and two the rating agencies downgraded the mortgage-backed securities from investment grade to junk that means the entire market evaporated okay there was no market nobody wanted to buy that stuff so ultimately the government stepped in and rescued the market but there was no market okay so on paper again great solution in practice all kinds of impacts so the biggest difficulty is that liquidity is relative so you may not have a market if you get a price it's going to be probably very different from what you expected it will cost you and it will take time less time than other solutions but still now let's look at two more possible solutions yes cents on the dollar uh the third possible solution which you all pointed out was okay let's borrow from the central bank okay so this being an american bank it can borrow from the fed it goes to the discount window of their local federal reserve bank and borrow money so again notice this will increase the size of the balance sheet you're getting external funding what is the downside to that what are the problems with this solution the rates till june okay so the cost of the discount rate anything else yes that's the cost sketching yeah must share info with the fed yeah they they know about you anyway will the bank be taken over not just because of that but it might be the ultimate consequence if the situation is bad enough okay the fed may reject the loan this is a remote possibility but it is a possibility but the bank the fed tends to want to protect the banks so rather than refusing loans uh the solution would probably be to take the bank over discourage potential clients yeah so you're almost there aria warden so when it is when you go to the discount window because you have a liquidity crisis then the market will know about it so it has an announcement effect which tends to be that's right cheating the reputation of the bank okay and of course the fed will be breezing down your neck and expecting some changes in the management of the bank that has brought about this dire situation okay now one exemption from that is if everybody is in the same boat as happened in the global financial crisis then the central bank will actually encourage banks that don't actually need it to borrow from the fed to send a positive signal that the fed will support the banking system so as to calm down the market panic okay so it's very different if you're on the only bank in that situation or whether the banks all of them are suffering a major liquidity crisis monetary policy is uh different uh well it is part of monetary policy it's part of the response to uh to the bank so the one of the tools of monetary policy in normal circumstances discount loans but also in severe situation when the fed acts as lender of last resort so central bank act as lender of last resort okay so broadly speaking of the tools we're looking at banks can generally rely on the central bank and the government to offer some some sort of lifeline okay uh and then the tools that one of you mentioned at the very beginning which was to call back the loans okay so you had 90 million dollar in loans you could try to call back nine million of those loans to get cash what's the problem with this solution okay deposit contraction missing potential interest so yeah bad debt well we don't know what loans we have there okay very good it takes time so rise impact on future clients very good uh borrowers might not have the money yeah and they may not be able to repay as well very good so there are a number of problems with loans okay so the bad debt and bad loans normally as a bank you have to uh put provisions for uh bad bad loans so non-performing loans so the portfolio nowadays because we have mark to market should reflect the quality of the portfolio okay that was not the case in the old days when you had historical value accounting which is a little bit more tricky you had to look at the bad loan provisions and things like that nowadays it's a little bit easier however all kinds of very interesting situations because the loan contract may not allow the bank to call back the loan okay so first thing is you cannot do it okay uh and if you do it then it has very bad implications for the relationship with the customers and of course the loss of revenue going forward and if even if you can do it it's going to take time okay it's going to take time it's kind of a desperate measure so it's probably the last one that you want to try out out of all of this now let me tell you what happens in real life for this kind of situation because i was right in the middle of this kind of thing back in 1984. so i started working in 1980 and in 1980 i moved to london to an american bank of chicago i joined the bank in april 1984. by the middle of 84 there was a banking crisis in the midwest of the united states so first chicago headquartered in chicago illinois was one of the banks affected by that crisis which came right after a major international debt crisis in 1982 when mexico defaulted on its obligation and triggered a massive latin american debt crisis so for chicago was an international bank so it had suffered during the latin american debt crisis then it got hit by the crisis in the midwest and they were not the only ones our major rival was continental illinois so both banks were suffering a huge crisis that crisis was compounded because both banks were subject to banking regulations in the u.s and at the time you could not open more than one branch within a certain parameter from the head office in illinois and interstate banking was illegal so we had literally two branches the head office and one branch so the collection of deposits was severely hampered so how did first chicago and continental illinois finance their international expansion through the interbank market okay now there was a small difference in the way that both banks were managed from a liquidity management standpoint continental illinois relied entirely on the interbank market first chicago has started diversifying their funding through the issuance of cds commercial certificates of deposit wholesale and commercial paper in particular and those short-term debt securities had maturities of on average about six months so both banks got hit in the summer both banks faced a crushing liquidity crisis so what to do well we did all of this we did everything we had a fire sale so i was in charge of liquidating our europe middle east and africa loan portfolio which at the time was very complicated because loans did not allow you to call them back so the only thing you could do was try to sell them to somebody else needless to say the other banks were extracting extortionate prices to buy to buy these assets okay so we sold everything we could so when a bank is in a situation like that it will do all of this all of these the reason why first chicago survived and continental illinois was taken over by the fed was that we had a time window because we had diversified our funding with six months cp and cd we had a little bit more time because the interbank market dried up right away but lucky for us we had diversified our funding source so it bought us time to liquidate the portfolio all right so huge painful lesson learned okay in a situation like that so this was not a market-wide crisis this was a crisis that really impacted banks in a specific region for a specific set of circumstances so luckily the whole market was not dying just two banks and my bank survived while the main competitor did not only because the management had been smart enough to diversify our funding sources okay so the lesson from that is your liability management is very important and we will see when we talk about regulation how regulators have taken that lesson into consideration on changing the rules in basel 3 and puzzle 4. any questions okay so just to show yes yes uh i had one regarding of whether a bank can borrow from certain depositors money temporarily take that money to pay some of the other outflows what can can banks temporarily borrow from the depositors money to pay of other outflows but you already be borrowing from your depositors merely because a deposit is for a bank you know you when you're making a deposit you're lending money to the bank so you're not quite sure what you mean uh so so the cash outflows have to go from the reserves right well reserves is basically uh includes cash okay so this is cash that you have to set aside and you have on account with the central bank okay so when imagine you know imagine you have a deposit with hsbc and there's some really really really really really really really bad news worse than all the news you've heard about and so you want your money back because you don't trust hsbc to still be alive okay so what do you do you ask for the money back you take out your deposit so you run to the bank you know why it's called the bank run okay you have to run because first come first served okay yeah so if you don't run and you at the back of the queue all the monies that is in the bank vault will have to be paid will be paid out first come first serve so all the people who come ahead of you will get their money before you do that's why it's called a bank run yes yes yes yes it's a very very very scary situation now it's mitigated because in most developed countries we have what is called deposit insurance protection okay so your deposits are protected by the government up to a certain threshold we will talk about this when we talk about banking regulation all right nevertheless it can be very scary so let me tell you an interesting anecdote that happened about a couple of decades ago and it was a situation with one of the banks in hong kong that had the misfortune of having a branch right next to a bus stop and there was some problem with the buses so there was a very very long line at the bus stop so it was kind of going around the corner of the bank so people passing by saw this very long line and immediately thought there was a problem with the bank they thought there was a run on the bank because people were queuing all around the bank so immediately they message each other have you heard about the bank run on banks so and so so the rumor amplified and people ran to all the branches of that bank to withdraw their cash so there was immediately announcements that were made and you know uh the big tycoons in the city stepped up to say no no no don't worry it's safe etc but you can see how this very it was a rumor there was nothing wrong with it but it triggered an absolute panic even though in hong kong we have deposit insurance protection okay so banks are very susceptible to rumors and when deposits depositors come to the bank and want to close their account and get their money back you have to pay them out of the cash in your vault if you don't have it then you have to close the bank okay so this is a really really really bad situation very very very bad situation thank you thank you you're welcome so this chart which is from an article on bloomberg very recently showed you how much money the major banks in the us have on reserves so you can see reserves have increased considerably in the u.s so the banks are sitting on pies and pilots and piles of cash at the central bank so there's some really interesting things going on in the us in terms of the proportion of reserves that the bank are keeping the supplementary leverage ratio and all of that things we will discuss when we talk about regulations all right so we talked about liquidity management and i like to over emphasize this because uh it is absolutely key and it's very difficult because it's relative so you think you are fine and you have liquid assets and boom something happens and you find out that no you don't okay so it's a very very tricky thing to manage now assets and liability management are linked together you cannot do one without the other okay so from the asset side what you want is to have loans and securities with as little default risk as possible but as much return as possible okay so you want to diversify your portfolios so that you avoid one of the major dangers in asset management is what we call concentration risk concentration risk is when you have too much exposure on one single name one single customer so one of the interesting things about green cell capitals failure is the extraordinary amount of concentration risk that they had on one company or group of companies related companies geology capital a glg group of companies so that's one thing and you also want to help liquidity management by having liquid assets and managing your reserves so you can see how liquidity management is going to be related to asset management on the liability side you your funding is not generally limited to deposit because if you only fund yourself with deposit then you're opening yourself up to considerable maturity intermediation risk okay so you want to diversify your liability management and as i explained to you with the case of first chicago it can be a matter of survival okay so nowadays you will see that the regulators have imposed a number of prudential ratios on the banks so that they do just that okay so issuing cds uh issuing longer term debt obligations diversifying your funding sources so you don't rely on just one source is prudent liability management now in this whole thing we're looking at the balance sheet of the bank but one of the interesting aspects about banking business is that not everything is actually reflected on the balance sheet are activities that involve trading fee business that do not necessarily appear on the bank balance sheet for example fee income from foreign exchange trades servicing mortgage-backed securities providing guarantees providing liquidity facilities revenues from trading of derivatives foreign exchange etc revenues from trading your loan portfolio this is something that started after the banking crisis of the 80s all of these things they generate returns but they also generate risk and in particular this kind of contingent liabilities this is things that banks promise to do but never expect to actually have to deliver so providing a bank guarantee in the form of a letter of credit and things like that generally you don't expect your customer to default and you to have to step in to meet their obligations similarly providing liquidity facilities you don't really expect your customers to run out of liquidity and they're having to draw down on the lines of credit but if they do what happens these are these materialize and will immediately appear on your balance sheet which means you will have to fund them okay so the problem that we saw specifically during the global financial crisis is that a number of these contingent liabilities were triggered because customers were in serious distress so they drew down on their lines of credit they evoked the guarantees so that meant the banks had to step in and had to fund these right in the middle of a terrible liquidity crisis so it's all fine and well but you need to remember that these off-balance sheet activities generate risk as well as return so this need to be taken into consideration in prudential management the fourth part is capital adequacy so we will talk about it at length when we talk about regulation because in the banking sector the regulators impose requirements now the amount of equity capital that you have on your balance sheet provides a trade-off between safety and return the more capital you have or more equity you have the lower the return on equity for everything else being equal on the other hand your capital is also an absorption for your loan losses okay so when you have losses then the capital the equity capital that you have will absorb those loan losses okay so the idea is that the more capital you have the more cushion you have the more the shareholders will expect management you know to be very prudent uh in terms of the kind of losses that you're supposed to to take but also will be very concerned because there will be much less return on the equity so it's a big trade-off now banks manage capital by just like any other company by issuing or buying back stock they can change their dividend policies that will impact your retained earnings and you can also adjust your balance sheet so if you cannot issue capital because you have to meet more capital adequacy ratio one of the solution is to shrink the balance sheet to sell off loans uh securities get out of certain sectors of activity okay so you can work on different levels we will discuss at length capital requirements of the banks and how those have evolved over time all right so we just have time to do one iprs benson so we have one iprs question coming up okay so it's a theoretical question what is the theoretical background for capital adequacy requirement so [Music] so [Music] okay so uh thank you the correct answer is all of the above okay so that's the correct answer uh because you want more uh cushion for losses and also it provides an incentive for shareholders to monitor management because they have more money more skin in the game so uh it's 1 20 feel free to leave i know some of you have other classes or other things to attend as usual i will hang around to answer any questions uh thank you very much so rise had a question albaro is forced to accept loan callbacks no it depends on the terms of the contract okay so you have to look at every single contract thanks roman how about typical mortgages in hong kong and usa so again it will depend on the uh terms of the contracts so as far as i know in the us you can refinance your mortgages i'm not sure about hong kong i haven't looked at it but refinancing mortgages is very common and paying them back early so there might be penalties associated with it but it really depends on the contract okay so chuck fung is asking me why selling liquidity securities have affected liquidity so if you're selling an asset whether it's a loan or a pp e or a security portfolio then you will get cash for it right so you will immediately get that cash and then that will increase your reserve account now the problem is that the price at which you are selling any asset will depend on whether there is a market for it and how long it's going to take you so what are the transaction costs involved in liquidating an asset and the price at which you can sell that asset we will talk about the supplementary leverage ratio later to tow when we talk about regulation it's basically what the american banks call the basel for basel three leverage ratio okay any other questions we have very good questions yes visit chai go ahead yeah i had a question about the off balance sheet activities yeah um yeah so i it wasn't very clear to me like when when do they um the one that is circled in red like so those ones go on the balance sheet okay so they're not on balance sheets okay so for example imagine that um hsbc has a big chinese customer they know very very well okay and that chinese customer let's say synocam is issuing uh debt securities in the market to finance themselves but just in case they want to be uh to be sure that they always have access to liquidity so they enter into an agreement with hsbc whereby hsbc says well we understand you fund themselves in the capital markets but if capital markets dry up we have this facility in place where you can borrow money from us in step and we will charge you blah blah blah okay so hsbc fully expect that synocam will keep funding itself in the market and we'll never have to borrow from them but if there is a market liquidity event then under the terms of the contract signucam can turn to hsbc and say we'd like to bother the money now by the way so at that point hsbc really doesn't have much choice they have to fund at that point it becomes a loan then it goes on to the balance sheet so it becomes an asset which has to be funded you understand yeah right so you have the similar situation with the guarantee what does the guarantee says okay if my customer you know my customer is performing but if they don't they now step in their shoes same thing right so the banks normally get quite a lot of fees and commissions from these services but of course if the market turns very bad and their customers is in a bad situation then they have to step in okay oh okay so um like they only go on on the balance sheet when when something happens like but other than that it's always off yeah because until then it's just a promise so a promise is not really reflected on the balance sheet so you have to be very careful when you analyze financial institutions risk you really need to look at the notes for the financial statements all right got it thank you i would like to ask why capital is categorizing the liabilities section okay man check so um so yes and no so if you remember the balance sheet okay there's an asset side and the liability and equity side okay so you have liability and equity at the bottom so i put it on the same side okay so you can look at it at the overhaul liability and equity or you can separate it but it's on the same side of the balance sheet allowance for bad debt is a completely different thing that's what we call the loan loss provision okay so professor i would like to ask in the scenario uh the capital is under the liability so is there any examples can be given that what is the capital o capital is the equity okay so equity okay here here it's a window in banks in banking we call it equity capital okay so they call it capital because we call it capital requirement and the way that the bank regulators define capital is a little bit different from the normal accounting definition of capital so we'll dig into that much more when we talk about banking regulation oh thank you you're very welcome arie and you had a question uh yes professor regarding the uh off balance sheet uh activities it also mentions loan sales there but aren't loans here supposed to be on the balance sheet okay so that's a very good question so if you have a loan trading activity it's it's the accounting treatment is a little bit different okay so normally the banks hold their assets uh to maturity okay but the loan portfolio if you have a loan portfolio for trading purposes then it's different and the revenue that you generate from trading loans is kind of like the revenue you generate from trading derivatives and foreign exchange so the revenue okay so they're treating it like an instrument then as a as a financial instrument yeah loan sales have evolved quite a lot since the 80s so loans have become particularly from syndicated loans have become much more like securities that securities they're much more tradable than they used to be but you don't need to know that for this this is just like additional information and providing okay so all you need to know is that all balance sheet activities involve all these and generate risk okay okay thank you i had another dog professor yeah do do uh countries provide special provisions to banks to call back loans like even if it's not in the contract if they're having trouble staying afloat um so that would be a legal question and again that applies to you know you would have to look at where is the bank what are the laws that apply to it uh what are the different contracts underneath you have to really dig deeply into it okay and uh last one i had a similar question like mandek was the the classification of capital can it also be considered as an asset equity capital no it's always on the liability side okay remember the basic balance sheet that we looked at at the beginning of the class yeah yeah the other side of the balance sheet okay okay thank you you're welcome any more questions all right then it's time for lunch people lovely to see you i see you on monday just

all right good afternoon everybody i hope you all well and had a very nice weekend enjoyed the weather i don't see any questions yet if you have any questions please don't don't hesitate raise your hand or type it in the chat box whichever way you want or you can always send me an email afterwards okay so we are in the process of still discussing uh banks and we talked about the typology so the taxonomy what is it that they do we talk about fact management and now we're going to dig into risk and risk management so all right so risk management 101 okay what do we do so i'm sure you'll take risk management courses at some point to another but the fundamentals first identify the risks now identification is the first step and it's a very difficult step because sometimes we can think outside the box and it's very hard to imagine things that have not happened yet okay so things like the plane in the terrorist attack on the world trade center nobody had thought of using planes as you know weapons to attack a civilian tower uh things like the combined catastrophe in fukushima all right so the job of the risk manager is very difficult because it requires thinking outside the box it requires having a very vivid imagination of things that can go wrong okay once you have identified the risks the second step is to quantify and that has two aspects you have to first quantify the probability so how likely is it that we will be hit by this problem the second is the severity if we get hit how bad will it be okay so you have many risks that are very probable but with very low severity okay any business has recurrent risks that they have to deal with that are very likely but doesn't have a very high severity there are a few what we call tail risks which are very very low probability but if they happen very high severity to the point where it's a threat to business continuity you have some risks that have low probability and low severity so these you can probably kind of ignore but if they have low probability and very high severity you cannot ignore them because if it happens and you haven't done anything to prepare for it that means that your business will be out okay so the first two steps are very complicated okay then once you have identified and quantified the rest then you have to decide what to do about it that's what i call manage okay so when you think about it that many different things you can do you can try to eliminate the risk you can try to keep the you can keep the risk because it's a fundamental part of the business and that is why your shareholders have invested in you you can mitigate that is to keep some of the risk but try to reduce the severity when it happens and sometimes you want to take on more of that risk because you know how to handle it it's part of your core business and so you might want to add even more risk okay so it's in very simple terms the basic steps in risk in the risk management process and then of course then you have to set up the policies and then you have to verify and then you have to update so it's not a static process all right now if you decide to eliminate or mitigate the risks there are a number of things that you can possibly do and sometimes it requires the use of financial instruments we call derivatives so derivatives on financial instruments where the price is derived from something else okay so let's say for example you are an airline company and you are selling your tickets in different currencies but your home currency is say the us dollar so because you're selling tickets to different people in in the world you have foreign exchange risk that risk can be mitigated by using foreign exchange derivatives you can use options you can use swaps you can use forwards you can use different kinds of instrument however some of these instruments require you to take risk on the counterparty on the other side of the trade so remember when you do that you're replacing one risk the foreign exchange risk with another risk the counterparty risk so be very wary that when you are trying to eliminate or mitigate a risk by using certain types of instruments you are actually creating another risk okay the risk of your counterparty okay so this is very very basic stuff so a company will be very often able to mitigate some of the risk naturally okay through the balance sheet for example imagine a company that has business is headquartered in hong kong but who has a subsidiary in singapore and is selling some stuff in singapore so it's generating income in singapore dollar well you can hatch part of this by financing that security that subsidiary in singapore locally so you borrow singapore dollar and you can use the singapore dollars generated by the subsidiary to service the debt financing this is what we call natural hedging or balance sheet hedging okay in that case you're using your own business and your own balance sheet to mitigate some of the risks okay any questions on this this is really the abcs of risk management it sounds simple in practice it's very complicated all right okay now let's zoom on banking and think about all the kinds of risks that happen and arise out of the business of banking so we're going to look at the first the first at the credit risk which is the one that everybody immediately thinks about when they're thinking of banks then we'll look at liquidity risk market risk operational risk and then legal and reputational risks okay so the first part is the one that everybody thinks about and then think about a bank is what is called credit risk now credit risk is often misunderstood it has different dimensions so it has to do with the ability but also the willingness of a borrower to pay when you so as you know banks regularly make loans right and they expect the borrower of the loan to pay interest and then to pay back the money at the end according to the terms of the contract if the borrower does not pay any amounts due under the contract when it is due we say the borrower is in default okay so default rates the same thing as credit risk now how can this happen there's two ways one the borrower does not have the money so it does not have the ability to pay the second one is they don't want to pay they may have the money but not the willingness to pay now this might happen when the borrower has a limited amount of money and they have conflicting engagements imagine for a minute if you were the president of a country a very poor country that has borrowed from international creditors and it has to pay back some of the money on a certain date it has the money to pay it but there is a terrible famine going on what would you do use the money to pay the creditors or the money to buy food for your people very often the choice can be that bad okay so it's not just the ability but also the willingness to pay sometimes like during the globe the asian financial crisis in 97 98 some companies had the money to pay but the competitors did not and defaulted so then the companies who had the money thought why should i pay i'm putting myself at this disadvantage right so you had six you have a situation where you have the ability but the choice of paying or not paying you can weigh the pros and cons okay given the situation the competition etc so this part of the credit risk analysis traditional bankers call that character so they associate willingness with character okay now once a default has happened that is to say the client has not paid there are two for there's two dimensions the default risk is ability and willingness to pay when due so will the client pay or not pay that's your default risk but then there's an another angle once they have defaulted the recovery risk is how much can i hope as a creditor to get back of the money that is owed to me okay in other words my client has defaulted how many cents on the dollar can i hope to recover in the liquidation or bankruptcy process all right and that in turn is a function of the contract and whether you have security or collateral and where you rank in the priority order so that is called your seniority in the capital structure broadly speaking when a company goes in liquidation the last ones that get anything other shareholders there are exceptions okay i will not get into that is too complicated but normally when a company goes in liquidation the last ones that get paid are the common shareholders and then above them there's a whole pecking order a hierarchy of investors okay now who can tell me in hong kong in case of liquidation who gets paid first any ideas creditors bondholders employees good ideas very good holly scott the answer the firm doing the liquidation so indeed the liquidator gets paid first okay the liquidators get paid first closely followed by the government and the employees in my country in france the employees and the government are what we call super priority creditors they rank ahead of everybody else so interestingly the creditors are behind okay so for each country and each legal system whether you have bankruptcy reorganization or not whether you know what is the pecking order all of these things are very very important to know before you get into a contract okay because that impacts how many cents of the dollar you can hope to recover if a default happens okay then of course if you have security if you have collateral does the value of that collateral or security and by which i mean the liquidation value does it cover the amount that you have left think about for example um a retail banking client who buys a house with a mortgage okay the mortgages has the house as collateral if the value of the house is less than the amount you owe to the bank under the mortgage what happens well different things in different countries in the u.s you can just send the keys of the house to the bank and walk out that's called jingle mail in my country the bank will come after you for the difference okay so again different things in different countries now the third dimension here is okay we have a problem the cla the company has not paid there is a default situations what do we do the bank has a choice it can force the company into the courts and liquidate or it can try to find a solution by which we mean work out the problem not work out in the gym okay working out the problem so what do you think banks do what do you think they prefer to do work it out why have a chat yeah send out the big the big guy to have a chat with you liquidate with lower than market value liquidation is costly and long very good so their costs involve those time involved the value that you can extract the recovery might be very low yes what else anything else potential full bounce back yes they can't get back the money wow su yen so what do you mean by that i mean that if you go to liquidation you cannot get back the money it depends less people stuff yeah nobody likes dealing with lawyers right so mean very good point the reputation nobody likes banks right so if the bank is dragging a poor little customer to court it looks bad the judges are normally not very inclined to find in favor of the bank okay so broadly speaking banks prefer to try to find a solution and there's another very important reason why banks like to find a solution besides all the things you've said no theo there's no guarantee that you will get any money back it really depends on the circumstances so why do the banks not like it why do they try to work out a situation what are the consequences for the banks if there is a default followed by liquidation yes they do lose a customer receiving earlier is better bad debt yes assuming very good they have to recognize a bad debt the loan becomes non-performing they have to show that they have to absorb the losses not a happy situation okay nobody wants to be the first bank to recognize bad debt nobody wants to have growing losses nobody wants to increase their provision for bad loans okay it looks bad and the regulators will start watching at the situation and thinking what's going on over there especially if your competitors are not having the same problem even if your competitors are in the same boat you don't like recognizing bad loans so what can you do so what can you do change the loan terms very good roman so what would you change the maturity okay so we can extend the maturity very good cheetah maturity yes uh some pac haircut so we reduce the amount that they owe us the rate yes we can change the rate to make it more flexible to pay them back yes so you can act on like what they did to greece very good very good yes indeed okay different ways of paying back so way back in japan okay when japan uh collapsed because of the um huge real estate bubble japanese banks were faced with bad loans up the wazoo so what do banks do in that case they look very carefully at how regulators define bad loans and then they negotiate with their clients to rearrange things so that that does not qualify as a bad loan so rolling over the debt extending the maturity making them pay just enough so that there's some payment that will save them from having to classify the debt as non-performing and not just the japanese banks the chinese banks before they were privatized the american banks during the global financial crisis the european banks during the sovereign debt crisis you name it okay so very important because the real level of non-performing loan is often very different from what it appears because banks are very very good at looking at what makes a loan a non-performing loan and then negotiating with customers as often as possible to try to keep the level of non-performing loans the bad loan problem under constraint okay indian banks are also very good at that game very very good okay i don't think of any country that's not really good at that game okay so the impact of classifying it as a bad debt is very bad because then you have to take the loss which has to be absorbed by your capital basically and also your level of provisions and level of bad loans compared to your competitors so then you look bad the f you know if you have more bad loans as a proportion of your total asset than your main competitors and you look bad so your reputation is set and your clients will want to deal with somebody else and your counter body risk doesn't look good and your debt rating goes down so you can be downgraded so all kinds of really bad consequences right so be aware of that all right so it's very important you understand the dimensions of credit risk because it's such a fundamental risk in the banking business all right now there are many many different aspects of credit risk when you're running back the first one that's the one we've been talking about is when you're dealing with borrowers on loans and typically corporate borrowers then you also have counterparty rates so i've been using that term but what does it mean counterparty is the other side of a trade so if i'm trading foreign exchange let's say i'm trading for an exchange with eton so i'm selling him us dollar and buying in exchange i'm buying hong kong dollar so obviously he does the opposite i'm taking a risk that when i'm selling him the us dollar expecting to receive hong kong dollar he's not going to send me the hong kong dollar but i will already have sent the us dollar so i'm taking a risk that he will not deliver on what he's supposed to do that is counter body risk so whenever you're trading you have counter body risk okay it's a form of credit risk because it's the risk that the other side will not perform their obligations when due now you have country risk country risk is when you're operating in a country that is not your own and you are therefore exposed to all kinds of possible bad stuff that can happen can you think of bad stuff that can happen to you when you're operating in a different country so iton credit risk and reputation risks are very different credit risk is the risk you're not going to receive something you entitled to reputation risk is that your reputation will become very bad that's not necessarily a tangible money risk okay country rating downgrades yes but what does it mean songhaq in terms of my business mankind regulations yes you could have regulations to deal with different legal systems so that's not strictly speaking country risk okay country risk is something where you might lose money because something happens in the country where you're doing business okay so the legal risk exists but it's a different kind of risk political unrest and instability yes cultural conflict is not a monetary risk so much it's more an execution risk okay natural disaster is a different kind of thing it's an operational risk but what can happen so all right economic risk yes you might have economic risk because you're dealing in a different country the country can go to war or can have conflicts then what is the impact right so the the problem is that your business might be destroyed your people might get killed or taken hostage yes all of that so when you're dealing in another country part of your analysis of the risks of doing business in that country will look at what is the risk of conflict the risk of wars the risk of unrest what else means of production can be ceased yes expropriation nationalization absolutely okay so when you're doing business in another country you have to analyze the risks the political risks that might result in your inability to operate your business in your inability to get the money out of the country you know the damage to your assets property to your people etc okay so country risk is a very important dimension now you can hedge part of it through credit insurance from export credit agencies okay now we can also have industry risk so when you think about industry credit risk is risks that you might not receive your money when due because of something that happens to the industry to which you are exposed so can you think of some dimensions of industry risk new regulations yes very good which industry right now would be very subject to changes in regulations fossil fuels very very good change in technology so the risk of obsolescence right the risk of obsolescence all right what else what's one characteristics of some types of industry like shipping like property like chemicals okay so tariffs will be a dimension of political risk because they're typically imposed by the country but industry think about the nature of the business chemical industry uh shipping industry rise and fall of demand physician very good they are very cyclical okay you have some industry that are very very cyclical so depending on when you get in at what part of the cycle it can be very risky so shipping for chemicals are very well known as cyclical industry okay uh okay natural disasters that would be operational risk because natural disasters is not industry specific but it is you know a phenomenon of nature that is going to impact a lot of different things all right so you have industries that have cyclical risk that have regulational risk that have obsolescence risk you also have very important reputational risks if you're engaging with certain types of industry can you think of any but some of your shareholders will not be too happy if they find out weapons manufacturing very good that's one industry defense that is very controversial tobacco yes if you suddenly find that it's an industry that's using child labor prison labor all right what do you mean by pep you mean the chemical or politically exposed persons a politically exposed person okay so that's more in the corruption it's not so much industry specific it's more reputational risk we talk about this later money laundering that kind of thing um but you have things like gambling defense industry uh you know uh that kind of yeah well cannabis for sure the in in the us banks yeah they don't get involved because for so long drugs have been illegal right uh so think about you know the risk that you're taking if you're engaging with an increasingly yes somehow carbon intensive industries fossil fuels all that is becoming uh very very bad for banks who are financing some of these industries okay now uh consumer risk is similar to borrower risk but at the retail level so when the bank is doing retail banking it's the risk that their consumers will not pay back the loans that they owe to the bank and then you have settlement risk the settlement risk is linked to counter body risk so it is the rest that something happens in the period of time when one party pays and the other party um has to pay the counterparty so it's it's very hard to distinguish the two but that settlement risk is the reason why we tend to have collateral and margin calls okay now so there's like many different facets and many different angles in credit risk so what can the banks do about it well to start with you have to identify the risks right so the first step is to decide what risks are we comfortable with and what risks we don't want to take so your credit policy will determine the kind of risk you are happy to consider and the kind of risk you want to exclude and then within the credit policy you can set limits so i don't want more than x of my portfolio in china i don't want more than x percent of my portfolio on shipping so credit limits can be uh country limits industry limits and then more specifically on one single client so that's concentration limits so a prudent bank doesn't want more than a sir a small percentage of its total portfolio to be concentrated on one customer which is exactly the opposite of what green cell capital did they had high concentration very very high concentration on basically two customers okay so concentration it can be a significant risk which is why regulators will often impose concentration limits now you can also use tools tools like credit scoring so i talked about it before credit scoring is a methodology to try to identify risk at the consumer level okay so at the consumer level we talk about credit scoring uh we use credit bureau is linked together okay at the corporate level we talk about ratings so basically it's the same idea it's a methodology to try to identify key aspects of risk and then weigh them by importance and then give a score or a rating that tells you the probability of default of the corporate if it's a credit rating or the consumer if it's a credit score okay now let me talk about netting because netting is a super duper important uh thing when particularly when you're doing uh trading so netting comes from net as opposed to gross okay so imagine that um let's say i'm trading with roman all day i'm doing foreign exchange so i'm exchanging euros for us dollars all day long so we do spot effects all day long okay so i am doing spot effects with roman so today i buy 50 million us dollar versus euro then a little bit later i sell 20 million then in the afternoon i buy 20 million and then i sell 50 million okay so i've done four trades with roman what's my exposure to roman ah-ha yes you're sure well it depends ha it depends if we're talking about net or if we're talking about growth okay net is i net out the size so i have zero at the end of the day but my gross exposure is 140. you see the difference i can only use net exposure if i have a netting agreement in place with roman okay so when we talk about regulators later you will see that has a very significant impact on how you calculate some of the prudential ratios whether you use the net exposure or the gross exposure okay the industry uses a lot of netting but you have to have agreements in place between the counterparties before you can do that otherwise you are stuck with the gross exposure which is of course much bigger so if you have the ability to net the transactions then your exposure is much smaller than if you don't okay this is also one of the reasons why when we have some time to settle the trades you know the t plus one t plus two gives you time to do the netting if you we're doing everything real time then you would have to do every transaction which amounts to gross transactions okay what is the significance of exposure what do you mean roman i don't understand your question roman what is that question i don't understand i'm i'm not sure what uh what exposure is and why it's bad or good to have more or less exposure is the risks that you have so i am exposed to borrower risk country risk industry risk trading risk so when we talk about risk it is the exposure is the amount at risk does that help okay all right so you understand the difference with nat and growth right it's really important to understand that you can only do that if you have the agreements in place if that is allowed okay all right so let's have a look at the video from our group four well no this one in the us but you're buying non-performing loans in southeast asia and you're on the lookout for more so can you tell us about some of the options uh professor we can't hear it you're not sharing the computer sound we are we keep our eye on sorry sorry sorry sorry your bond offerings in the us but you're buying non-performing loans in southeast asia and you're on the lookout for more so can you tell us about some of the opportunities you see there sure well we're buyers not only of non-performing loans but also issuers of loans where other more conventional sources are not available um in southeast asia we have we've bought npls in indonesia and have continued to look for more we are very focused on special situation real estate lending in thailand uh we are also looking uh quite a bit in the philippines um in addition to that we are we keep our eye on china and india which are kind of the big names um interestingly enough over the last four to six months we've started to get calls on hong kong uh that we haven't seen in many many years um obviously that started before the virus and actually around the time of the protest etc we haven't seen credit appropriately priced in in china and in india as much as we'd like to there are tremendous uh npo npl volumes there but npl's at the wrong price are remain npls uh and except they become yours uh so we're not we're not there yet uh but we're spending a lot of time focusing on it you do say there's plenty of liquidity out there but is it getting to the right place uh well i think uh it's it it is if you're a seller right and you're talking about very large volumes not only of bank loans but also corporate bonds now in china and in india you've most recently seen some real failures in the non-banking finance company uh space that are making people start to really look hard at the appropriate uh pricing of risk i said i don't think it's there yet um it's been too easy and we think it has a long long way to go down but we're certainly focused on it dan you talked about opportunities in hong kong since the protest what exactly and how do you view the risks there well you know i've been investing there uh since the 90s um certainly things are evolving the degree to which you have a recognizable system of credit resolution is not quite what it was then the kind of things we're looking at are basically um shorter term bridge loans and and um secured loans on real estate for a long long time there were a whole series of local folks there powered by very easy financing from the banks that had that occupied that market it's interesting to think that uh perhaps they may not be there as much uh but net i think we're long-term sanguine on on on value uh you know certainly as long as there's a lot of subordinated value below us as we think about uh the levels of which we're going to lend obviously we wouldn't be pouring ourselves in there right now given the uncertainty but we certainly think it's worth spending time on but when you talk about real estate there are views out there that could be a property crisis in hong kong your take your assessment everything at a price right there's a lot of data you can look at it you just if something's worth was worth a dollar yesterday uh and that same thing might have been worth 50 cents uh 10 years ago and you're lending 25 cents you still might be okay yeah it's all about thinking about where does this asset trade in a as an example in october of 008 or an august of 98 type of market and am i materially covered by that level so you know that can be bracing for people kind of who who are used to very very easy benign markets like we've had for the last thousand years we've spent some recent days traveling around this part of the world and i like what you say about real estate landing here in australia and new zealand as well it's a special situation that almost sounds like a euphemism for something less polite i wonder if you could tell us more well uh sometimes you know sometimes it means helping uh folks play offense as well uh certainly uh there's been a tremendous amount of property lending in australia and elevating housing prices we haven't seen real opportunities in australia yet i think there will be some real backing up of things at some point soon for a lot of reasons in australia we focus more on structured finance and corporate situations the banks have really pulled back uh from everything other than residential mortgage lending uh i and i do think that there are going to be a lot more opportunities to pursue in new zealand there is a tremendous housing shortage so while residential mortgage lending is readily available lending to create more houses on which mortgages will be borrowed uh is not really available and so we've been uh working uh with a variety of uh developers um with uh in partnership at times with the new zealand government to kind of help help mitigate that 50 to 100 000 home shortage okay okay so that was a very nice video and then they also shared this uh report from uh snp uh that was back i think uh last year uh in 2020 so when the crisis hit there was a lot of concern that the banks would have massive portfolios of npls that hasn't really happened at this time all right so let me get back to my slides yep okay so the next dimension of risk we're going to talk about and we've already talked about it when we were talking about the the dealers and the market makers is market risk so market rates can uh have dimensions of interest rates foreign exchange equity commodities basically any time that asset prices are moving then you are exposed to uh market risk so how to deal with that well basically again you need to have policies in place so that would be your risk management policy your asset and liability management policy can provide you with a natural hedge a balance sheet hedge for some of this risk for example on foreign exchange hedging policies so hedging means using another instrument where the results of the market movement will be the opposite of your existing position right so for example taking um the opposite position with a swap or an option but you have to be careful when you're doing hatching because then you are very often taking counterparty exposure so you might be hedging the foreign exchange risk or the interest rate risk but then you are taking counter body exposure okay um then liquidity so liquidity we've talked about it as well there's two fundamental dimensions of liquidity risk one is the funding liquidity risk which is when i do you have access to the funding you need when you need it okay so sources of funding available to you the other dimension is the market liquidity risk that is how quickly can i liquidate some of my assets against cash at the lowest possible price difference in transaction cost so the two very important dimensions of liquidity risk so again you mitigate this with your asset and liability management policies your funding policy to having a very conservative funding policy diversification of your funding sources using conservative ratios having enough cash and reserves cushion to absorb uh extraordinary liquidity events so we've talked about this when we were talking about liquidity management so this should not be new to you all right and always remember liquidity is relative it's always there when you don't need it and never there when you do okay so it's one of these things that is very difficult to get your head around how to define a liquid assets because it is so very relative to the markets in which you are and then we talk about operational risk so operational risk is you're exposed to in the way you operate the business so in your operations what are the risks that you might lose money okay so there are many okay this is not limitative this is non-exhaustive inadequate information systems if your information systems do not give you the information you need or do not give you that information in time then you will not be able to make the right decisions your systems might break down now this has been happening a lot more these days because the design of the technology backbone of the banks goes back to a time when there was no internet and no broadband and no mobile internet and no internet of things so the systems are not designed to handle so much data so very often you see operational breakdown you can have bridges in internal control you know that has to be linked to i.t security right what about hackers now there's been two huge hacking incidents in the us recently one the most recent one has to do with microsoft exchange email okay we all have we use outlook okay so we are all potential victims of this kind of fraud and and hacking and then just before that you had the silence hack that touched pretty much everything in the united states so if your i.t security has been breached if you have hackers into your system then it can be really bad because they can steal data they can steal the money they can uh crash your system so you can no longer operate this is really really bad unforeseen catastrophes so catastrophes can be man-made or they can be natural so with climate change we are seeing an increase in the probability and severity of natural catastrophes you also have the probabilities of man-made things terrorist attacks in certain regions all of these the risks have increased very very substantially in the past few decades and then risks of fraud that have always been there that are recurrent you have rogue traders you have all kinds of frauds possible and every day there's new examples in the press and and so on and so forth right so there are so many ways that banks can suffer operational risk some of it come from their own security some of it comes from rogue agents some of it comes from the way the systems are designed uh some of which is an act of god okay so all of these things uh not to mention pandemics and stuff like that right so so what can we do well again you have to have a risk management policy in place and that risk management policy needs to try and anticipate even those extraordinary events what we call the black swan events after nasim taleb all right once you have tried to identify then and quantify then you try to think about okay if we are faced with one of these extreme events that threaten our business continuity what can we do do we have backup plans in place do we have recovery plans in place and you need to have those you need to try and think what can i do if my building is hit by an earthquake so that i can continue operating what can i do if my entire trading floor catches the plague okay whatever plague it may be what can i do if my building is flooded by a tsunami all right so all of these means you need to anticipate as much as possible now do you know what events banks plan for set up all these backup and recovery plans and it did not happen about that's right roman y2k very good y2k the millennium bug so can anybody tell me about that and your classmates about the millennium bug want to share yeah that millennium chitao but tell us what it was about somebody tell me what it was about do i have some engineers in this classroom computer goes boom when he turns 2000 years old come on engineers talk to me okay fizzy shy talk to me yeah um there was this belief that computers were going to have like a bug when the year would turn to 2000 because because before that it always has been like 1999 or 19 something and that it would like um i think like the calendar and all the storage and stuff like that and the computer was gonna um be messed up so they were all scared but why roman do you know the answer i can't hear you come on hello yes um i don't know much more than the tribe but it's basically that by switching from uh 90 base to 2000 would it would uh the computers couldn't handle that or they thought they couldn't handle that so they thought that everything was going to break down yeah why uh professor maybe because the computers wouldn't encode it and they had concerns whether computers were encoded to handle that change in the calendar system and whether they could uh they had enough data for the uh coming years for the 2000 onwards and whether uh they could handle that change the court whether the systems were prepared for that change i think i don't know song i heard that because the date in 1990s um and 20 centuries were recorded as like if 1969 they just kept as a 69 so when it turned into 2000 they the record is 0-0 and that is confused with the 1900 very good so yes hollis has written also the way the computer scientists were coding they didn't want to use too much space so they when they put the years they were only using the last two digits so of course when you change millennia that was a problem okay so everybody was freaking out about that the banks spent a lot of money a lot of money sending engineers to check all the lines of code to try and fix the problem and i was still working in banking at the time and i have nothing to do with engineering but i can tell you that all the senior management of the bank was on duty at you know the evening of the 31st of december 1999 just in case the computer would go boom okay and the computer didn't go boom maybe because so much money had been sent spent on trying to fix this thing so we had plans in place about what if this happens what if our computers go boom right actually some computers did go boom but not in the first of january 2000 a few years later some i thought do we have any german students in my classroom but there was a germ roman have you heard about a german bank who had problems like that just a couple of years later right one german bank adm stopped working so this was kind of like a delayed millennium bug or something like this so so the bank spent gazillions of money fixing the millennium bug which did not actually happen but then there was a big crisis that nobody had foreseen and then we used the backup and recovery plan you want to know what that was anybody which crisis totally unforeseen nobody had planned for it but the backup and recovery plans that the banks had in place were activated 9 11. that is correct so in the u.s 9 11 what about hong kong the source very good so in both cases these were totally unanticipated events so when the stars hit in hong kong i my husband and i were there my daughter was just a few months old my boy was three years old and it was very scary the sauce is a lot more lethal than covered and my husband was working in the trading floor of success so sakten activated all the backup and recovery plans that had been drawn a few years ago they split the trading floor team in different locations they activated their recovery and backup sites just in case just in case and then my husband because he was not a trader but more origination he was working from home already at that time okay so backup and recovery plans are very important because you want to ensure the business continuity if something happens that is low probability very high severity okay now to deal with conflicts of interest remember we talked about conflicts of interest segregation of duty is a classic in banks okay so you don't want the dealers or traders to be in charge of the back office okay because you don't want things to happen like bearings and nick gleason or you don't want things to happen like your home caviar and sock jan whatever his name was at credit suisse so to try to mitigate the problem of rogue traders separating the trading function from the execution function segregation of duty is a big classic now you can also mitigate some of the risk by outsourcing it to specialists for example you can outsource your back office to um other firms in other places in that case you also have to be very careful visa via customers who is responsible if something goes wrong you can also of course have regular audits so if you have policies in place you must make sure that the policies are actually implemented there's not just the paper there that they're implemented they're updated that everybody is aware of them and they are actually being enforced okay so this is just a few of many many many many types of operational risks that banks are confronted with on a regular basis you should be aware that things related to technology it's a very sensitive point for the banks because in kanban banks like banks that have been established for a couple of centuries their whole i.t infrastructure dates back to the 70s and 80s and has been patched up and as they grew by acquisition you have different systems that don't necessarily talk very well to each other so there have been a few banks that where the systems have crashed because they cannot handle all the data that's flooding in for example in the uk i think it was the royal bank of scotland because computers crashed for a while because there was too much overload of information and it's very challenging for banks because you want to keep your operations going and yet you want to take on new technology but it's very difficult to do both at the same time so one of the huge challenges that banks face from the competition from fintech is that fintech and technology platform have brand new technology because they're new but the banks have systems that were designed a long time ago using now can anybody tell me which and i'm drawing on my engineering students if you're around which computer language aha harley says jammed in are you an engineering student hollis yes i'm a cs student kobold yes kobold is vital to critical infrastructure yet is no longer being taught so the few remaining experts in kobold are very old so if you learn kobo very well and you're very familiar with it you're worth a lot of money way more than python anyway so let's have a look at the video that group six has identified for us in terms of operational risk and used to buy luxury real estate expensive works of art and even to scandal is one of the greatest financial frauds in history four and a half billion dollars was allegedly misappropriated from the malaysian state investment fund and used to buy luxury real estate expensive works of art and even to produce a hollywood movie about of all things financial fraud but how did they do it according to the us department of justice one strategy involved setting up bank accounts under fake company names that resembled real firms blackrock commodities global limited sounds a lot like the global investment manager while affinity equity international partners limited could easily be mistaken for the private security firm there's no law against this but it could help put investigators off the send another scheme saw money transferred to trust accounts at u.s law firms client confidentiality rules in the us mean these accounts are barely regulated making suspicious transactions difficult to find the doj alleges that firms like sherman and sterling and dla piper were unwittingly used to sneak a billion dollars from 1mdb into the us the third strategy allegedly employed is what the doj calls layering moving funds from bank account to bank account adding layers of complexity until the original source of the funds is camouflaged let's follow the money allegedly used to buy this pink diamond necklace for rosma mansour the wife of former malaysian prime minister and founder of one mtb najibrizak it all starts with a three billion dollar bond arranged by goldman sachs in 2013. that was issued by a wholly owned subsidiary of 1mdb incorporated in the british virgin islands and the proceeds were earmarked for a joint venture with a firm in abu dhabi but instead of heading to the middle east most of the money was transferred into an account at swiss private bank bsi in lugano from there the doj claims it was shifted to investment funds in offshore centers the money was wired by a correspondent bank account at jpmorgan chase in the us to two accounts of the singapore branch of swiss private bank falcon bank funds went back and forth between these accounts adding layer upon layer of complication gradually obscuring the origin eventually 681 million dollars were transferred from tanmore into a malaysian bank account held by najib razak a sum he insists was a political donation from the saudi royal family five months later most of it was returned the money bounced around accounts at falcon and dbs bank in singapore before a sum of 27.3 million dollars was according to the doj wired to jeweler marine schwartz to buy the necklace the complexity of these cross-border flows has made getting to the bottom of the one in db fraud painstaking and difficult but with malaysia's government keen to burnish its craft fighting credentials and claw back the money stolen the investigation shows no signs of slowing down that was an amazing story of course you've seen that prominent banks got caught into that and goldman sachs have actually been fined very heavily and had to pay back a lot of money and the reputation of a number of people has been very severely damaged and this is the corresponding article the fine this is a this is hong kong that is putting a fine uh related to 1mdb but the us of course has been um slapping them even more fines in the u.s all right so thank you very much to uh group six for this video and now we will proceed to talk about the last aspect of risk which is legal and reputational risks so again this is not an exhaustive list but there are many many problems that can arise related to regulatory risks so that is the risk that you take if you're not in compliance with regulations in the countries where you are operating money laundering can anybody tell me what is money laundering okay visit shai tell me oh it's kind of like in in the name like you're cleaning the money so you get money from like a bad source and then you make it look like it's like um legal and completely clean that's right absolutely right so you're cleaning the money because it's dirty and it's dirty because it comes from uh illegal sources so money laundering is a huge risk for the banks and the reason for that is that initially the uh us authorities tried to get wow lots of stuff into my checkbox here that's right so it all started with drug money okay so it started with the fight against drugs in the u.s and the u.s agencies and regulators trying to fight the drug cartels by going after their money so identifying the proceeds of crime and in particular drug traffic through the conduits in the financial system so what they did is they made the banks responsible for tracking the source of the money that the banks were transferring so the banks have a duty to identify the source of the money okay because then you can identify whether it comes from a legitimate business source or a dubious source and then money laundering principles were expanded after 9 11 to terrorism financing so it started with mafia crime drug cartels and then expanded to cover terrorism okay so money laundering is a huge thing and anti-money laundering rules are things that banks have to implement very very carefully in hong kong in particular i should say the anti-anti-money laundering rules are very very strict you should know hong kong people you should know that if you suspect you don't even need to make sure if you suspect that some money laundering is going on and you do not report it you can go to jail so you have an obligation a legal obligation to report any suspicion of money laundering because if you don't then you can end up in jail okay so very tough so you have many countries that have very very tough anti-money laundering rules even with tough rules it still happens now other things we talked about conflicts of interest so conflicts of interest can create lots of legal and reputational risks for the people involved but also for the banks involved non-enforceability of contracts so this is a risk that you often take when you're operating in countries where the rule of law is not as prominent as it is in places like hong kong or the us or developed countries so you have to be very careful because just because you have a contract does not necessarily mean that the contract will be enforced by the courts in the country where you go let me give you an example let's say you're a foreign bank lending money to a company some remote corner of whatever country in asia okay and that company employs a lot of people in that region the company defaults on payments you've tried to work it out it did not happen you go to the courts what are the chances that the courts local courts will find in your favor when the company is employing the vast majority of the population okay so this can be a big problem non-compliance with corporate governance laws such as carbon oxide can also land you in very hot water and have serious consequences okay so there's a long long list including environmental social governance issues so what if it turns out that that happened to my bank the bank i was working with first chicago back in the 80s it turned out that one of the banks that had merged with first chicago had finance slavery was all over the papers in chicago chicago has a huge um african-american population so there were riots there were riots all around the headquarters the the bank management was absolutely terrified okay so really huge hit on the reputation to the bank management and changed its entire credit policies to make sure something like that would never happen again that the bank reputation so they eliminated lending to any kind of business that could have a bad image or a hit on the reputation of the bank okay so you have um a few years ago morgan stanley helped a company in china raise money in capital markets and it turned out that company was using forced prison labor there was huge problem for morgan struggling okay so you can find uh yourself in very very bad situation if something like that hits you okay so what can you do about it well same old same old you'd better have policies in place you have to implement your sovereign oxley and relevant corporate governance policies you have to know your customer so kyc know your customer is very very important particularly related to money laundering okay by having policies in place to board the customers and knowing who you're dealing with you can protect yourself from situations hopefully of money laundering or at least you're doing you're demonstrating that you're doing all you can okay so kyc stands for know your customer you have to have legal and compliance department which have authority to take action even if the people who do bad stuff in the bank make a lot of money for the bank so if goldman sachs legal and compliance had been a little bit more powerful maybe they wouldn't have gotten involved with the trouble at 1mdb and of course you need to do audits and not just financial audits but esg audits as well all right so we'll for those of you who need to leave we'll wait three minutes past the time so that's okay you can leave any time um any questions emmanuel how do they prove you didn't report a suspected money laundering situation the honest of the proof is on you if they suspect and the circumstances as such that you would know of suspicious activity you are the ones who have to prove why you didn't suspect it it's very tough very very tough any other questions well we talked about liquidity risk before not just today all right bye-bye roman any other questions does it mean regular people or bank employee not suspecting it means everybody regular people as well shiraz what does se is social environmental and ethical it's what we use before we started using esg so many acronyms bye any more questions let me turn please check the announcement benson has sent an announcement about the midterm is forex the most liquid book so rise what's your question liquidable what do you mean by liquidable foreign exchange means exchanging one currency for another either immediately or over time so i'm not quite sure what you mean by liquidable oh yes yes foreign exchange is probably the most liquid deepest biggest market of all financial markets but it's not a capital market a huge market we're talking trillions and trillions of dollars every day okay why seeing if you have questions on logistics you can email benson okay if you can worried about that please email benson the rules so what's wrong with the rules benson can you oh i think benson has left why don't you send an email to ask benson about the logistics okay because he's already left now all right okay and bye bye everybody you