15.447: International Capital Markets Introduction

Jonathan Parker

Robert C. Merton (1970) Professor of Finance

MIT Sloan School of Management

Why learn about global capital markets?

USDRUB

Why learn about global capital markets?

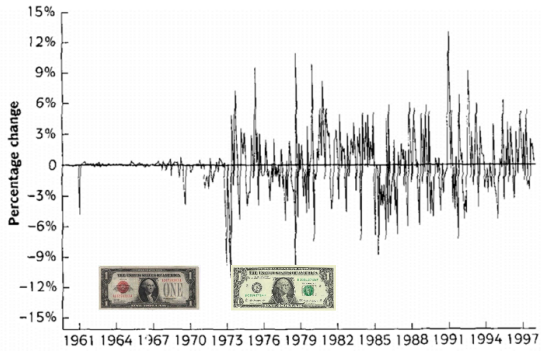
USD index
(up=appreciation)

Ten year government bond spreads

Country	Latest yield	Spread vs bund	Spread vs T-notes
Australia	1.06%	+1.58	-0.04
Austria	-0.40%	+0.12	-1.50
Belgium	-0.36%	+0.16	-1.46
Canada	--	--	--
Denmark	-0.43%	+0.09	-1.53
Finland	-0.38%	+0.14	-1.48
France	-0.32%	+0.20	-1.42
Germany	-0.52%	--	-1.62
Greece	0.70%	+1.22	-0.40
Ireland	-0.22%	+0.30	-1.32
Italy	0.55%	+1.07	-0.55
Japan	0.03%	+0.56	-1.07
Netherlands	-0.47%	+0.05	-1.57
New Zealand	1.11%	+1.63	+0.01
Portugal	0.00%	+0.52	-1.10
Spain	0.06%	+0.58	-1.04
Sweden	0.08%	+0.60	-1.02
Switzerland	-0.46%	+0.06	-1.56

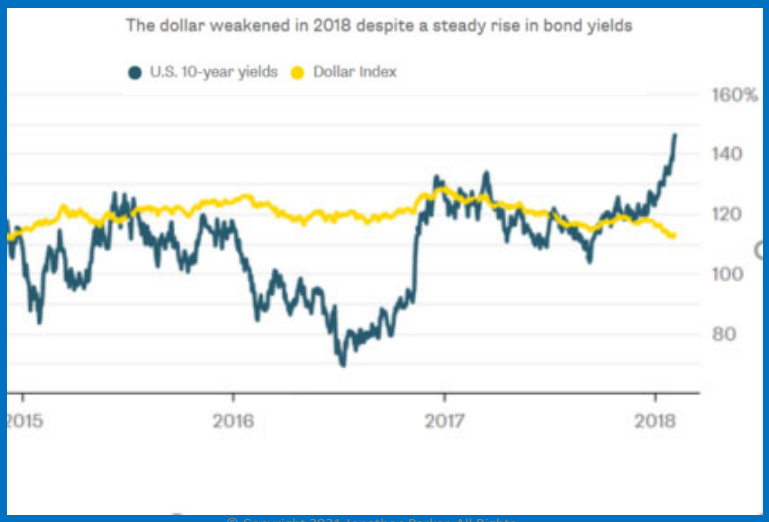
Why learn about global capital markets?

Monthly percentage change in the German DM-the U.S dollar exchange rate.



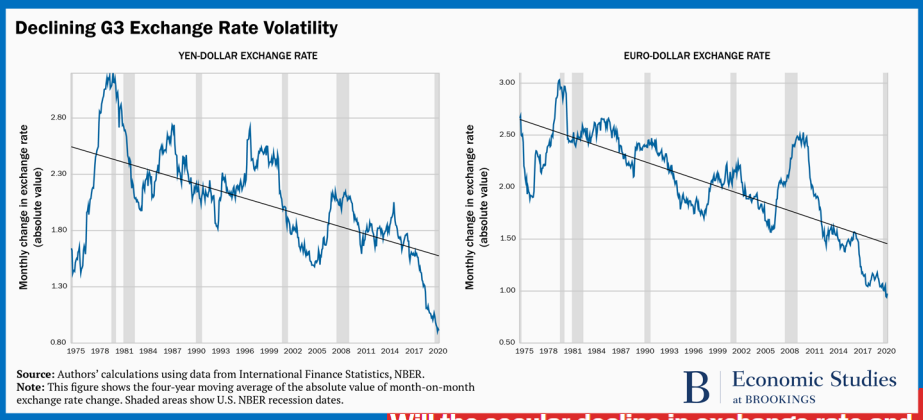
As 10 year interest rates rose early 2018, dollar declined

Will cover how exchange rates respond to & drive interest rates



Exchange rates are volatile

Class discusses how/when to hedge your portfolio or business



Class includes discussion of current events

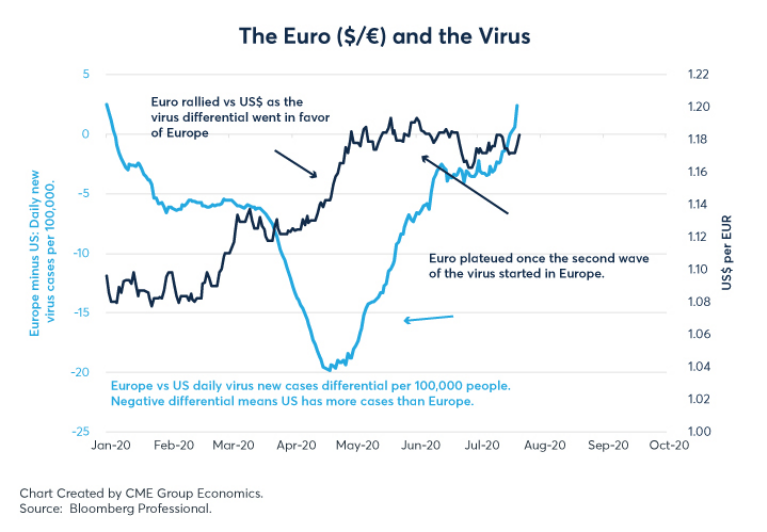


Chart Created by CME Group Economics.
Source: Bloomberg Professional.

1.1 To protect your financial strategies

1. Why learn about global capital markets?

Foreign currency profits rise or fall in dollar terms due to unanticipated exchange rate movements.

- Suppose $1 = ¥100 and you buy 10 shares of Toyota at ¥10,000 per share.
- One year later the investment is worth ten percent more in yen: ¥110,000
- But, if the yen has depreciated to $1 = ¥120, your investment has actually lost money in dollar terms.
- Alternatively: suppose that you were raising capital by issuing debt or borrowing in Yen?
- We will cover strategies to predict, protect, and profit

1.2 To protect your profitable trade relationships

1. Why learn about global capital markets?

Foreign currency profits may evaporate in dollar terms due to unanticipated unfavorable exchange rate movements.

- Suppose you are purchasing components from China for 100 Yuan/unit
- At the exchange rate (6.6 Yuan/$): $15.15/unit
- The Yuan Renminbi depreciates to 7.5 Yuan/dollar. Each unit now costs you $13.33
- Your firm becomes more profitable
  - Glad you did not hedge
  - or sign long-term contract with dollar price

2. What do we cover in 15.447?

Description: the structure, participants, and economics of international financial markets:

- Details and structure: foreign exchange market structure and instruments, currency supply mechanics in different countries, derivatives, hedging contracts, trading strategies
- Depth and background: what is globalization? What is a currency? What determines the value of a currency? Price implications of arbitrage and equilibrium pricing.
- Three perspectives: asset allocation, financial manager, policymaker
- *Conceptual, macro-finance, policy analysis, not quant methods*
- Why take this course? Globalization. There is no escape.

3. Requirements of 15.447

Requirements: Read the syllabus!

Class attendance and participation (exceptions ahead by email to TA)

- Arrive before class, leave after class (part of participation grade!)
- Attend on Zoom with sound muted and camera on
  - If you step away, we can see that and not call on you
  - If your room is a mess, use a background
  - If you still want to mute camera, it's ok

Do the readings (Bekaert-Hodrick and course reader)

- I will announce when to do what readings

Grades:

- Cases, short written assignments, exercises (some group assignments)
- Major end of term group project on assigned topic
- Groups assigned randomly

Guest lectures

(dates subject to change if markets or portfolios require)

February 23: Lisa E. Mattingly
Director of Research, Global Asset Allocation at Fidelity Investments

April 6: Ed Bullister and **David Souza,**
Director of Research and Portfolio Manager at P/E Investments

April 27: Rodrigo Valdés, Universidad Católica de Chile, former Chilean Minister of Finance

May 6: Arvind Rajan
Co-Founder and Head, Basis Point Global Solutions, former Managing Director, Head of Global and Macro, PGIM Fixed Income Prudential Financial

May 30: Sadeq Sayeed
Chairman, Metage Capital Limited, former CEO of Nomura Europe

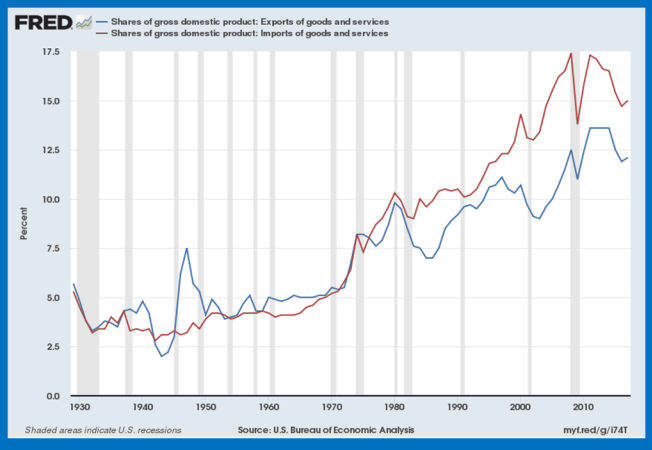
Introduction to Global Capital Markets

Lecture Outline

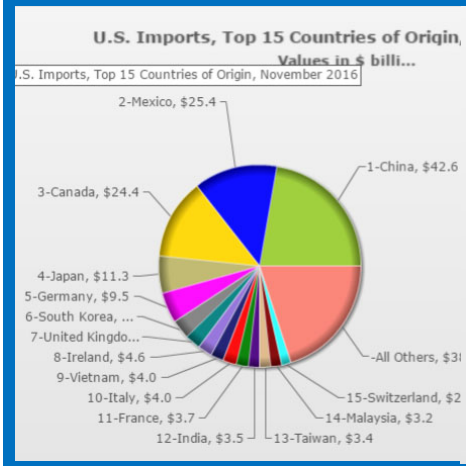
1. International goods markets
2. International financial markets
3. The centrality of policy and political risk

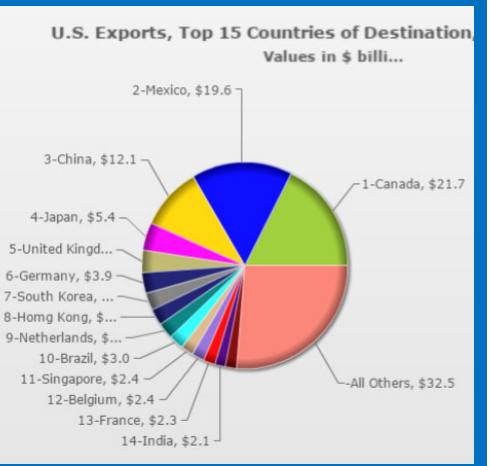
International trade in goods and services has been growing (until the last few years)

US International Trade

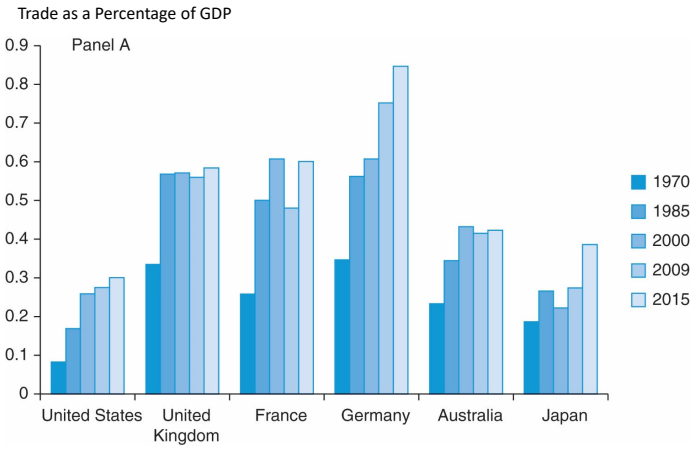


US Exports and imports by trade partner Determinants?





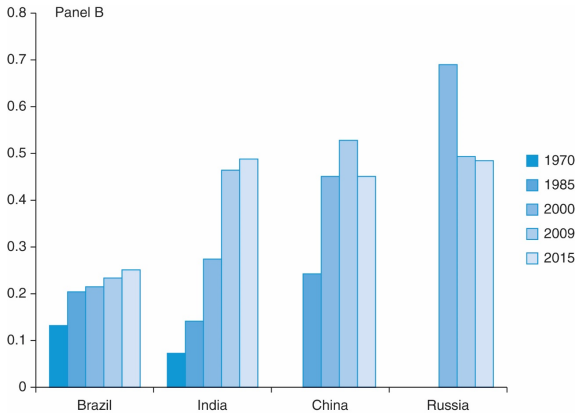
Openness to trade has been increasing



Note: The data are from UNCTAD and are the sum of exports and imports divided by gross domestic product (GDP), a measure of total output.

Openness to trade has been increasing

Trade as a Percentage of GDP



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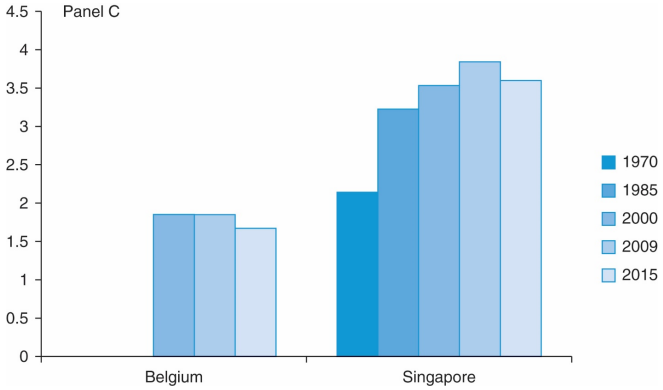
Wait, how big can trade get as a share of GDP?!

Trade as a Percentage of GDP



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Introduction to Global Capital Markets
Lecture Outline

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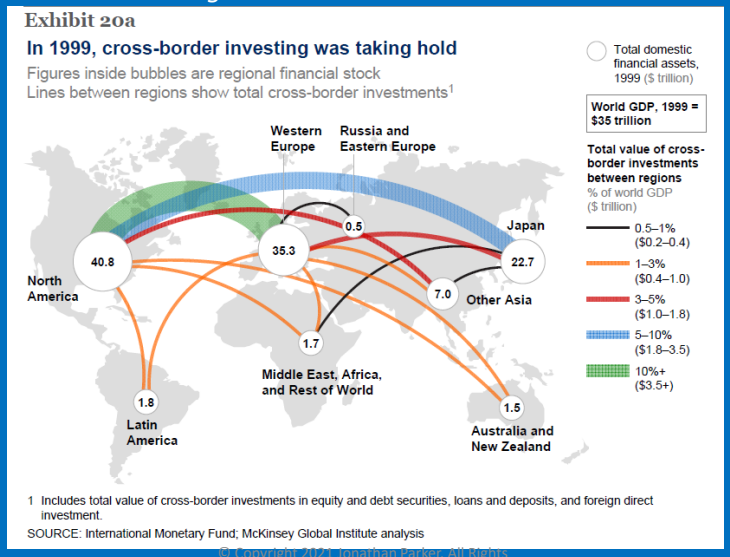
At millenium international trade in assets was a club of few
Cross-border investing in 1999



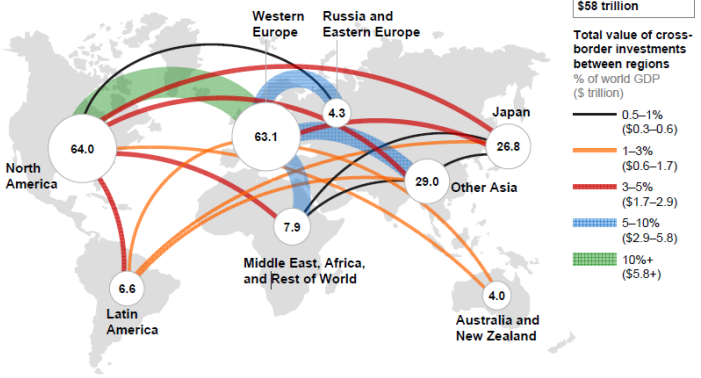
Int'l currency trade is ~ 100 times goods' trade!

Cross-border investing in 2009

Exhibit 20b

Cross-border investments had grown substantially by 2009

Figures inside bubbles are regional financial stock
Lines between regions show total cross-border investments[1]



1 Includes total value of cross-border investments in equity and debt securities, loans and deposits, and foreign direct investment.

SOURCE: International Monetary Fund; McKinsey Global Institute analysis

Corporations are major users of global capital markets

"Managing Risk Management" by Gordon M. Bodnar, Erasmo Giambona, John Graham, Campbell R. Harvey, Richard C. Marston, March 2011

We survey and analyze risk management goals, policies, and perceptions of risk managers in businesses and organizations around the world. With more than 1,100 responses and a global scope, we ask specific questions about risk management behavior in six risk areas: interest rate, foreign exchange, commodity, energy, credit, and geopolitical risk.

Table 1: Basic demographic characteristics of survey respondents
n = 1,161

Region (HQ)		**Industry**		**Size** (USD sales)		**Legal Form**		**Credit Rating**	
North America	45%	Basic Materials	5%	<$25m	13%	Public Traded	37%	AAA	10%
Asia	27%	Manufacturing	20%	$25-99m	14%	Private	45%	AA	20%
Europe	20%	Services	28%	$100-499	23%	Gov't owned	7%	A	18%
Rest of World	6%	Financials	35%	$500-999	10%	Non-Profit	4%	BBB	13%
No Answer	2%	Diversified/Other	10%	$1b-4.99b	15%	No Answer	4%	<BBB	13%
		No Answer	2%	+$5b	22%			NR or N/A	14%
				No Answer	3%			No Answer	13%

63% of firms face material exchange rate risk!

Figure 1a: Firms facing material risk - by risk area

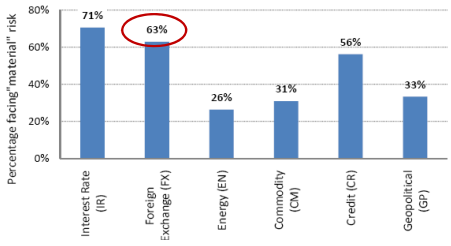
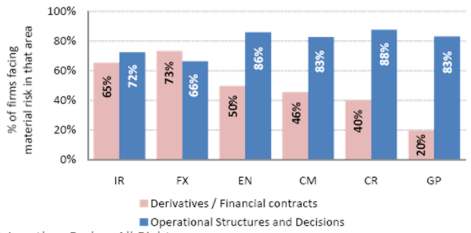


Figure 2: Firms managing material risk



33% of firms looks at its country's government finances when taking hedging decision: we need to understand that

Figure 5: Does your country's current account or federal budget surplus/deficit affect the amount and timing of your FX hedging strategy? Yes responses
n = 460

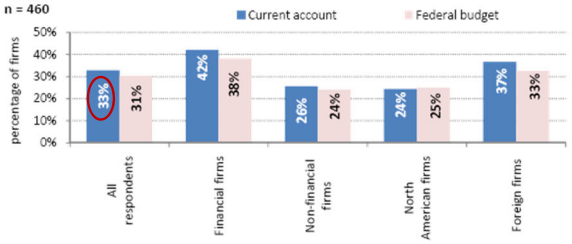


Figure 4: Percent of FX exposures hedged
n =138

We also need to understand some of the contracts used to hedge these risks

Table 19: Use of various foreign currency contracts /positions to manage FX risk

Panel A: Use of foreign currency contracts /positions (as percentage of all respondents)	**All firms n = 427**	Financial firms n = 180	Non-financial firms n = 240	North American firms n = 140	Foreign firms n = 280
a. Forward contracts	64%	62%	66%	55%	69%
h. Cross currency swaps	38%	54%	27%	36%	40%
c. Futures contracts	32%	45%	23%	33%	32%
b. Money market deposits/loans	31%	39%	25%	19%	37%
i. Foreign currency debt financing	27%	29%	25%	27%	27%
f. Exchange-traded options	17%	24%	13%	16%	18%
g. Option combinations (e.g., caps, collars)	17%	22%	13%	17%	17%
e. OTC options	17%	26%	9%	9%	20%
d. Non deliverable forwards (NDFs)	15%	22%	10%	9%	18%

Table 7: Most important reasons for not using financial derivatives n = 380	Num	%
a. Insufficient exposure to financial or commodity prices	132	34%
b. Exposures are more effectively managed by other means	71	31%
g. Costs of establishing and maintaining a derivatives program exceed the expected benefits	56	25%
c. Difficulty pricing and valuing derivatives	41	18%
f. Concerns about perceptions of derivative use by investors, regulators and the public	31	13%
h. Other	30	13%
e. Accounting treatment	14	6%
d. Disclosure requirements of the SEC or the FASB	9	4%

The rise of the Multi-national

(or "transnational corporation")

Definition: 10% or more of operations in two different countries

Different ways that MNC's are multinationals. Examples?

Complexity: interaction of corporations from different countries with different: Corporate goals, Legal environments, Culture, Organizational structures

Maximize shareholder wealth, long-view: Australia, Canada, U.K. and U.S.

Maximize stakeholder wealth: Europe and Asia

World's Top Non-Financial Multinational Corporations

Exhibit 1.3 World's top 25 non-financial multinational enterprises, ranked by foreign assets, 2015

(Millions of dollars and number of employees)

				Assets		Sales		Employment	
Rank	Corporation	Home economy	Industry	Foreign	Total	Foreign	Total	Foreign	Total
1	Royal Dutch Shell	UK	Petroleum	288,283	340,157	169,737	264,960	68,000	93,000
2	Toyota Motor	Japan	Motor vehicles	273,280	422,176	165,195	236,797	148,941	348,877
3	General Electric	USA	Machinery	257,742	492,692	64,146	117,385	208,000	333,000
4	Total	France	Petroleum	236,719	244,856	123,995	159,162	65,773	96,019
5	BP	UK	Petroleum	216,698	261,832	145,640	222,894	46,700	79,800
6	Exxon Mobil	USA	Petroleum	193,493	336,758	167,304	259,488	44,311	73,500
7	Chevron	USA	Petroleum	191,933	266,103	48,183	129,648	31,900	61,500
8	Volkswagen	Germany	Motor vehicles	181,826	416,596	189,817	236,702	334,076	610,076
9	Vodafone	UK	Telecommunications	166,967	192,310	52,150	61,466	75,666	105,300
10	Apple Computer	USA	Computer equipment	143,652	290,479	151,983	233,715	65,585	110,000
11	Anheuser-Busch InBev	Belgium	Food & beverages	129,640	134,635	39,592	43,604	140,572	152,321
12	Softbank	Japan	Telecommunications	125,485	184,325	42,437	76,313	45,036	66,154
13	Honda Motor	Japan	Motor vehicles	125,270	162,268	102,204	121,730	138,942	204,730
14	Enel	Italy	Electricity, gas, and water	124,603	175,806	41,619	83,962	34,874	67,914
15	Daimler	Germany	Motor vehicles	123,881	236,874	141,456	165,872	113,606	284,015
16	Eni	Italy	Petroleum	118,319	147,024	50,354	75,175	24,666	29,053
17	CK Hutchison	Hong Kong	Retail trade	118,250	133,280	17,224	21,511	239,552	270,000
18	Glencore Xstrata	Switzerland	Mining	114,941	128,485	115,640	170,497	135,656	181,350
19	Siemens	Germany	Machinery	113,020	134,995	71,048	93,958	135,720	348,000
20	Telefonica	Spain	Telecommunications	110,879	134,134	38,192	52,402	97,719	129,890
21	Nissan Motor	Japan	Motor vehicles	109,475	154,651	83,272	101,624	83,567	149,338
22	Nestlé	Switzerland	Food & beverages	101,977	124,590	90,607	92,215	324,115	335,000
23	Deutsche Telekom	Germany	Telecommunications	100,140	156,981	48,996	76,826	90,632	225,243
24	Mitsubishi	Japan	Wholesale trade	100,095	132,777	17,381	57,739	54,273	71,994
25	Allergan	Ireland	Pharmaceuticals	99,535	135,841	12,884	15,071	22,860	31,200

Ranked by Foreign Assets (in billions of dollars and thousands of employees)

Cross-border M&A is still small compared to financial flows

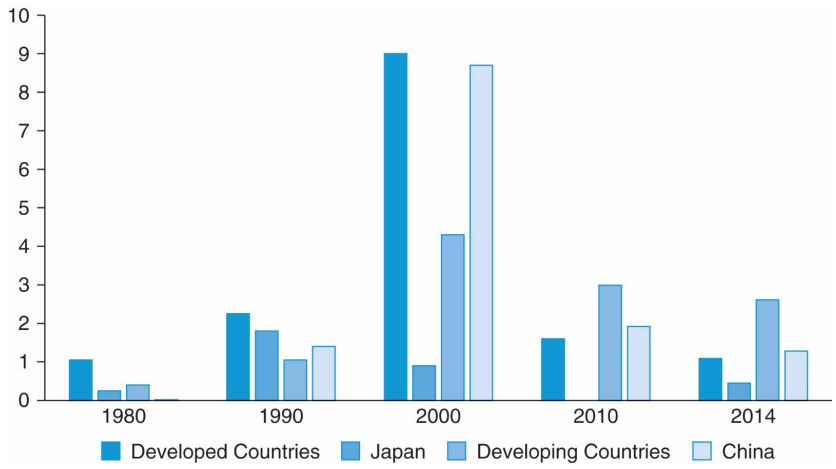
Cross-border M&A, 1990-2009 ($M)

Exhibit 1.6 Cross-border mergers and acquisitions, 2000–2015 (in millions of dollars)

	By purchaser			By seller		
Region/Economy	2000	2010	2015	2000	2010	2015
World	959,681	347,094	721,455	959,681	347,094	721,455
Developed economies	894,982	224,759	585,860	870,099	259,926	630,853
Europe	724,478	44,262	318,047	507,745	127,458	295,090
France	154,785	6,180	23,506	33,579	3,573	44,104
Germany	9,737	7,025	46,669	232,578	10,515	14,604
Ireland	5,985	5,124	97,480	3,665	2,127	48,049
Italy	18,439	(5,190)	3,101	11,300	6,329	14,269
Luxembourg	492	1,558	17,352	26	2,138	13,558
Netherlands	33,604	16,418	20,275	28,779	4,162	15,540
Spain	36,495	2,898	16,715	20,095	10,348	9,665
Switzerland	59,786	12,928	39,971	5,765	1,321	17,416
United Kingdom	339,546	(3,851)	34,955	112,160	60,826	71,047
North America	150,430	120,717	207,851	332,885	97,616	313,368
Canada	39,032	35,614	87,826	79,944	13,272	14,629
United States	111,398	85,104	120,024	252,941	84,344	298,739
Other developed economies	20,074	59,779	59,963	29,469	34,853	22,396
Australia	3,441	15,629	11,527	8,861	27,172	9,091
Japan	3,107	31,271	50,381	11,439	7,114	3,203
Developing economies	60,810	100,378	119,057	88,971	83,072	81,181
Africa	2,938	3,792	3,358	2,387	7,493	20,414
South Africa	2,934	1,619	549	352	3,653	20,969
Asia	53,181	79,865	110,342	52,771	37,723	46,398
China	(398)	29,828	43,653	37,875	6,758	9,660
Hong Kong, China	39,865	13,318	17,916	1,472	12,684	23,832
Korea, Republic of	1,286	9,952	563	6,345	(2,063)	(3,649)
Kuwait	(480)	(10,793)	731	0	460	868
Qatar	2	626	8,838	0	12	0
Singapore	7,504	8,963	21,130	1,397	3,859	4,977
Latin America and the Caribbean	4,323	16,725	5,340	33,811	29,013	12,134
Brazil	239	9,030	(1,654)	12,981	10,115	2,719

Cross-border Foreign Direct Investment

Percent of GDP



Participants in global financial markets

Global banks and asset managers	• ICBChina, HSBC, Deutsche, Credit Agricole, BNP Paribas, Mitsubishi UFJ, Barclays, JP Morgan Chase • Top 12 banks counterparties in 98% of U.S. spot volume • Blackrock: $3t
Sovereign wealth funds	• Norway $818b, founded 1990; Abu Dhabi $73b; founded 1976; Saudi Arabia $675b, China $568b, founded 2007
Governing and governmental organizations	• IMF member organization -- ensure the stability of the international monetary and financial system through surveillance and technical assistance • BIS, OECD, WTO, Word bank • European Union (EU); Economic and monetary union (EMU)

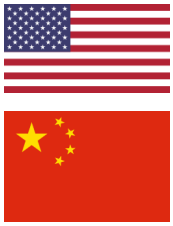
Introduction to Global Capital Markets

Lecture Outline

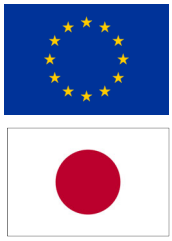
1. International goods markets
2. International financial markets
3. The centrality of policy and political risk

In global financial markets, political risks are central

Profits from exporting, global sourcing, or global portfolio strategies depend on political choices.



Sovereign nations have the right and power to issue currencies, formulate their own economic policies, impose taxes and regulate movements of people, goods, and capital across borders.



Examples:

- **The recent changes in the strength of the dollar – why?**
- **The path of global interest rates (topic for discussion class)**

In the mid-2000's markets expected the Fed to raise rates

Political risks are central: Example I

Treasury yield curve

Market thinks that US interest rates will rise over time

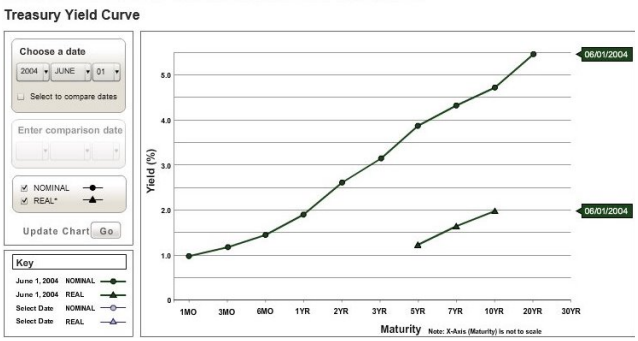
- As China stops holding the Yuan down
- As inflation picks up
- 20-year rate 4.65%

But instead China continues to buy US Treasury Debt

Then US financial crisis, Fed lowers short rates to zero, Euro crisis, US inflation very low dollar strong

Even through recovery, rate stays low

Today: rate very low again in time of COVD



Enforcement of contracts is subject to political risk

Political risks are central: Example II

Multinationals face challenges in enforcing contracts in foreign countries

Enron Dev. Corp (a Houston based energy company) signed a contract to build India's largest power plant.

- After Enron spent $300M, the project was cancelled in 1995 by nationalist politicians in the Maharashtra state.
- After investors all over the world invested in Enron, lack of enforcement and poor accounting practices allowed management to profit and bankrupt Enron in 2001
  - From revenue of $100bn in 2000 !
- Also see multinational corporations in Venezuela during Chavez

McDonald's…

«Earlier this year, Russian officials forced the fast food giant to close 12 restaurants because of sanitary violations. The move was widely believed to be politically motivated.»

The future value of a currency is subject to political risk

Political risks are central: Example III

is investing in Greek government debt a profitable strategy?

- What was the impact on the pound of Brexit?
- Is investing in high interest rate debt in Turkey a good investment?
- What if a country expands the money supply and this leads to high inflation?

Sovereign defaults in 2020: Argentina and Lebanon

≡ GREEK CITY TIMES

GREEK NEWS — MAY 17, 2020

Turkey is now top 3 country at most risk of bankruptcy

January 15, 2015 Swiss National Bank

Political risks are central: Example IV

Without warning dropped Swiss franc peg to the Euro

- **Swiss Franc was «safe haven» currency**
- **Desire for safety drove up its value**
- **Swiss exports 70% of GDP**
- **Central bank abandoned peg**

"On Wednesday one euro was worth 1.2 Swiss francs; at one point on Thursday its value had fallen to just 0.85 francs"
--Economist, Jan 18 2015

Conclusion: Example interview questions you will be able to answer at the end of this course

- Define covered interest rate parity and why are violations not arbitrage opportunities? what is a currency swap; should we hedge currency risk with a forward or an option?
- We have great products but are getting burned by exchange rate losses -- are exchange rate movements predictable?
- We produce in China and sell to Europe where we are listed and headquartered, how would you protect our revenues?
- What is the currency carry trade? What instruments do you use to implement it? Can we make more money buy buying long bonds instead of short-term debt?
- What would happen to the dollar if there were another global financial crisis, say caused by Greece exiting the Euro? Another pandemic?
- What are your views on the future of US interest rates? Would you issue stocks or bonds to raise capital today? In what country would you borrow?
- What factors do you see as important today for global asset allocation?
- Should we be transferring money internationally in Bitcoin?

Most important: you will have a framework to make the global financial decisions that you will face in five years