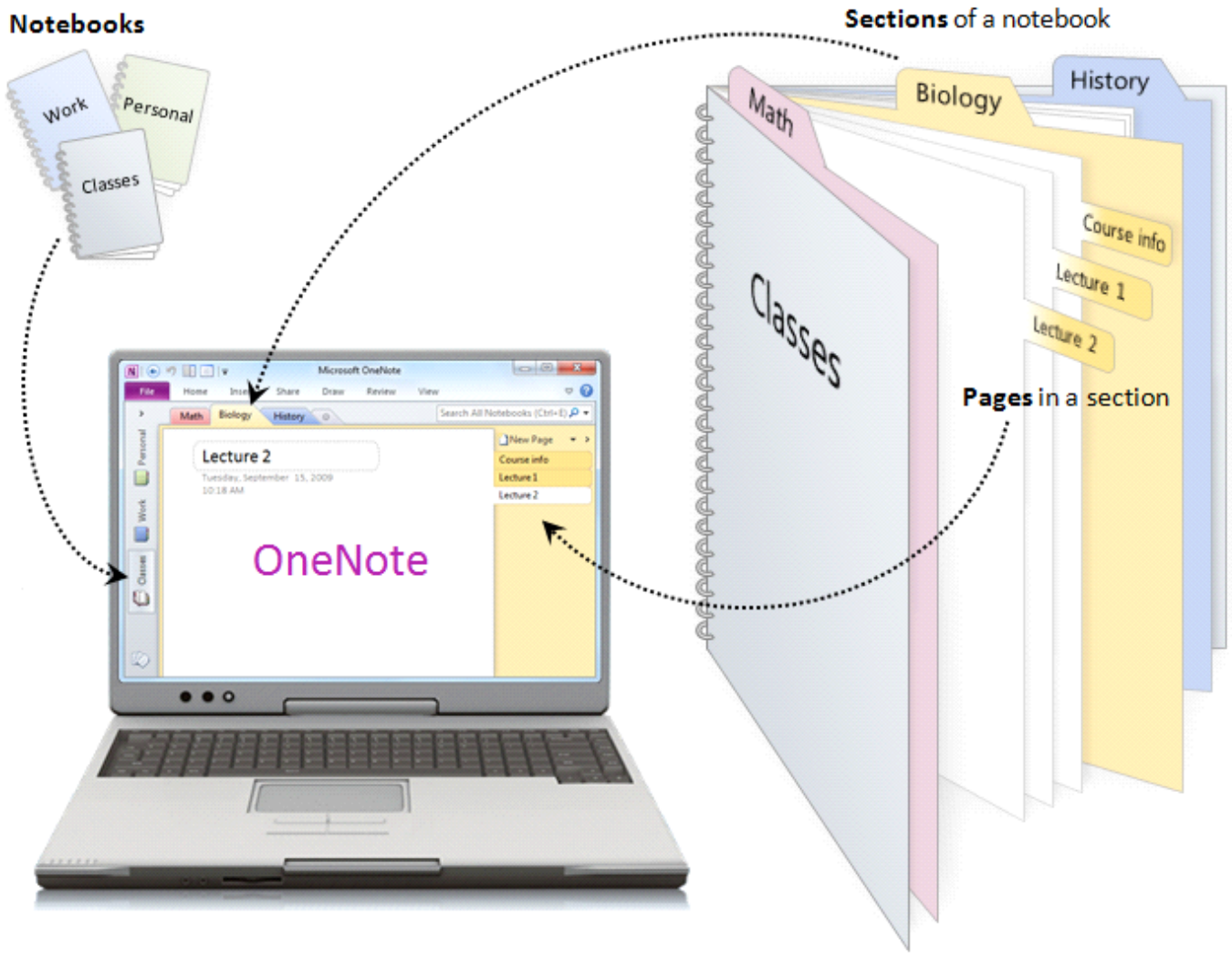
OneNote keeps track of stuff at Work, Home, or School

Gather, organize, search, and share
ideas, thoughts, clippings, lists, projects,
meeting notes, lectures, references,
event plans, instructions, journal,
etc. etc. etc.

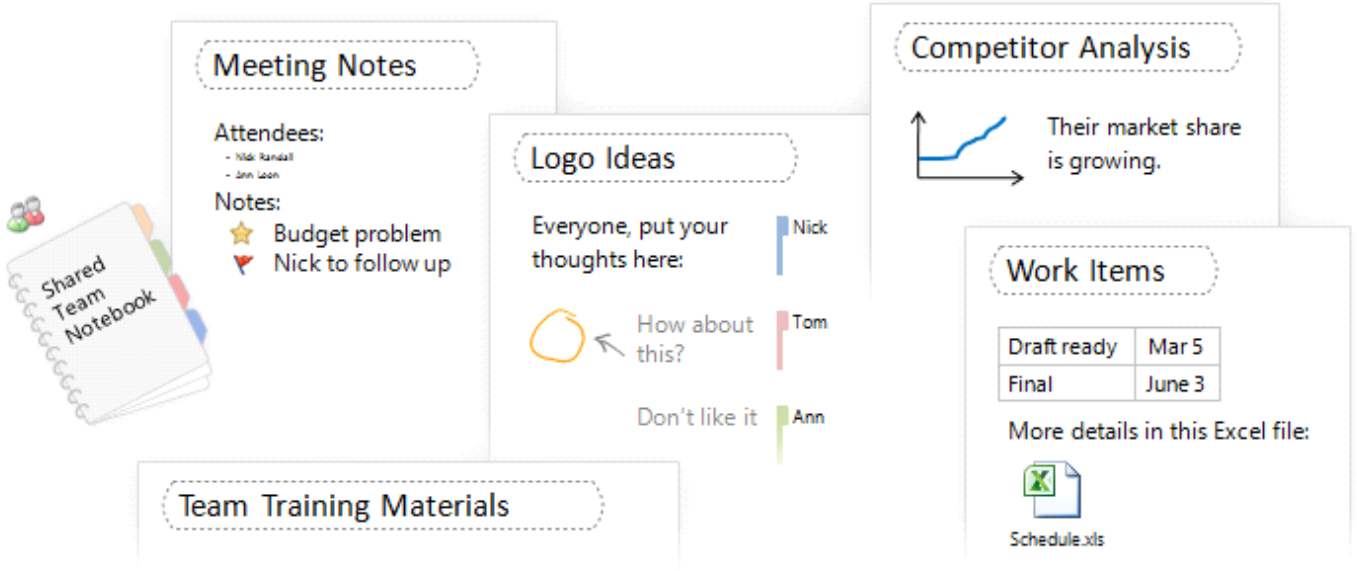
How are OneNote pages different?

You can type anywhere on the page.
For example, **type your name there**:

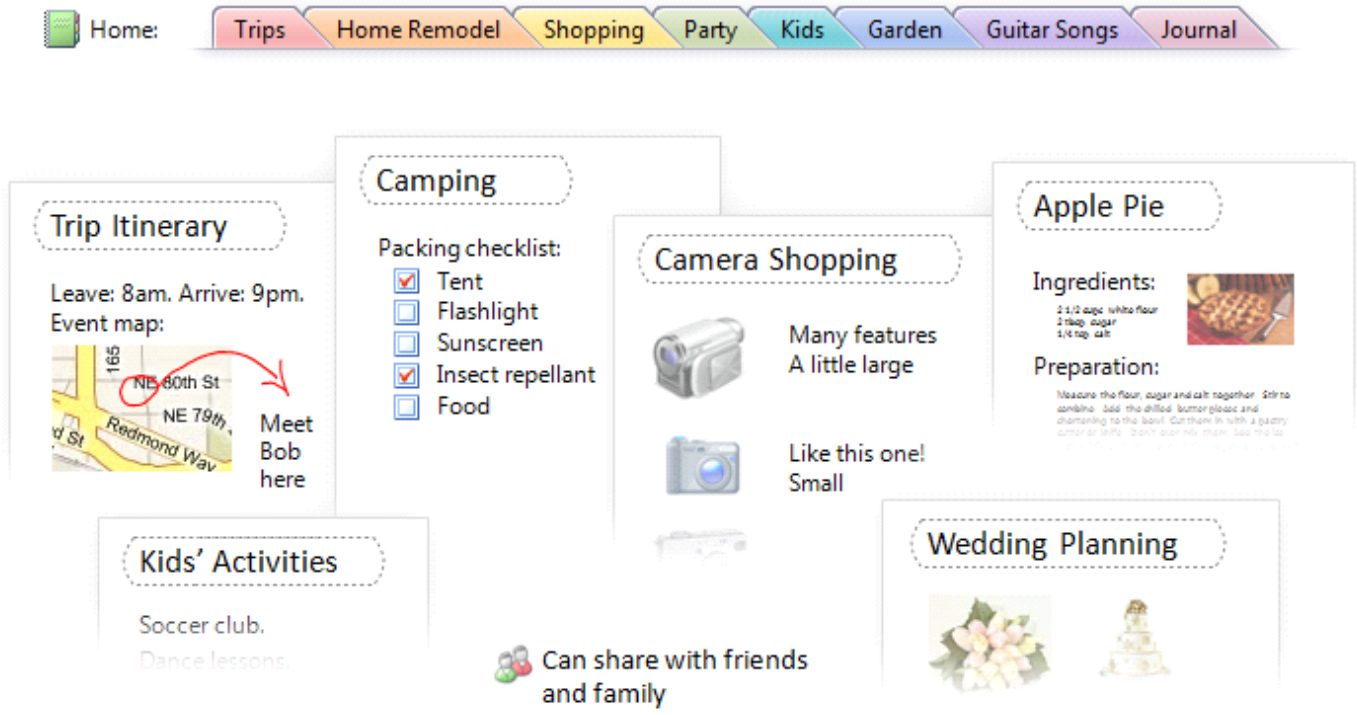
What are all the tabs?



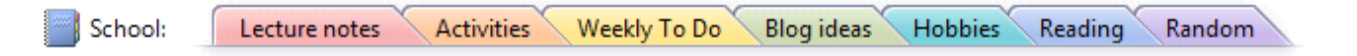
OneNote at Work

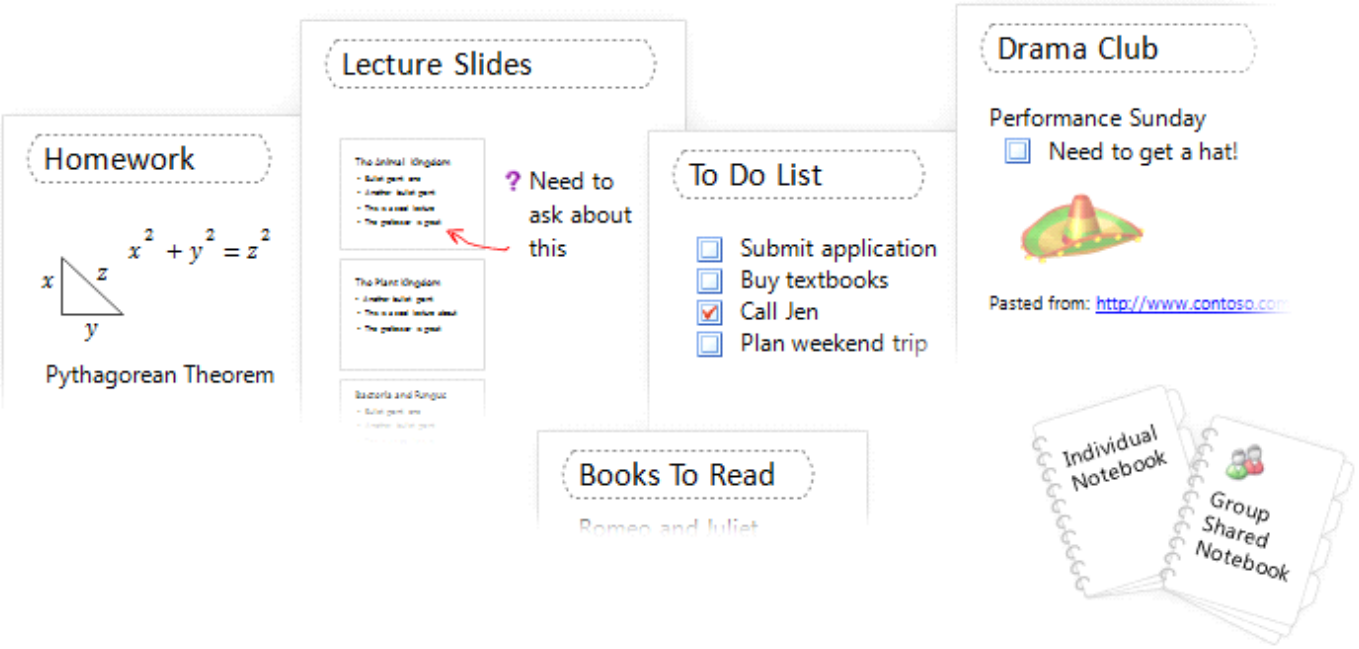


OneNote at Home



OneNote at School



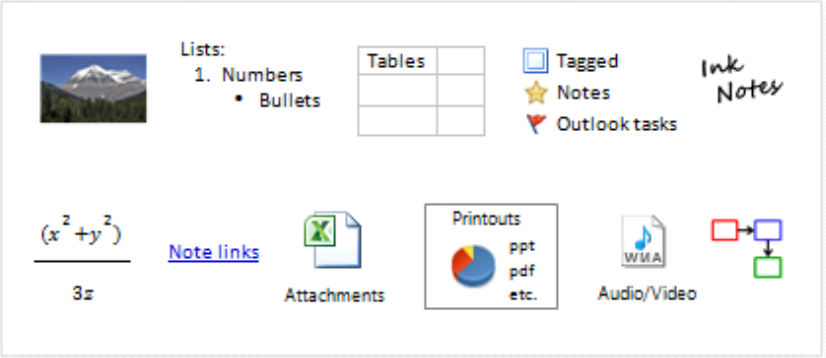


How does it work? Watch this 1 minute video:

Click here to play

Also check out the next page tabs over on the upper right.

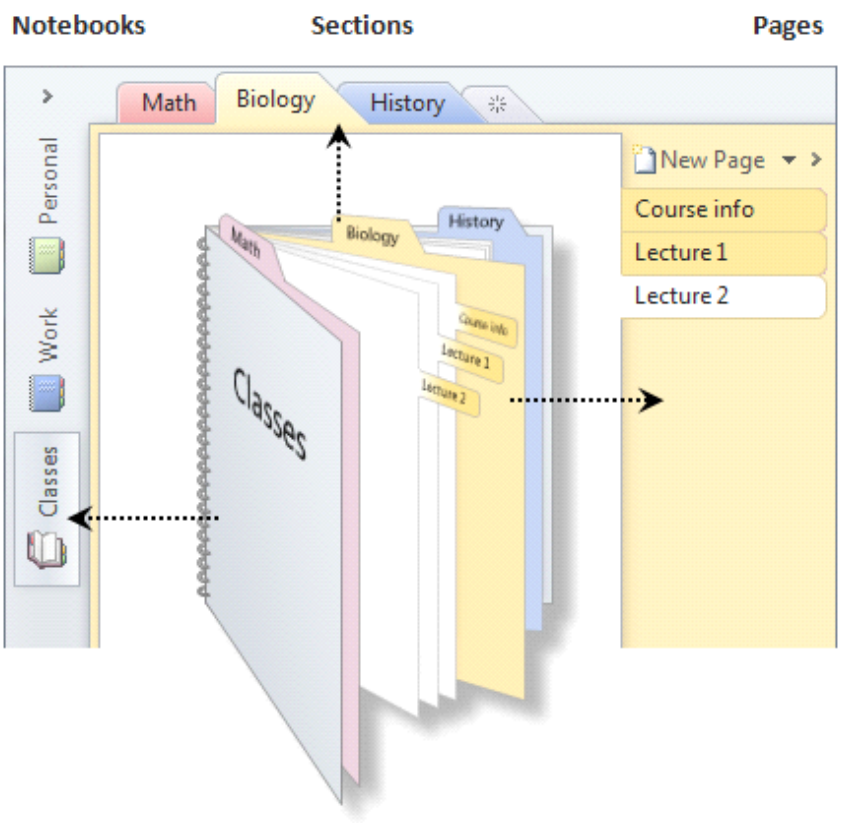
OneNote Basics



Take notes of many types

See **Home >** and **Insert >**

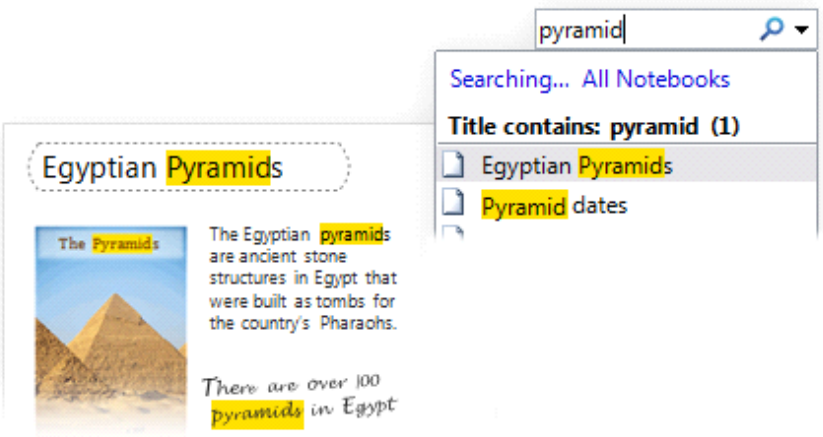
OneNote saves automatically, so you don't lose anything.



Organize

Create as many notebooks, sections, and pages as you need.

New Notebook:
File > New

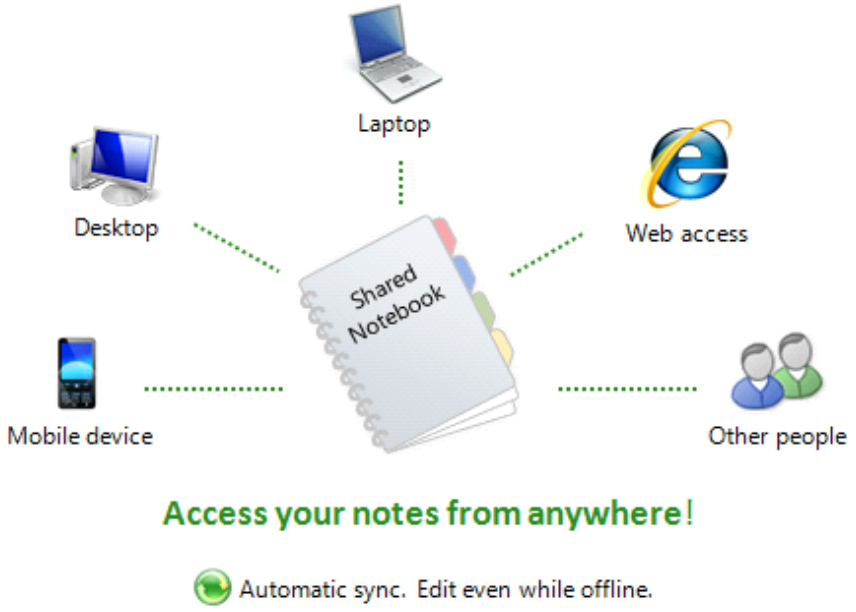


Search

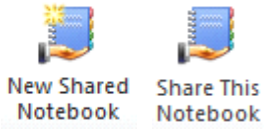
Jump to favorite pages quickly.

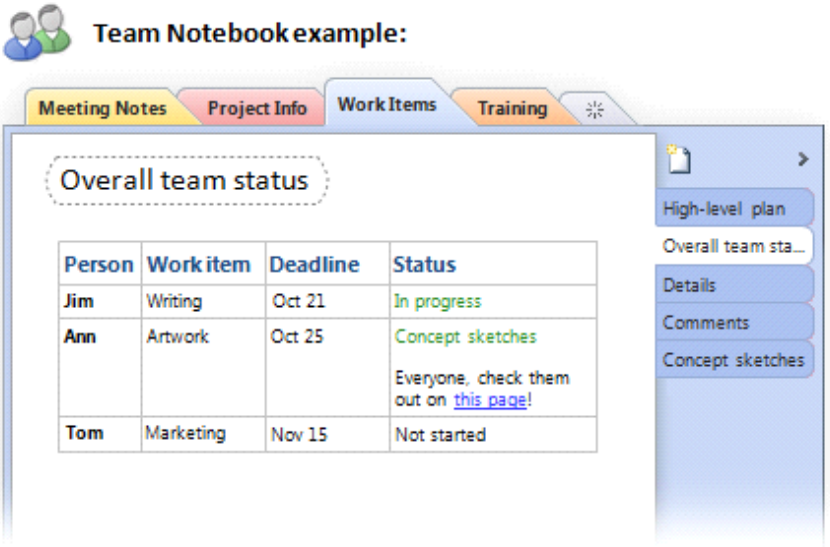
Find even handwritten notes or text in pictures!

Share with yourself or others

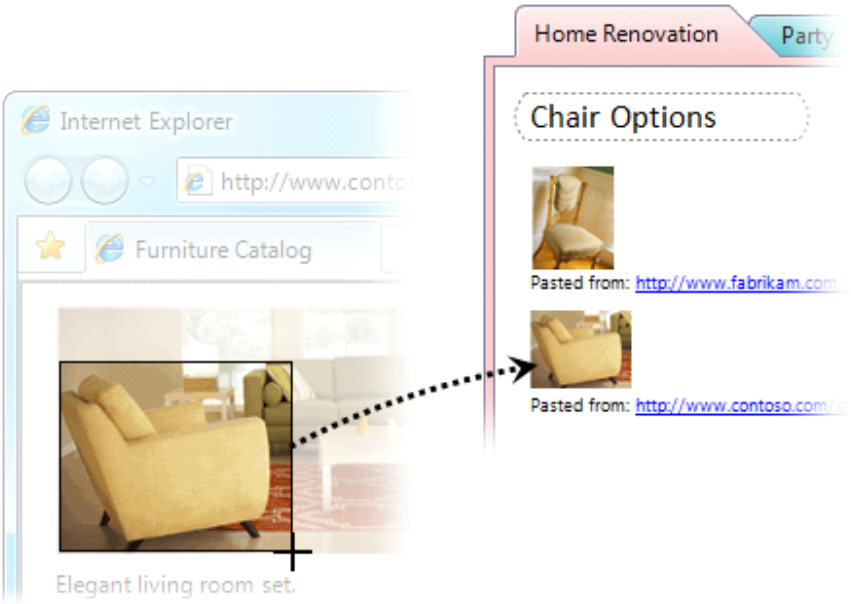


Share >





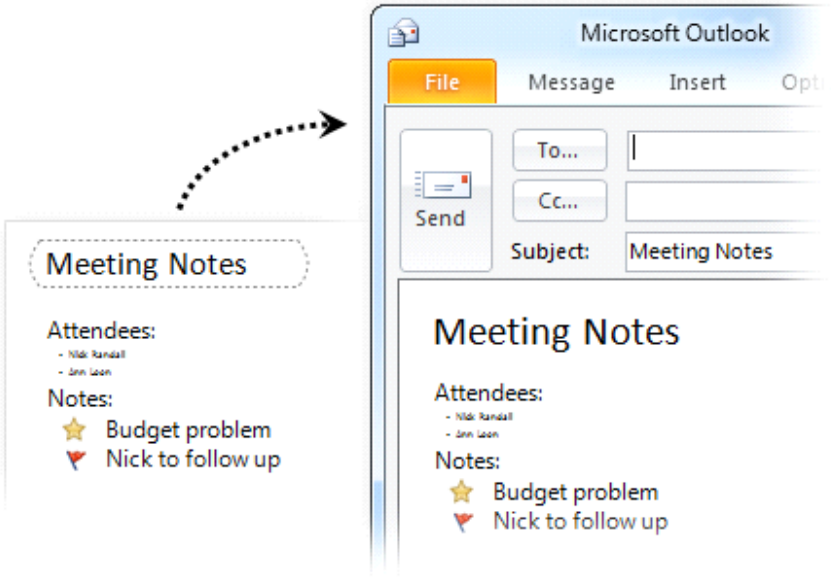
Top Uses



Collect product screen clippings
Clip maps, diagrams, car photos, weather, wedding dresses, etc.

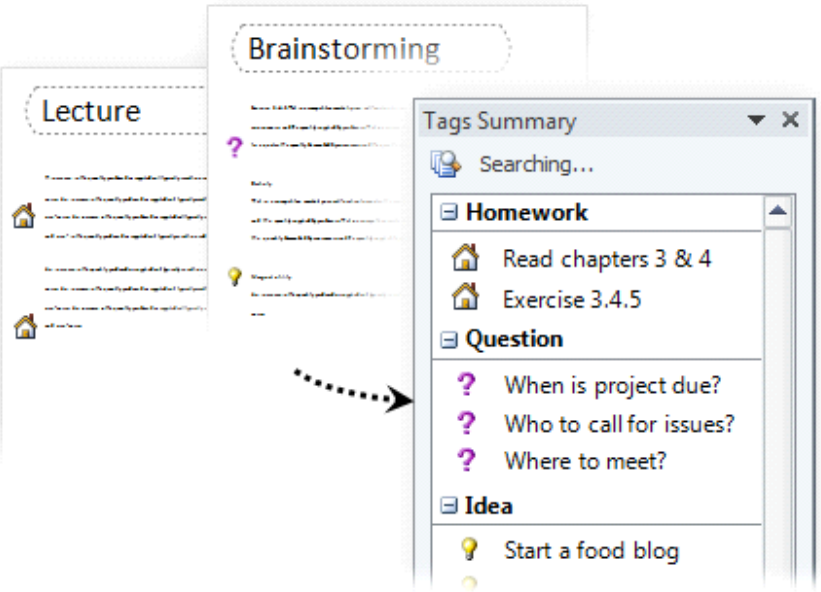
Insert > Screen Clipping

or hold: + S



E-mail out meeting notes,
instructions, status, work items, etc.
Recipients don't need OneNote.

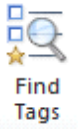
Share > E-mail Page



Tag and find important items

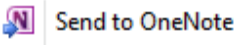
Homework, ideas, billable items, customer requests, to-dos, etc.
You can customize your own tags.

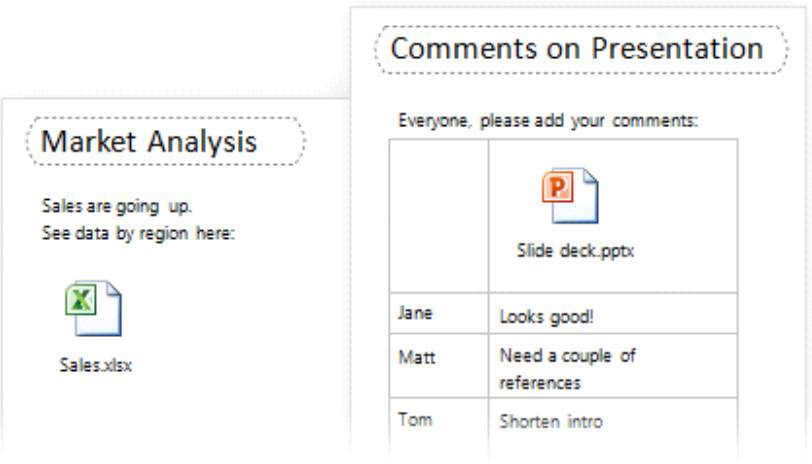
Right-click a note >

Home > 

Collect articles from the Web

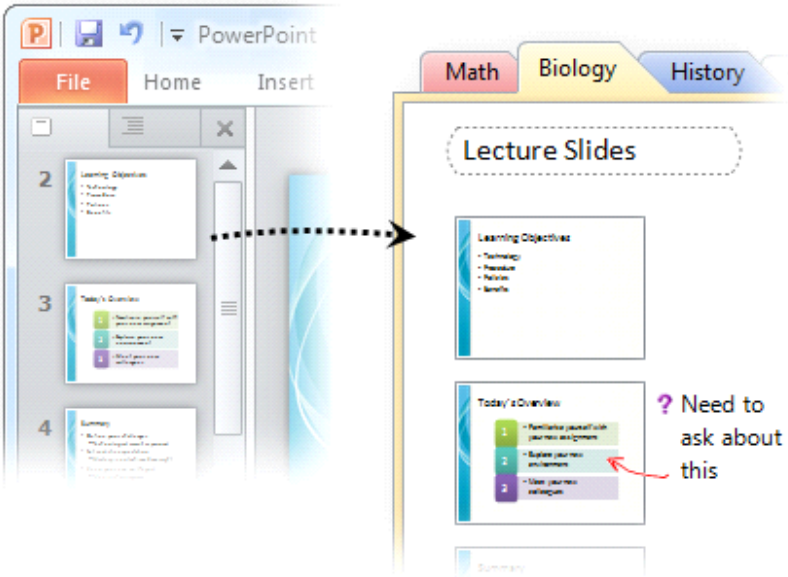
News, research, quotes, etc.
OneNote preserves the link back.

Right-click in IE > 



Keep project documents together with your notes

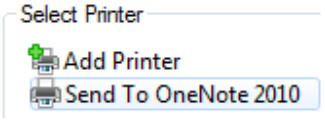
Insert >

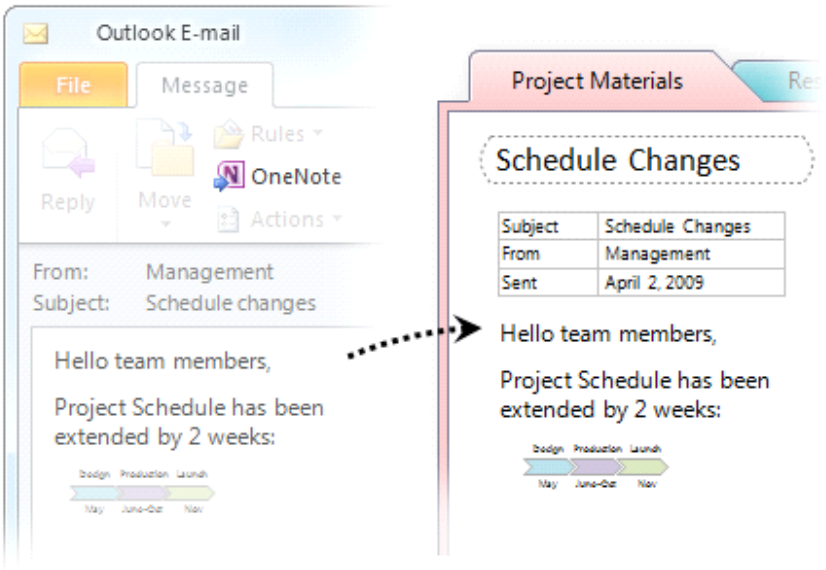


Annotate lecture slide printouts

Print presentations, documents, or anything else into OneNote for comments or future reference.

Print from any app >

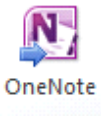


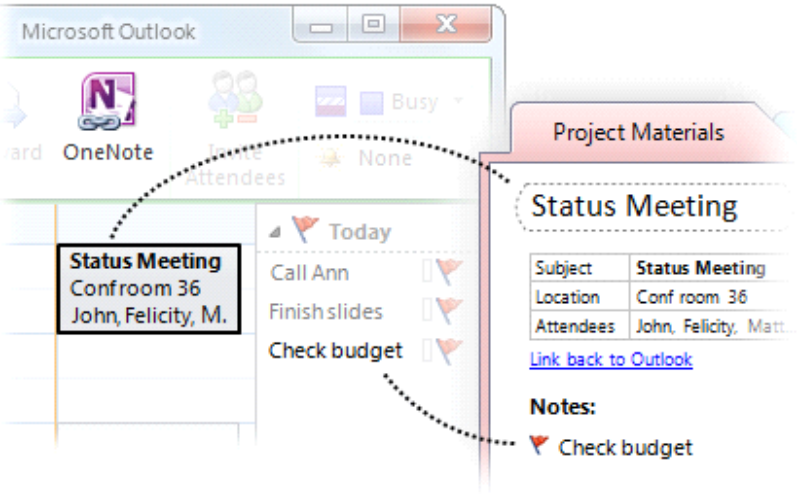


Keep key project e-mails together with your notes

Send e-mails to OneNote.

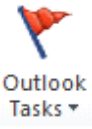
In Outlook >



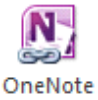


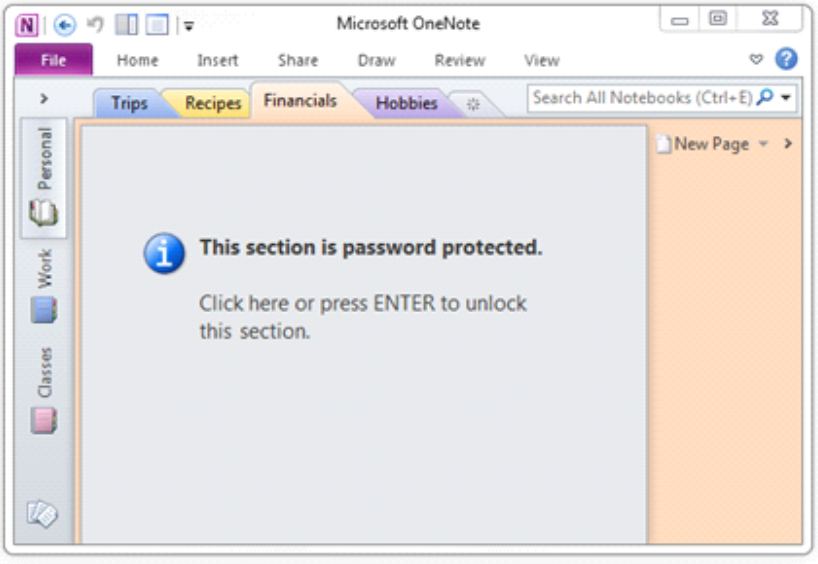
Link meeting notes and tasks with Outlook

Home >



In Outlook >

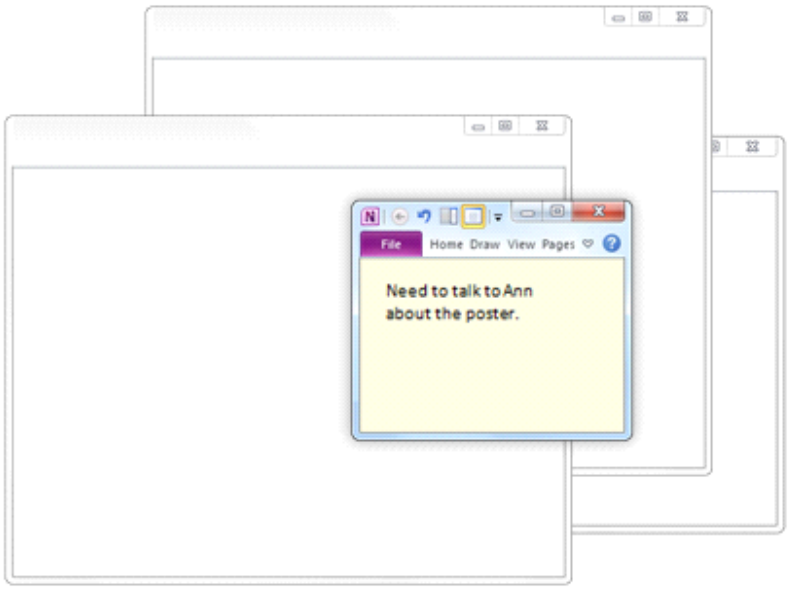




Protect sensitive information

Bank account information, web site logins, private journal, etc.

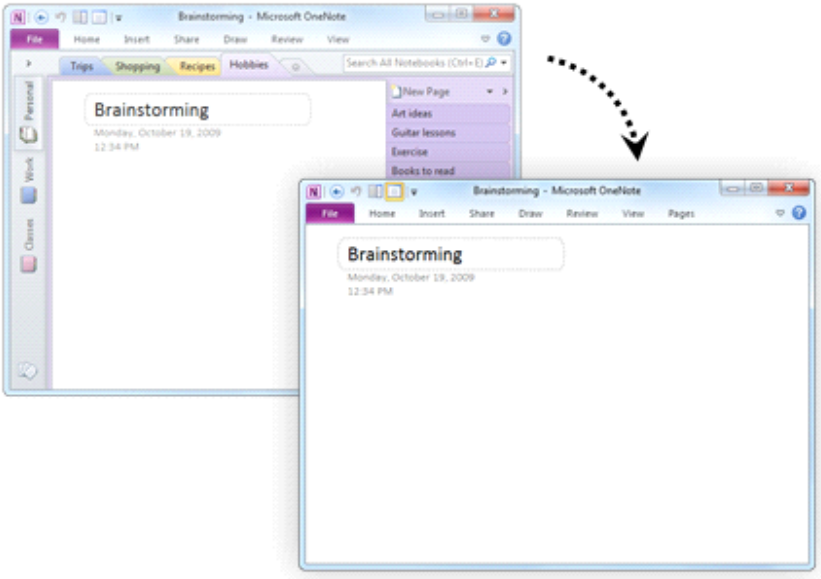
Right-click section tab > Password Protect



Jot a note quickly

It goes into your Unfiled Notes section.

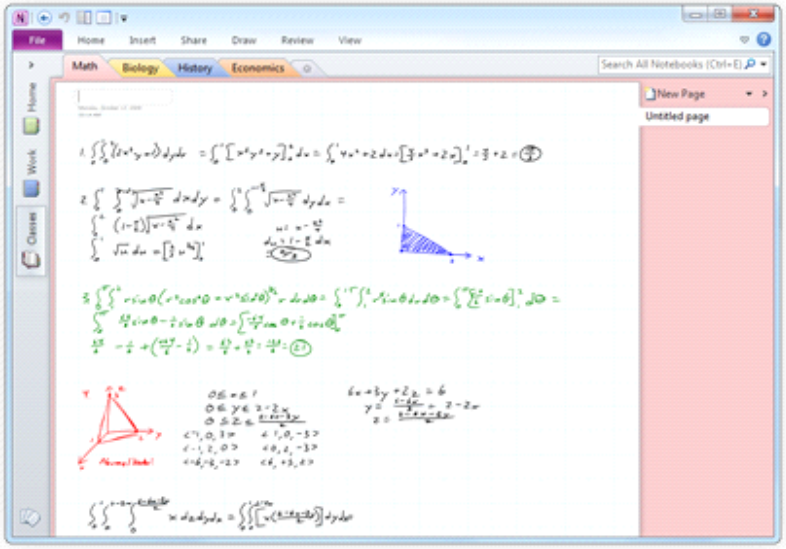
Hold: + N



Brainstorm without distraction

View >

Full Page View



Handwrite class or meeting notes on a Tablet PC

You can even search handwriting, or convert it to text.

Other Tips

- Create **tables** simply by typing some text and pressing TAB.
- **Calculator**: type Space after "=" in expressions. For example: 321*45+876=
- Try **Page Templates** in the New Page drop-down menu. Make your own templates for meetings or projects.
- **Record audio** of a meeting, synchronized with your notes, or drag in audios or videos onto your pages.

What's New?

New features in 2010:

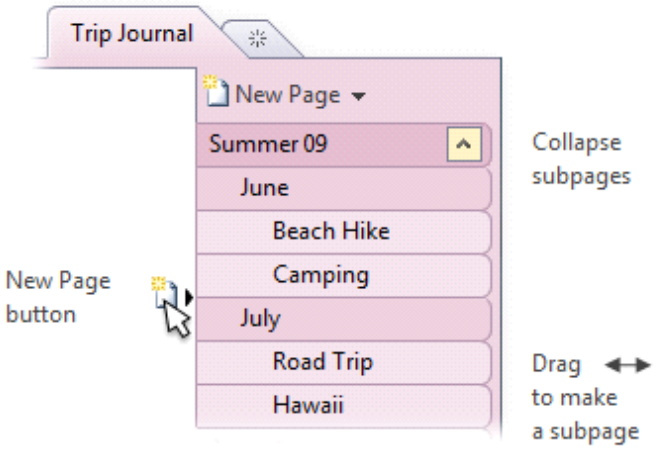
Gather, organize, and search

- Organize page tabs better:
  - Multi-level subpages
  - Collapse subpages
- Jump to any page with a quick search
- Dock to Desktop
- Link to other notes, like a wiki
- Quick Styles for making headings
- Auto-link notes to Web pages and documents
- Insert Math
- Notes on Outlook Tasks
- Send content to any section in OneNote

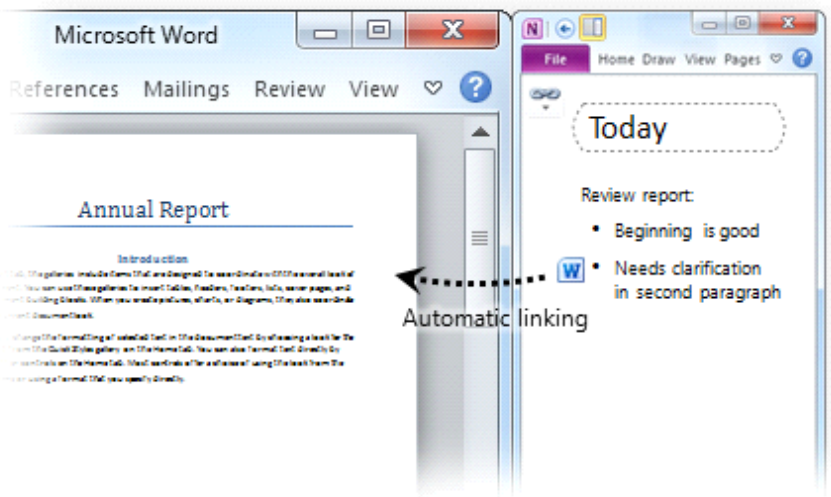
Sharing and universal access

- Access from anywhere:
  - Share on the Web
  - View and edit in a browser
  - Sync notes to OneNote Mobile
- Share notes:
  - Unread changes are highlighted
  - See author initials
  - Version history
  - Find recent edits
  - Find edits by author
  - Faster sync with SharePoint

Examples:



Organize topics using subpages
Drag tabs to indent and organize pages within a section.

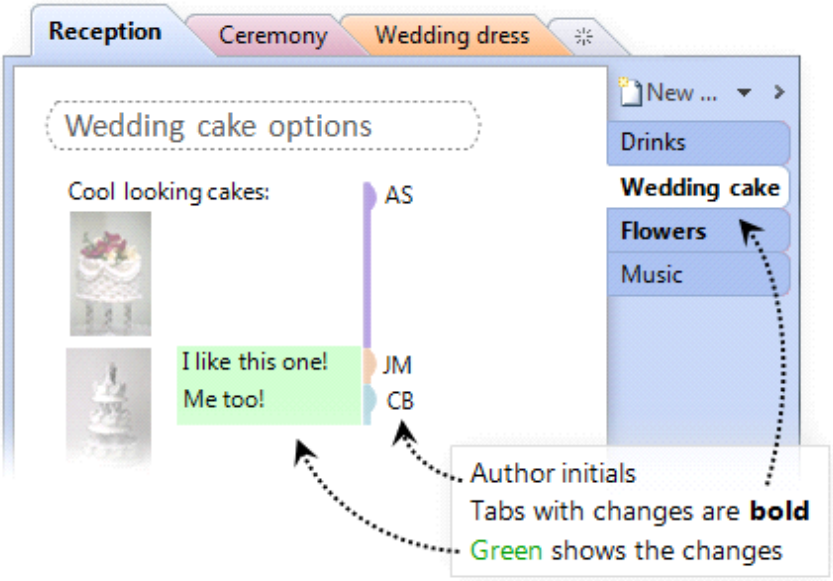


Keep notes visible during other tasks

OneNote will link notes to documents and Web pages you view.

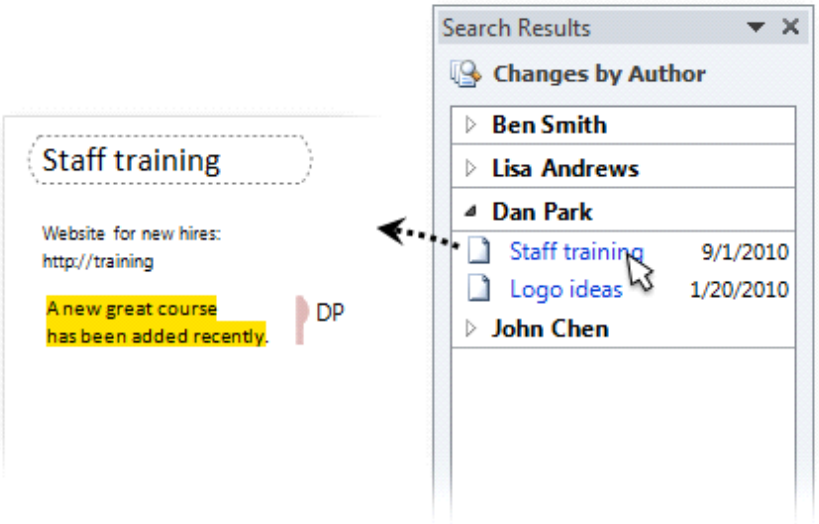
View >

Dock to Desktop



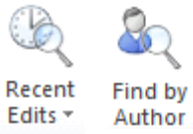
What's new in a shared notebook?

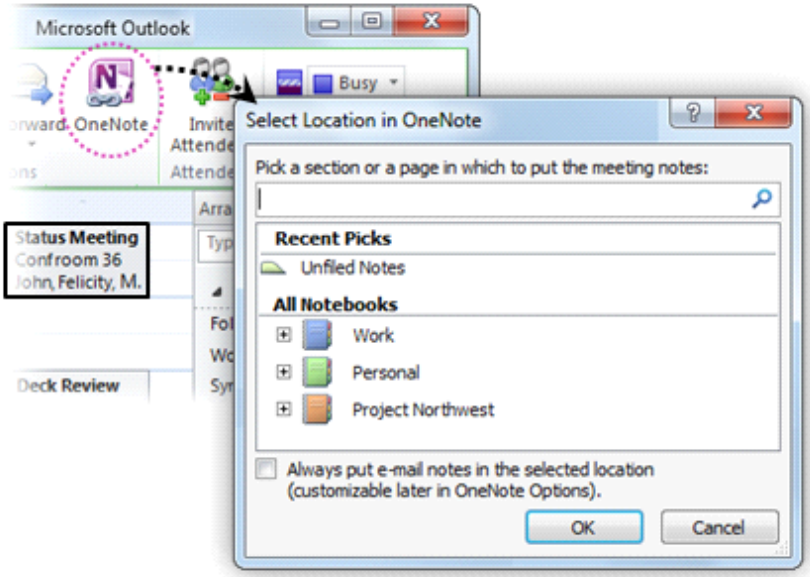
Unread changes are shown automatically.



What notes are teammates working on?

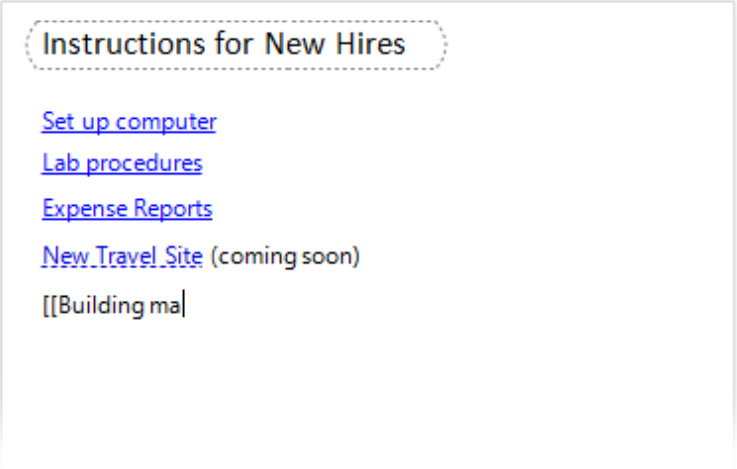
Share >





Select location when sending to OneNote

When sending from Outlook or Internet Explorer



Link to information for yourself and others

Insert >

or type [[page name]]

More Resources Online

Videos, templates, training, help, and discussion groups.

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Daily/Monthly

lundi 5 août 2019
10:15

Folder links

→ S:\CIO\Index\Common\Documents\Procédures & Process \PROCESS Stage
→ S:\CIO\Index\Common\Index Meetings
→ S:\CIO\Index\Common\Evènements des fonds
→ Pour reporting AUM mensuel: perimeter index products 20190

ARTICLES

https://seekingalpha.com/article/4287513-vxx-volatility-going-keep-falling (VXX = indice vol du vix - constant rolling exposure to the front contracts of VIX futures.
Since VIX futures don't see much directional drift through time, roll yield is a key component of returns and roll has turned negative for VXX.
German politicians are calling for negative interest rates to be banned /appropriate fiscal policy. Current policy: black zero (no borrowing VanEck, SolidX Offer ETF-Like Bitcoin Product to Large Investors (seen on bb). ***Trading in the largest Hong Kong ETF*** *jumped to a five-year high as protests in the city intensified. The iShares MSCI Hong Kong ETF, or EWH, saw its volume soar to 25 million shares on Tuesday in New York — the most since August 2014. Since demonstrations escalated in June, the $1.4 billion fund has lost about 40% of its assets. The short-term worry is that Hong Kong's economy is headed for a recession as local turmoil combines with the U.S.-China trade war to pummel retail sales, weigh on real estate prices and sink the city's $4.9 trillion stock market.*

https://marketvoice.fia.org/issues/2017-12/cqg-brings-care-orders-into-trading-platform
https://seekingalpha.com/article/4287662-learn-cefs-getting-started
https://www.linkedin.com/pulse/macroeconomic-news-sentiment-enhanced-risk-assessment-ager-hafez/
http://delivery.acm.org/10.1145/1120000/1118704/p79-pang.pdf?ip=159.50.16.166&id=1118704&acc=OPEN&key=4D4702B0C3E38B35%2E4D4702B0C3E38B35%2E4D4702B0C3E38B35%2E6D218144511F3437&__acm__=1569413673_6aa9c778c6fd0dd06867aa8d3027084c
https://www.fnlondon.com/articles/index-trackers-are-immoral-funds-need-to-get-real-on-climate-change-20190926

Web links

- https://apps-store.am.echonet/Citrix/Apps-FASWeb/ (IE)
- MAQS Staff Experience: MAQS Staff Experience (IE)
- https://cw13.ip.is.echonet/2018/Horus/SitePages/Data%20catalog.aspx (IE) = templates for xl sheets for different types of events (instrument characteristics, analytics, Ers, prices, ratings, sectors, issuers, timeseries….) on BRS/Aladdin
- Sharepoint BNP Easy: https://cw13.ip.is.echonet/BL02/maqs_etf/SitePages/BNP%20Paribas%20easy.aspx?FollowSite=1&SiteName=BNP%20Paribas%20Easy
- https://sailpoint.cib.echonet/identityiq/dashboard.jsf
- Plateforme Aladdin: https://bnppam.blackrock.com/apps/login/index.html?mode=pwd&finalUrl=%2Fviewserver%2Fclientsite%3Fname%3Dic-mq-etfpm%26lpwidth%3D258%26treestate%3D0.1-39

- Sailpoint: https://sailpoint.cib.echonet/identityiq/dashboard.jsf
- Recup bulletins de paie: https://www.mypeopledoc.com/#/documents
- Business Object: https://boxibi4.ip.is.echonet/BOE/BI
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2741377
- Ftp Directory MSCI (Exclusions, Gambling, GMO, etc): ftp://ftp.msci.com/ESG_Index_Review_Criteria_Reports/

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if sum Amount EUR + Amount USD = Sum Amount column F
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JB

Identifiants pour Msci Index Monitor (MSCI ID :jean-baptiste.simoen@bnpparibas.com Pwd :!Passw02# - Passw03#
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S&P: bnppar - 6D5srf4
ECPI:ecpi_bnpparibas_ce / Ow8WMi8B
ftp://dataftp.statpro.com/GALPHCEP/
Business Object: login = uid / pass = !r95
BR: f0slaeti - !Lon
BNUMBER - B38409

paul.xatardhuberlant@bnpparibas.com Dec2018*

https://sso.sgmarkets.com/#/login-retype?goto=https:%2F%2Fsso.sgmarkets.com:443%2Fsgconnect%2Foauth2%2Fauthorize%3Fclient_id%3D004728e8-2531-437f-a1f2-40ff71c2b3b7%26redirect_uri%3Dhttps%253A%252F%252Fanalytics.sgmarkets.com%252Fcofbox%252F%26response_type%3Did_token%2520token%26scope%3Dopenid%2520profile%2520mail%2520api.cofboxapi.v1%26nonce%3Dfplbbq1fd2myb6ebzo213wu602nwl3ul%26state%3D1ss8h2c199prswznsj8317mn85f53czis%26acr_values%3DL2&acr_values=L2&realm=%2F&service=L2

Calendrier
→ Remplacer les valeurs par des mots
→ Parce que y'a des thresholds définis

[16:14 2019/12/04] Valery LOUIS:
aussi à THEAM.SUPPORT.GAEA.MAILBOX@bnpparibas.com

sinistres@natixis.com en indiquant en objet de votre mail la mention
Déclaration de sinistre Assurance sur Compte - Satellis Assurance

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Si part hedgée alors - calculer l'actif net de la part puis le % que ça représente en fund currency, puis display le % max

code 36A74, 2ème étage, droite

DONDE ESTA EL EQUITYPRICER

HERAMBOURG Nicolas <nicolas.herambourg@bnpparibas.com>
rajouter la devise
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Attention tjs en read only

VILDIV	VILLIERS OCDE EX EUROPE BNPP AM 1
VOEB2	VILLIERS OCDE EX EUROPE BNPP AM 2

ex L1MIEHDEU => PMAIEHDEU
ex L1MIEHDNA2 => PMAIEHDNA2
ex L1MIEDEFIE => PMAIEDEFIE
ex L1MIEDEFIU => PMAIEDEFIU

- **Missing S/R:**
  Checking with Eric:
  834966AA;AFMIEDEFIE;CPLV11;LINUSBD;MANBB;MPI51;PRECO1;PVLIN3EEMU;PVLIN3EWD;PVLIN4EQEU;PVLIN4EQWD

HENKEL AG	R61235
ATLAS COPCO CLASS B	R49220
CHOCOLADEFABRIKEN LINDT & SPRUENGL	R67889
VOLKSWAGEN AG	R57809
SCHINDLER HOLDING AG	R57358
A P MOLLER MAERSK	C12112
EPIROC CLASS B	J51206
INDUSTRIVARDEN SERIES	R69524
AXEL SPRINGER V	B93337
TELECOM ITALIA SAVING	R56459
BMW PREF AG	R63212
THE SWATCH GROUP AG	R57454
SCHIBSTED CLASS B	B89808

That didn't happen.
And if it did, it wasn't that bad.
And if it was, that's not a big deal.
And if it is, it is not my fault. *<--- we are here*
And if it was, I didn't mean it.
And if I did. You deserved it.

"What's the hypothetical level of return at which the factor becomes unattractive to an investor? We can answer this question by gradually decreasing the return assumption for a given factor until the optimal portfolio assigns zero weight to it."
"Size is one of the factors with the most pronounced diversification

benefits" - Also works as a hedge against underlying macro risk -- "Size less sentisitve to IR shocks than other factors (LV, LI) + premia is unrelated to implicit exposures to other factors. Look beyond standalone perf.
How to diversify away exposure to idiosyncratic risks: ***maximum deconcentration / diversified risk-weighted / max decorrelation / efficient maximum sharpe ratio***. THERE SHALL BE WOLVES
"In an investment world where different risk dimensions are rarely orthogonal…" pls

→ Against geo risk: aggregate each geographic bloc by its free-float market cap in the reference cap-weighted bench
→ Against sector risk: sector neutrality =/= bench (often concentrated)
→ Market beta neutrality: @edhec they have their own way of estimating beta = take current composition of index into account then derive index market beta as avg of stock market betas (weighted with ptf weight) THEN use ***bayesian shrinkage techniques*** to reduce estimation sample dependency // implement model averaging using 3 different techniques ***(OLS, WLS, Kalman filter)***

Two complementary approachesto reducing the factor exposure gap between original portfolio and target portfolio: the completeness approach or the overlay approach

DO YOU EVEN BAYES

Tutoriel Aladdin

- Portfolio settings
- Look through securities: "enable portfolio look through"
- Portfolio filter: load filter: team filter: bruno crinom: 3 types de filtres - prendre group + type pour filtrer que les instrumetns où on a une note esg (enlève options, otc, futures…). Théoriquement les totaux sont bons.
- On a un autre filtre pour avoir le breakdown ESG avec ajustements pour le coverage.

PORTS AND BENCHES

EMEMSRI MSCI EMERGING MARKETS SRI (Repli Synthétique)
BEMESC5 MSCI EMU SRI S-series 5% Capped
BEMES MSCI EUROPE SRI
BEMJS MSCI JAPAN SRI
EKLD400 MSCI KLD 400 SOCIAL
ECEL CIRCULAR ECONOMY
ELC100E LOW CARBON 100 EUROPE
EJEGDC Pour charles

BNP PARIBAS EASY MSCI EUROPE SRI S-series 5% Capped	BEMES	MSCIEURSRI	
BNP PARIBAS EASY MSCI JAPAN SRI S-series 5% Capped	BEMJS	MSJPSREUR	
BNP PARIBAS EASY MSCI USA SRI S-series 5% Capped	EKLD400	MSKLD400SN	
BNP PARIBAS EASY MSCI EMERGING SRI S-series 5% Capped	EMEMSRI	MSEMSRIN	X
BNP PARIBAS EASY MSCI WORLD SRI S-series 5% Capped	EWXCW	MSWXCONTRN	X

BNP PARIBAS EASY â,¬ Corp Bond SRI Fossil Free	FOSF	U-BMSESRFF	
BNP PARIBAS EASY MSCI EMU SRI S-series 5% Capped	BEMESC5	MSEMUSR5	
BNP PARIBAS EASY LOW CARBON 100 EUROPEÂ® /	ELC100E	AEXLOWCAR0	
BNP Paribas Easy ECPI Circular Economy Leaders	ECEL	GALPHCEUR	
BNP PARIBAS EASY JPM ESG EMBI GLOBAL DIVERSIFIED COMPOSITE	EJEGDC	EMBIGLDIV	

BNP PARIBAS EASY MSCI EUROPE SRI S-series 5% Capped
BNP PARIBAS EASY MSCI JAPAN SRI S-series 5% Capped
BNP PARIBAS EASY MSCI USA SRI S-series 5% Capped
BNP PARIBAS EASY MSCI EMERGING SRI S-series 5% Capped
BNP PARIBAS EASY MSCI WORLD SRI S-series 5% Capped
BNP PARIBAS EASY â,¬ Corp Bond SRI Fossil Free
BNP PARIBAS EASY MSCI EMU SRI S-series 5% Capped
BNP PARIBAS EASY LOW CARBON 100 EUROPEÂ® /
BNP Paribas Easy ECPI Circular Economy Leaders
BNP PARIBAS EASY JPM ESG EMBI GLOBAL DIVERSIFIED COMPOSITE

EMEMSRI	MSCI EMERGING MARKETS SRI S-series 5% Capped	sur l'indice + sur le vrac	EMEMSRIO1, EMEMSRIO2, MSEMSRIG
BEMESC5	MSCI EMU SRI S-series 5% Capped	indice+ ptf	MSEMUSR5
BEMES	MSCI EUROPE SRI S-series 5% Capped	indice+ ptf	MSCIEURSRI
BEMJS	MSCI JAPAN SRI S-series 5% Capped	indice+ ptf	MSJPSREUR
EKLD400	MSCI USA SRI S-series 5% Capped	indice+ ptf	MSKLD400SN
EWXCW	MSCI WORLD SRI S-series 5% Capped	indice+ ptf	MSWXCONTRN
ECEL	CIRCULAR ECONOMY	indice+ ptf	GALPHCEUR
EDEXUG	FTSE EPRA Nareit Developed Europe ex UK Green	indice+ ptf	FTFENDGXUKN
ELC100E	LOW CARBON 100 EUROPE	indice+ ptf	AEXLOWCAR0
EECSFF1	BNP PARIBAS EASY € Corp Bond SRI Fossil Free 1-3	indice+ ptf	B34701EUR
EJEGDC	JPM EMBI ESG GLOBAL DIVERSIFIED COMPOSITE	indice+ ptf	EMBIGLDIV

EECSFF3	BNP Paribas Easy € Corp Bond SRI Fossil Free 3-5Y	indice+ ptf	B34794EUR
FOSF	BNP PARIBAS EASY € Corp Bond SRI Fossil Free	indice+ ptf	B34235EUR

MSEMSRIG	MSCI EMERGING MARKETS SRI
MSCIEURNT	MSCI Europe Net Index
MSEURSR5	MSCI Europe SRI S-Series 5% Capped

CODES MSCI

- Codes MSCI SRI Japan (701603)
- MSCI SRI World (701194)
- MSCI SRI USA (701198)
- MSCI SRI EMU (701602)
- MSCI SRI Europe (701199)
- MSCI SRI EM (704366)
- MSCI World ex CW (701268)
- MSCI EM ex CW (701269)

JSESG v EMBIG v EGCJEC

Quelques lignes sur la gamme JESG de JPM: selection based on normalized rolling mean ESG scores provided by Sustainalytics & RepRisks; covering 100% of sovereigns, waterfell onto Quasi-Sovereigns, averaged with regional industrial avg for stability.

- **Selection process:**
  - → **Active weights**: against EMBIG - new weights depends on ESG score buckets, decreasing scalar (hence: JESGBIG < EMBIG)
  - → **Exclusions**: tobacco, tobacco, thermal coal, weapons, everything with score below 20
  - → **Green bonds (if fit CBI)** overweighted (band +1) wrt. the issuer
  - → Remove anything infringing UNGC principles
  - → Monthly rebal
- **What does it do**: comparable absolute returns, modestly lower risk premia, ESG scores +10 on avg, lower IR sensitivity (duration to worst)

Comparaison de la compo index actuel v index ESG (nb d'exclusions, plus gros reweightings…)
Rappel sur stratified sampling
Compo réelle actuelle v compo target: attention, pas forcément de faire des reweightings vu qu'on est déjà optimisés donc pas callés sur les poids de l'index.
Note: ont déjà sorti le mozambique et le venezuela:
Sur les émergents logiquement dans les sovereign t'as rien noté AAA (d'ailleurs même dans le DM t'as très peu d'états avec triple Am; lux/germany et quelques autres);
Embig diversified: plus capi-weighted contraint
Dans le book tu mets des règles pour savoir tel bond, telle maturité,…

bref il faut regarder l'émission mais c'est essentiellement capi weighted.

THINGS TO LOOK INTO

- Cross sectional regressions
- MSCI Facs: Value (BtP, Earnings Yield, LT Reversal)
- vol (beta + residual volatility) ///
- What's the market you're talking about
- Systematic Equity Strategy (SES) factor groups - explained in Bayraktar (13)
- Non SES factors: have explanatory power but ann ret not as large as the SES quality factors.
- Non-parametric correlation
- Bayesian regression: *"a bayesian combines observations with prior beliefs about how likely things are (a security's prior comes from the finest sufficiently numerous group of similar securities: country / region / sector & region*
- Conic mixed-integer otimization
- Branch & cut algorithms
- Preprocessing
- "Non-convex mixed-integer portfolio optimization problems are intractable and therefore, it is impossible to guarantee optimality for them. For instance, there are 2*10^107 different ways of choosing 100 stocks out of 500, whereas the estimated nb of atoms in the observable universe is only around 10^82. For such problems, the power of the optim algorithms is crucial in producing near-optimal solutions within reasonable computer time. The current version of the optimizer supports mixed-integer portfolio problems with up to 11k securities."

Shit for tarek

- Closky.info/10k : deux axes, des droites, du love
- Ssites. Net/indicce/ : un compteur (déjà à 1Mo). J'ai ri.
- Ssites/beautiful/: cliquer sur "more beautiful" = splitte un cadre en cubes et change les couleurs. Is it more beautiful?
- Closky est un des premiers à avoir créé des "sites d'artistes" - ou comment pousser l'absurde jusqu'au rafifnement. Autres morceaux choisis:
- Closky Fake News: click update = new forms & shapes (un peu art contemporain libre coloré j'aime bien)
- Closky White Pages: drag white pages back to the table. Is that a white paper yet?
- Le meilleur quand on est de mauvaise humeur: http://www.sittes.net/madeinfrance/
- Un lien vers Kosuth (long time no see <3) - Tiled (Art as Idea as Idea) par Christie's.
- http://w.closky.info/portfolio/ Portfolio with untiled not making any sense)
- Words of Value: http://www.closky.info/dictionary/ - dictionary with price & name of œuvres auctioned (from Sotheby's)
- Un truc art digital au 104: https://www.biennalenemo.fr/wp-content/uploads/2019/09/Catalogue-NEMO-2019-WEB.pdf

MS EUR juin 19	14	3.36%	#N/A

	12	0.90%	#VALUE!
	416	95.74%	141.9130663
MS EU mars 19	14	3.42%	#N/A
	11	0.56%	#VALUE!
	414	96.02%	145.1991744
MS EU dec 18	14	3.56%	#N/A
	10	0.51%	#VALUE!
	415	95.93%	147.018139
MS EU sept 18	17	4.39%	#N/A
	9	0.43%	#VALUE!
	419	95.18%	150.3442417
MSEU juin 18	18	4.39%	#N/A
	10	0.65%	#VALUE!
	419	94.97%	150.9388018
Jap juin 19		0.00%	0
	6	0.02105492	#VALUE!
	316	0.97856193	110.3864909
japmars 19		0.00%	0
	5	0.01713999	#VALUE!
	317	0.98285999	116.557821
jap dec 18		0.00%	0
	4	0.0130241	#VALUE!
	318	0.98697576	120.7768533
jap sept 18		0.00%	0
	3	0.0104689	#VALUE!
	319	0.98953115	122.1230559
jap juin 18			
	3	0.98%	#VALUE!
	319	99.02%	120.4973104
US juin 19	8	1.53%	#N/A
	39	1.61%	#VALUE!
	596	96.86%	63.99621344
US mars 19	7	1.66%	#N/A
	23	0.83%	#VALUE!
	593	97.51%	65.74108927
US dec 18	8	1.78%	#N/A
	21	0.73%	#VALUE!
	593	97.49%	68.70029135
US sept 18	9	1.95%	#N/A
	15	0.59%	#VALUE!
	601	97.46%	62.54142317
US juin 18	9	1.97%	#N/A

	15	0.54%	#VALUE!
	603	97.49%	64.61011051

AURORA WHERE U AT

- **Les côtes bretonnes:** "*plus le segment (échelle/mesure) sera petit, plus la précision augmente et plus la longueur augmente, on dit que cette côte a une caractéristique fractale. Par exemple, si on faisait le tour de la Bretagne avec un petit chien, nous ferions des pas d'1m mais le chien fait du 10cm, et a donc à contourner chaquue petite flaque que nous aurons sauté. Donc la longueur des côtes bretonnes de 2800km = longueur à l'échelle humaine. Mais pour un chien, ou même une fourmi, cette longueur est beaucoup plus grande*." **TROP BIEN**
- Le coefficient de Hurst: article 1
- Le coefficient de Hurst: article 2
- Lien: https://towardsdatascience.com/how-the-mathematics-of-fractals-can-help-predict-stock-markets-shifts-19fee5dd6574
- Trendiness * ? = signal (maturité du trend = exit)

4.1 Our Non-linear Method for Generating Signals - Indicator MH

We correlated fractal dimension with investment risk. A simple model is given by the following situation. Experienced traders being in market, i.e., having an opened position after a BUY-signal of their trading strategy signalized them a starting trend, see or feel the growing risk, expect the end of trend, and start selling. They start to sell earlier than the others (not so experienced), who continue to buy because they believe that the market will carry on growing. Prices can continue growing. But after a specific time period, more and more traders start selling their positions, and also the unexperienced traders begin to understand the situation and start to sell, too. At this moment, prices start to fall down.

Our hypothesis is that we can estimate the time point at which the clever traders start to sell. There is the possibility that their feeling correlate with fractal dimension changes. Standard technical indicators react on changes of prices, but it is likely that the fact that clever traders start to sell does not impact prices strongly enough to influence the standard technical indicators. We suppose that chaotic properties can react before prices change. Because of that, we expect more profit when using a strategy based on fractal dimension changes.

- Transfo du dataset:
  - → La Vol réalisée suit une loi lognormale = log de vol et voir si la distribution transformée est plus facilement normalisable
  - → Trendiness: fallait choisir, no?

→ Test des subsets
→ Return + vol

- Pour les bouquins: Théorie du Chaos de Gleick **DONE**
- Fractales, Hasard et Finance - Mandelbrot **DONE**
- Spéculation de Louis Bachelier **DONE - Illisible** - *Espérances mathématiques + Avantages mathématiques - "le marché ne croît, à un instant donné, ni à la hausse ni à la baisse du cours vrai" (où cours vrai = cours le plus probable = donc celui de maintenant) - Opérations fermes - marché à prime - "mais si le marché ne croit ni à la hausse ni à la baisse du cours vrai, il peut supposer plus ou moins probables des mouvements d'une certaine amplitude." - L'espérance mathématique du spéculateur est nul.*

Premier problème: les portefeuilles -H et ceux récupérés sur le fichier de Hedge ne couvrent pas la même chose

PATNA = ENAXCWIHE (Cash + fds dans cash afaik) - n'existe pas
PATGCB = EMIGCLC (Spot) ou EMIGCLCIHN (Fd)
PATGHY = EGDLHYC (pareil que H) ou EGDLHYCPHE
PATEMB = EJEGDC ou EJEGDCPHE
TRACKW = EWXCWIHE
INDAN == INDANPCHE ou INDANCHE
TRACKE = EEMXCW ou EEMXCWRHE
- **EEMCC = EEMCC (spot) ou EEMCCERHE (fd) ou EEMCCTCRHE (fd)**
PWTEUSE = EKLD400 ou EKLD400PHE
EEP= EEPNADEHEU(spot)

-S ou -H: sur les fonds non répliqués en physique - regarder -S

Avoir la requête complète sur une page
Faire un aggreg & vlookuper
Per fund: aum = su

ENAXCWIHE (x), EMIGCLC, EMIGCLCIHN, EGDLHYC, EGDLHYCPHE (x), EJEGDC, EJEGDCPHE (x), EWXCWIHE (x), INDANPCHE, INDANCHE, EEMXCW, EEMXCWRHE (x), EEMCC, EEMCCERHE (x), EEMCCTCRHE, EKLD400, EKLD400PHE, EEPNADEHEU (x)

ENAXCWIHE,EMIGCLC,EMIGCLCIHN,EGDLHYC,EGDLHYCPHE,EJEGDC,EJEGDCPHE,EWXCWIHE,INDANPCHE,INDANCHE,EEMXCW,EEMXCWRHE, EEMCC,EEMCCERHE,EEMCCTCRHE,EKLD400,EKLD400PHE,EEPNADEHEU

EMIGCLCIHN
- Ce qui sort en plus c'est l'investissement dans le fond master; dans chaque fond FX y'a cette ligne en plus
- Note: c'est pas une position comptable donc c'est pas assez précis pour savoir à quel point t'es couvert
- Qd tu reçois une SR c'est comptabilisé dans le fond master + l'open_end fund - donc on est capable de voir l'écart
- Dans les faits: si on a un ordre de taille conséquente on peut le couvrir à la fin de la journée…
- CLIEUNER - Aggrégation des courus de frais de gestion, fonds d'admin, et qui sont prélevés une fois par mois/par trimestre…

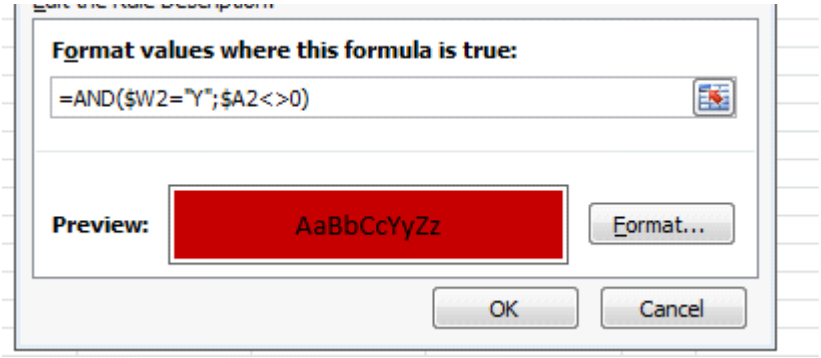
- Les CSHBNUSD: collatéral (mais pas disponible)
- FXSPOT / FRWDFRWD: si tu prends une pos auj mais que c'est settled dans 2 jours, alors pdt 2 jours t'as une ligne "fx spot" en attendant le settlement

=ATXQuerySource_PositionPort(FundPos;portfolio;$sec_type=CASH;;)
=ATXQueryReport_Create(FundRpt;report_handle;pos_start;;)

Si on sait le faire sur PATNA on sait le faire partouw

-

Sur G2:



T:\CIO\Index\Funds\Validation\FX

Sur EEMCCERHE: portfolio_nav est en euros (share currency) - est-ce que portfolio nav est toujours en euro? Oui c'est l'aum du fond, pas l'aum de la part
Mais on a aussi l'exchange rate pour calculer AUM (fund currency) dans la colonne exchange_rate (mais c que dans la ligne libellée EN CURRENCY = USD)
Dans EEMCCERHE on est short du dollar (vu que c un fd -) et long de l'euro (qui te donne ton FX open pos)
Il faut trouver:

- La ligne dans le subfund où currency = fund currency mais pas nav currency
- Dans cette ligne, on trouve: l'ER
- Qui permet de calculer l'aum en fund currency (parce que l'AUM est tjrs reporté en euro ?)
- L'autre ligne présente ton fx open pos
- A partir de là tu recalcules le hedge ratio
- Le sectype est trjs fxfrd

BREF: on a tjrs portfolio_nav en fund currency. Le truc, c'est que c'est pas les mêmes portfolio_nav selon qu'on regarde: le vrai fond (eemcc??? No match) ou le subfund (où on a à peu près l'AUM de la part en fund crcy)

Valaddin

1	2	80	81	79	32	27
Aladdin	Cusip	Exchange	Portfolio	Port ccy	Maturit	Desc1

Code		Rate (to compute share ccy)	NAV (fund ccy) = share nav on the subfund		y	(USD/EUR) = short USD, long EUR (sur parts EUR hedgées)

P:\EXCEL\Index\ETFs\ETFs Infos\Calendrier\

ctiveWorkbook.SaveAs Filename:="P:\EXCEL\Index\ETFs\ETFs Infos \Calendrier\BNP Paribas Easy **ETF_Trading_Calendar**_" & Format(maDate, "MMM_YY") & ".xlsx

ETF_Trading_Calendar

```
Public  Sub Convert_ETF()
Dim cell as Range
For Each cell in Sheets("Holidays View").Range("E9:AI75"):

        If cell.Value  = 0 Then
        cell.Value = ""
        ElseIf cell.Value > 0 and cell.Value <= 9.999 Then
        cell.Value = "Risk Fees"
        ElseIf cell.Value >=10 and cell.Value <= 99.999 Then
        cell.Value = "No Orders"
        Else
        cell.Value = "No Nav"

        End If

Next cell
End Sub
```

***

```
Public  Sub Convert_Colors_ETF()
Dim cell as Range
For Each cell in Sheets("Holidays View").Range("E9:AI75"):

        If cell.Interior.ColorIndex = -4142 Then
        cell.Value = ""
        ElseIf cell.Interior.ColorIndex = 35 Then
        cell.Value = "Risk Fees"
        ElseIf cell.Interior.ColorIndex = 14 Then
        cell.Value = "No Orders"
        Else
        cell.Value = "No Nav"

        End If

Next cell
End Sub
```

ETF_Trading_Unlisted_Calendar

```
Public  Sub Convert_Unlisted()
Dim cell as Range
For Each cell in Sheets("Unlisted Holidays View").Range("E9:AI25"):

        If cell.Value  = 0 Then
        cell.Value = ""
        ElseIf cell.Value > 0 and cell.Value <= 9.999 Then
        cell.Value = "Risk Fees"
        ElseIf cell.Value >=10 and cell.Value <= 99.999 Then
        cell.Value = "No Orders"
        Else
        cell.Value = "No Nav"

        End If

Next cell
End Sub
```

*** Based on Colors

```
Public  Sub Convert_Colors_Unlisted()
Dim cell as Range
For Each cell in Sheets("Unlisted Holidays View").Range("E9:AI25"):

        If cell.Interior.ColorIndex = -4142 Then
        cell.Value = ""
        ElseIf cell.Interior.ColorIndex = 35 Then
        cell.Value = "Risk Fees"
        ElseIf cell.Interior.ColorIndex = 14 Then
        cell.Value = "No Orders"
        Else
        cell.Value = "No Nav"

        End If

Next cell
End Sub
```

ETF Fund_Feeders_Calendar

```
Public  Sub Convert_Feeders()
Dim cell as Range
For Each cell in Sheets("Feeders Holidays View").Range("E9:AI19"):

        If cell.Value  = 0 Then
        cell.Value = ""
        ElseIf cell.Value > 0 and cell.Value <= 9.999 Then
        cell.Value = "Risk Fees"
        ElseIf cell.Value >=10 and cell.Value <= 99.999 Then
        cell.Value = "No Orders"
        Else
        cell.Value = "No Nav"

        End If
```

```
Next cell
End Sub

### Based on colors

Public  Sub Convert_Colors_Feeders()
Dim cell as Range
For Each cell in Sheets("Feeders Holidays View").Range("E9:AI19"):

        If cell.Interior.ColorIndex = -4142 Then
        cell.Value = ""
        ElseIf cell.Interior.ColorIndex = 35 Then
        cell.Value = "Risk Fees"
        ElseIf cell.Interior.ColorIndex = 14 Then
        cell.Value = "No Orders"
        Else
        cell.Value = "No Nav"

        End If

Next cell
End Sub
```

Prospectus

lundi 5 août 2019
15:04

Available in dfolder under name "Prospectus_Full"

Book 1

BOOK I OF THE PROSPECTUS

Contents 3
General Information 5
Terminology 6
Investment Objectives 11
Administration and Management 12
Investment Policy, Objectives, Restrictions and Techniques 14
The Shares 15
Net Asset Value 22
Tax Provisions 25
General Meetings and Information for Shareholders 27
Appendix 1 – Investment restrictions 28
Appendix 2 – Techniques, Financial Instruments, and Investment Policies 32
Appendix 3 – Investment Risks 38
Appendix 4 – Liquidation, Merger, Transfer and Splitting Procedures 42

- **Calcul de VaR.**
- **Securities financing transactions (SFT):** raising ST capital to enhance the liquidity of a subfund. "At the date of this prospectus, only the HY Europe Defensive subfund could be subject to Reverse Repurchase Transactions within an expected proportion of 100%. Revenues are either attributed to the subfund when positive, or charged to the subfund when negative.
- **Collateral**: assets received from counterparties in respect of Financial Derivatives Instruments and Securities Financial Transactions other than currency forwards constitute collateral in accordance with the Reg 2015.
- **Collateral diversification/Asset concentration**: should be sufficiently diversified in terms of country, markets, issuers. Sufficient diversification when OTC transactions backed with a collateral giving a max exposure of 20% of its net asset value. Collateral received should be issued by an indep entity and isn't expected to show high correl with the performance of the counterparty.
- **Collateral received by a sub-fund may be held either by the Depositary of by a third party depositary**. In any case: there is market risk.
- **WARNING**: "in accordance with ESMA guidelines, non-cash collateral received by the company should not be sold, reinvested or pledged"

- **Hedge Share Class Contagion Risk**
- Where a Hedged or Return Hedged share class is available in a sub-fund, the use of derivatives that
- are specific to this share class could have a potentially adverse impact on other share classes of
- the same sub-fund.
- The application of a derivative overlay in a currency risk hedged share class introduces potential
- counterparty and operational risk for all investors in the fund. This could lead to a risk of
- contagion to other share classes, some of which might not have any derivative overlays in place.
- The Management Company would make sure that this risk is mitigated and monitored appropriately.

Book 2

BOOK II OF THE PROSPECTUS

€ Corp Bond SRI Fossil Free 44
Barclays Euro Government Inflation Linked All Maturities 47
Barclays US Treasury 50
Energy & Metals Enhanced Roll 53
Equity Dividend Europe 56
Equity Dividend US 58
Equity Low Vol Europe 60
Equity Low Vol Germany 62
Equity Low Vol US 64
Equity Momentum Europe 66
Equity Quality Europe 68
Equity Value Europe 70
Equity Value US 72
ECPI Circular Economy Leaders 74
FTSE EPRA/Nareit Developed Europe 77
FTSE EPRA/Nareit Developed Capped 79
High Yield Bunge Defensive 81
STOXX® MUTB Japan Quality 150 83
JPM GBI Global Diversified Composite 85
JPM GBI EMU 86
JPM GBI Globe ex EMU Hedged EUR 88
Low Carbon 100 Europe® 89
Markit iBoxx EUR Liquid Corporates 90
Markit iBoxx Global Corporate Liquid 150 Capped (USD-Hedged) 97
Markit iBoxx Global Developed Markets Liquid 150 High Yield Capped (USD Hedged) 100
MSCI Emerging Markets ex CW 103
MSCI Emerging Markets SRI 106
MSCI EMU ex CW 109
MSCI EMU SRI Capped 5% 112

Structure des subparts

- **Name**: Easy Barclays Euro Gov Inflation Linked All Matus
- Investment objective: tracking that index with TE below 1% [c marrant pcq y'a pas de limite ds la TD]
- **Investment policy:** the subfund will not invest more than 10ù of its net assets in shares or units issued by UCITS or other UCIs. UCIs = Undertakings Collective Investment in Transferable Securities.
- **Full replication**: mandatory to invest at least 90% of the assets in the securities concerned by the index. TE= stdev v benchmark on weekly returns, annualized. "In full replication, TE due to transaction costs, differences in income reinvestment policies and tax treatments and cash drags."
- Share Categories

Category	Class	ISIN code	Dividend	Reference Currency	Other Valuation Currencies
UCITS ETF	CAP	LU1481200217	No	EUR	
Track Classic	CAP	LU1210300893	No	EUR	USD
Track Privilege	CAP	LU1210800798	No	EUR	USD
Track Privilege	DIS	LU1210300846	Annual	EUR	USD
Track I	CAP	LU1210800623	No	EUR	USD
Track IH GBP	CAP	LU1210301081	No	GBP	
Track X	CAP	LU1210301145	No	EUR	USD

All these share classes are not necessarily active.

- **Risk profile**: specified risk type among the ones listed in book I (counterparty risk, credit risk, derivatives risk, liquidity, operational & custody risk, currency exchange, equity market risk, inflation, IR risk, low interest rate consequence: "A very low level of interest rates may affect the return on short term assets held by monetary funds which may not be sufficient to cover management and operating costs leading to there a structural decrease of the net asset value of the sub-fund.", TE, taxation risk…)
- **Investor type profile:** sub-fund suitable for investors… accepting one stated level of risk.
- **Accounting currency:**
- **Share categories:**
- Share Categories

Category	Class	ISIN code	Dividend	Reference Currency	Other Valuation Currencies
UCITS ETF	CAP	LU1481200217	No	EUR	
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Track IH GBP	CAP	LU1210301081	No	GBP	
Track X	CAP	LU1210301145	No	EUR	USD

All these share classes are not necessarily active.

- **Anti-dilution levy:**
- **Valuation Day:** based on the dates on which banks are open for business in Lux and a benchmark index is published; also called orders trade date. NAV calculation & publication will be done in valuation day +1.
- **Exception**: when are orders processed at un unknown NAV in accordance with the rules set out below and in book I, only on Valuation Days Subscription, redemption and conversion orders will be processed at an unknown net asset value in accordance with the rules set out below and in Book I, only on Valuation Days with the exception of days when the components of the Benchmark Index with a weighting that represents a significant proportion of the index (in excess of 10%) are not tradable or their reference market is subject to early closure, unless otherwise decided by the Board of Directors.

(MI) Dans les réplications commos (BNP Paribas Easy Energy & Metals Enhanced Roll), il y a "at least 51% of the assets will be invested at all times in equities […] The sub-fund may invest in transferable securities linked to the index, such as certificates and/or in futures, cash or Money Market Instruments."

- In synthetic replication: TE mainly due to the cost of the swap and cash drag

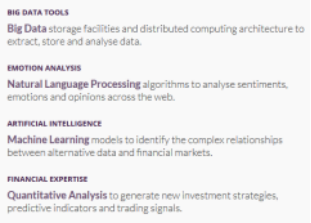
(MI) Dans le prospectus type smart beta: Equity Low Vol Europe - Manager of the sub fund's portfolio will be able to switch between two index replication methods (full replication v synthetic) to ensure optimum management of the sub-fund.

Concepts

- **Switch d'indice:** changement d'indice de ref, par ex sur les émergents; on prend un truc proche en terme d'univers mais avec plus de filtres, … Ca peut se faire si la license coûte trop cher (ex: le petit fonds sur l'Egypte etc). Passe normalement bien auprès des instits.
- **Où voir les weights pf dans le PCF:** check "Exp benchmark" (expo = weight dans le benchmark). Exp active = différence entre le weight benchmark/weight actif.
- **Où voir le type de réplication:** si dans le benchmark, plein d'expos à qqlqs bps, alors bcp de titres donc on va pas répliquer tout le truc.
- **Online brokers in Europe**: Meesman, Lynx, Interactive Brokers, Degiro (Dutch), Internaxx (ex-TD Direct Investing / TD Ameritrade), InvestorsEurope, StockTrade, robo-advisors:
  - Scalable Capital (DEU)
  - The Money Farm (IT)
  - Nutmeg (UK)
  - OwlHub (DEU)
  - Vaamo (DEU)
- **Invesco (US)** also operates under the brand nmae Trimark, Invesco Perpetual, Powershares. Bought out Guggenheim Investment's ETF business for $1.2bo in cash in Sept. 2017
- **Active ETFs**: portfolio manager can adjust the portfolio as needed while not being subject to the set rules of an index (Fidelity). In 2003, Powershares introduced the first ETFs that followed quantitative indexes based on active management strategies. Idea is to perform better than a benchmark index through flexible active management.
  - **Advantages**:
    - Outperform indexes rather than track
    - Charge less than open-end counterpart because the structure allow them to eliminate many client services and reduce the cost of some administrative services
    - No min holding time
    - Usual flexibility (buying on margin, short selling)
  - **Disadvantages**:
    - Daily reporting of positions and reporting intraday price without giving away exactly what the manager is doing. Every active ETF on the market today must disclose holdings daily - massive hurdle preventing mass adoption. Note that in Europe, PCF sent to Aps daily.
    - Full disclosure enables front running + exploit a manager's tactics at no cost
    - Large premiums/discounts to NAV on volatile trading days-and no creation/redemption arbitrage that would have the AP narrow the gap + difficult to hedge positions without exactly knowing hte underlying securities in an actively managed ETF during the day
    - Obv higher costs
  - **Popular**:
    - Popular: see here
  - **The disclosure challenge: n**ote that European exchanges' disclosure rules vary: some removed the requirement for daily disclosure - LES & Borsa Italiana have opposing ETF disclosure requirements. Ground: may be solutions to entice Aps to keep

trading price close to NAV without disclosing portfolio holding (confidential brokerages accounts) ; but since most ETFs are cross-listed, might as well go for full daily disclosure. Note that Aps are contractually bound not to divulge proprietary info. Who are the liquidity providers: MS etc.

- **Taux d'abonnement sur fonds (DROIT LUX)**: les fonds de droit luxembourgeois sont soumis à un impôt calculé sur la base d'un taux sur le montant de leur actif net, payable trimestriellement. Taux de base applicable: 0.05%. Certains fonds bénéficient d'un tx réduit ou d'une exemption, par ex fonds monétaires et fonds indiciels faibles (pcq y'a pas de marge à consommer déjà), ou fonds spécialisés dans le microcrédit (intérêt général.) Note: il y a concurrence avec le droit fiscal d'autres pays: exonératio complète sur fonds indiciels et fonds monétaires en Irlande. *"Si 5bps est peu significatif pour un fonds à 2% de frais annuels de fonctionnement, il en est désormais autrement avec un niveau de frais descendant à 50bps, <u>y compris pour des fonds actions en gestion active</u>."*
- **Portfolio turnover rate (out of 100%)**: exclude portfolio securities received or delivered as a result of processin capital share transactions in Creation units.
- **Methodologie**: div yield focus index. Weight by dividends: must have sufficient index capacity and low turnover. Divs are one of the fezw csts in the world having contributed a significant portion of equity markets' historical total return. Fill a psychological gap: when the bulk of a stock's return is built with steady divs, there's less reason for investors to sell at every bump in the road. "The index uses an available-dividend model that emphasizes company size as well as divs, which allows Morningstar to retail the primary benefits of market cap weighting.
- **Masterfile**: dispo sur sharepoint (frais, ADL anti-dilution levy); DMC = inventaire mais créés pour les clients - qd c'est du synthétique ils mettent la composition de l'indice de base; factsheet - édité monthly, c le rapport mensuel)
- **Due diligence**: qd les sales répondent aux appels d'offres, y'a un fichier à remplir (le RFP) - fichier d'appel d'offre ; avec vente/market / gestion. Due diligence: plutôt focus performance
- **Flipbook**: leaflets (comme ceux que t'as lu et qui se tournent en petites pages)
- **SESAMm:** analyze billions of news articles, social media messages, blogs, forums posts to help predict financial markets movements - using NLP, attentive to the specific needs of Groupama AM.



- **Prêt/Emprunt d'ETFs?** MS offre environ 50 produits à des investisseurs voulant shorter des indices. "*Le manque d'ETF à emprunter en Europe est une source de frustration pour les investisseurs qui sont habitués à traiter sur le marché américain, où ils sont parmi les instruments les plus liquides sur le marché du prêt de titres.*" 51 fonds indiciels cotés = 2/3 des volumes traités sur ce segment sur les bourses européennes - accepté par iShares + Lyxor (SocGen) + Amundi ETF + Source qui fourni une gamme de produits sectoriels. "Il est désormais courant que des instits ou des déposaitaires déposent ds un programme de prêt-emprunt une liste d'ETF susceptibles d'être empruntés contree une rémunération, comme c'est déjà la pratique pour les actions. "
- L'originalité de l'offre de Morgan Stanley tient au fait que la banque ne fera pour sa part pas appel à des prêteurs et n'aura donc pas à les rémunérer, ce qui doit lui permettre de pratiquer une tarification compétitive. En tant que courtier, il détient en permanence de très importants portefeuilles d'actions. Aussi, il se propose de constituer à la demande le « panier parfait » représentatif d'un indice, de l'apporter à un promoteur d'ETF qui, en échange, fournira les parts de l'ETF ainsi répliqué, lesquelles seront prêtées à l'investisseur. Cependant ce mécanisme ne vaut que pour les fonds à réplication physique (composés exclusivement des titres sous-jacents des indices), c'est-à-dire ceux d'iShares, tandis que pour les fonds à réplication synthétique (composés de produits dérivés offrant la performance de l'indice à hauteur de 10 % maximum de l'actif et par ailleurs de tout type de titres), le promoteur reçoit un *swap* et un panier de titres dont la nature est indifférente. Dans cette seconde hypothèse, en pratique la plus courante, Morgan Stanley n'a donc pas la nécessité de fournir, donc de détenir, les titres représentatifs de l'indice concerné. Ppalement utilisés pour shorter des indices + perspective directionnelle plutôt que couverture.
- **Les ETFs comme alternatives aux futures**: pcq
  - il n'existe pas tjrs un future sur l'expo souhaitée
  - les futures sont svt centrés sur les indices les plus liquides
  - pb des rolls (futures soumis à échéances fixes)
  - impact des taux et de l'évo des divs.

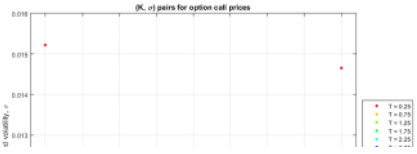
  Cpdt: utiliser un ETF = pas de buy on margin/effet de levier, il faut débourser direct.
- **Source (JPM ETF Promoteur)**: promoteur fondé par plsuieurs gdes banques d'investissement = BoA Merrill Lynch, CS, Goldman Sachs, JPM, MS, Nomura . Auj, 3Ma en pos short sur les fonds source répliquant ces indices de secteurs. Source a été racheté par Invesco.
- **European Short ETFs**: stocks, bonds, commos of a given index with a price that's closely tied to the net value of those assets. In contrast, short ETFs seek to perform as the inverse of a specific index - which they accomplish through short-selling stocks, trading derivatives, using futures contracts.... [Ex] ProShares UltraShort FTSE Europe ETF + Market Vectors Double Short Euro ETF + ProShares UltraShort Euro ETF. Note that the products are very volatile and suitable only for ST traders. Additionally, the daily rebalancing (when combined with leverage) may make these products deviate significantly from the expected LT perf figures.
- **Le lending c'est vraiment dans une optique de couverture** (ex les gens qui ont prêté et doivent rendre & donc réempruntent le titre qqlq part et rolls...)
- **Pourquoi est-ce que les gens veulent emprunter et shorter des ETFs alors qu'il y a des ETFs inverses qui existent? I**nvestors interested in short-selling European economies with ETFs may also short-sell long ETFs. The shares must be borrowed from a brokerage, sold for cash, then replaced over a period of time. Long ETFs that European can short sell: iShares MSCI Europe Financials Sector Index Fund (EUFN) + Vanguard MSCI Europe ETF. Note: the costs are still significant (>20% p.a)
- **Inverse European CDS ETFs**: inverse exposure to HY credit through direct access to the CDS market - how do CDS work? Once again?
- **Tabula European iTraxx Crossover Credit Short UCITS ETF (TECS LN) tracking the iTraxx European Crossover Credit Short Index** - index dvp by Tabula in partnership with IHS market. According to Tabula, CDS indices offer a high degree of liquidity; CDS trading on the iTraxx European Crossover indices attrack around $1.8bo daily. Read more here
- **Seeding ETFs:** no ETF can come to market without seed capital, but finding that money is increasingly difficult. Niche business: seeding new ETFs - like AI powered equity ETF... What do they do: seed new ETFs + involved in secondary market for ETRF products + make tight spreads + assist RIAs with block trades. So basically lend capital + pull back of the ETF once its properly launched. Usually takes between one day and 6 months - 30 days on avg, by selling the shares on the open market to would-be long term holders. Note that we almost never hear anymore of ETFs coming to market with 550Mo or 100Mo - bc proliferation of new issuers, many banks don't use their capital seed anymore (other places to ytield higher returns) // Rockfeller seeds ETFs for good. Now, anyone who has 250k can start an ETF - but how do you grow your product, get name recogn, how do you makret and do PR.
- **Cash sweep**: use of company's excess cash to pay outstanding debts ahread of the scheduled payment date instead of giving it to their investors or shareholders = minimize risk, liability. Automatic bank process where funds are transferred from an investment account to a deposit account to reduce the rates paid. "Process to use excess CFs to maximize interest earnings or to pay off outstanding debts instead of distributing it to shareholders." Firms use borrowed money for expansion or to finance cash shortages, in which case new liabilities arise.

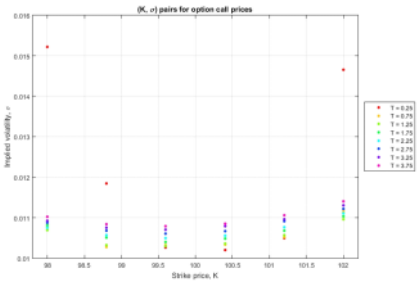
  => Cash sweep = total cash at hand - minimum cash balance for operations + debt service CG.
- **Febelfin Compliant**: Febelfin = label belge pour les fonds responsables. "Les entreprises qui sont encore trop enaggées dans les combustibles fossils les plus nocifs, comme le charbon, seront exclues. De cette façon, le secteur financier s'assure que les investissements soient orientés vers les entreprises qui veulent renforcer leur impact positif. Certaines entreprises du secteur de l'énervie sont certes encore trop impliquées dans des sources d'énergie controversées type gas de schiste. Cpdt, il est encore possible d'investir dans ces entreprises jusqu'en 2020 - dans une mesure très limitée - mais le produit se verra alors attribuer un label adapté.
- **S Series v SRI:** nom des nouveaux indices MSCI que BNP PAM va suivre à la place des MSCI SRI.
- **Threshold de liquidation**: pas de threshold @BNP PAM, c'est plutôt une réflexion stratégique avec les sales
- Purchasing Managers Index: existe aussi en France

- **Winsorizing variables:** "I verify that winsorizing all variables at the 0.5% upper and lower tails of their distributions does not affect the results." = gestion des outliers, on cap la valeur aux extrémités arbitraires de la distribution & on vérifie si les résultats sont similaires
- **Liquidity trader**: privide liquidity to the market. Buy from anyone willing to sell at slightly less than the mid, sell to anyone willing to buy for slightly more than the mid. In quiet markets, they earn a small spread on each round trip. But whenever there's a big move, they risk getting caught on the wrong side. Try to avoid trading with informed traders, want to provide liquidity only to the people who are trading for reasons unrelated to price (such as selling to raise cash) or who know knothing. Liquidity traders can be market makers on big dealing desks, HFT or anything in between. IN BARRY JOHNSON: "must trade in order to fulfil certain requirements, such as to release capital or to adjust the balance of a portfolio. "Unsurprisingly, microstructure models have shown that over the LT liquidity traders generally lose if they trade with informed traders. Likewise, passive traders tend to profit from active traders."
- **Informed trader**: buy and sell because they think they can predict the direction of the price move. Usually insiders or hedge funds. IN BARRY JOHNSON: "traders assumed to have private info, which enables them to accurately determine an asset's true value.
- **Active traders**: those who demand immediate exec and push prices in direction of their trading
- **Passive traders**: effectively supply immediacy and so stabilize prices
- **Periodic call auction**: introduced by SEBI in 2013 to curb volatility in illiquid stocks. The criteria of illiquidity is explained in a SEBI circular (things like daily avg nb of trades < 50, trading volume < 10k...) Call auction in these stocks would be done every hour starting 9:30am on each trading day and trading would be done in 3 distinct activities:
  - Order entry + order modification + order cancellation (first 45min)
  - Order matching & trade confirmation (next 8min)
  - Session closing & transition to the next auction (final 7min).
- **Arrival price**: defines the implicit cost as the difference between the mid-market cost of an asset at the time the order is placed ("arrival price") v price at the time of exec.

How do we derive implied distributions from options prices?

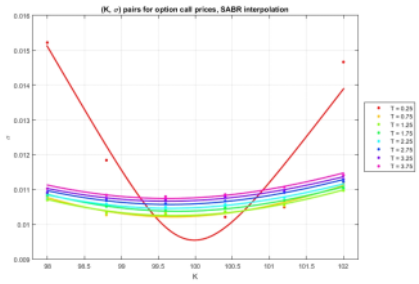
1. **Compute implied vol from market data**





2. **Create additional data points using SABR interpolation**

Simple methods for interpolation include fitting quadratic functiuons to the data for each expiry time. Using SABR giveds more accurate results at the endpoints of the data set.



Colors plot maturities: volatility smiles for each expiry time obtained using SABR interpolation.

3. **Estimating implied probability densities**

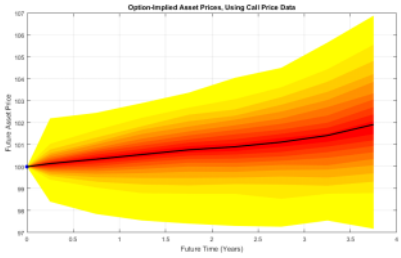
After interpolation, we have enough data points to estimate the implied strike price density functions at each expiry time. We use a computational finance principle developed by Breedan, Litzenberger, which states that the probability density function f(K) of the value of an asset at time T is proportional to the second partial derivative of the asset call price.

4. **Simulating future asset prices**

Hence: first you quote, for each maturity, the price of the options according to the implied vols you have registered, then you compute tje numerical partial derivatives with respect ot the strike price (gamma). The curves are going to be less complete as maturity increases (since no data for high maturity super OTM options?) Then you fill up the gaps using the curve fitting toolbox, and that gives you complete probability distributions for asset prices at all future times. Then, you can randomly sample from each distribution to create a forecast matrix.

5. **Presenting the forecast uncertainty in a fan chart**

You can create a fan-chart as such, to show the confidence interval around the median trajectory - with each band representing different quantiles of the forecast simulation matrix.



"The IV is derived under the log normal assumption for the return series. Experience shows that the IV of an asset return tends to be larger than that obtained by using a GARCH type of volatility model."

Legal basis for all this Impact Investing

31st Jan 2018, European Commission's High Level Expert Group on Sustainable Finance = 8 strategic recommendations for a financial system that supports sustainable investments. 4rth: challenge of retail investment in socially responsible and sustainable investment products.
"*Citizens with savings to invest should be empowered to invest in portfolios that reflect their sustainability and ethical preferences. The direct result would be to bring a substantial part of the EU's financial assets into pools of capital contributing to sustainable finance.*"
In May 2018, the commission adopted a package of measures implemetning several key actions:

- EU classification system of sustainable economic activities
- Improving disclosure requirements on how instits investors integrate the environmental, social and gov factors in their risk processes.
- Creating a new category of benchmarks to help investors compare the carbon footprint of their investments.

SRI have market share of about 5-10% (depending on the scope and definition used) while socially responsible savings products = 1% of total savings. Bref, on retiendra que febelfin = NGO in Brussels that gives labels to stuff.

PCF

- Share class:

Track Classic Capitalisation
Track Privilege H EUR Capitalisation
Track I Capitalisation
Ucits ETF Capitalisation
Track Privilege Capitalisation
Track Privilege Distribution
Track X Capitalisation
Track privilege GBP Capitalisation

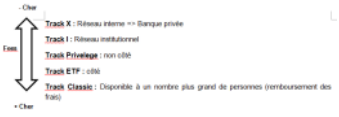
- **NAV adjusting entries:** mostly interest on current cash account + divs
- **For each share class, fees type:**

Other fees 9CC	9CC
MANAGEMENT FEES 9CC	9CC
Foreign UCI Tax & Regulator Levy 9CC	9CC
Taxe Abonnement 9CC	9CC

- **Lire P&L breakdown pour avoir le split entre capital, interest, taxes, sundry income**
- **Bref, les mêmes infos répétées plusieurs fois avec différentes orgas type compta…Takeaway: différents types de parts, hedge, what do they do with their cash reserves, taxation.**

Each ETF's portfolio composition page provides more details on holdings and objectives for each ETF available through Fidelity.com. This includes a comprehensive overview of the characteristics of the ETF's current holdings as compared to its objectives. For example, is the ETF holding securities with exposure to foreign countries or regions? What percentage is held in small capitalization stocks, a particular sector or industry, or corporate or municipal debt types?

Types of shares



Why it pays to lend ETFs

How much do you earn: Securities Lending utilisation rates for these ETFs have been 3x higher than those of conventional U equities in the first 3 months of the year. Notably,investors were also willing to pay a premium to borrow US ETFs, which have a cost of 55bps to borrow on avg (15% vs 46bps earned by US equities).

Global ETF investors earned over 167Mo from lending out ETFs over the last 12M. This represents a return of 11.6bps on the ETF assets that are available in lending programs over this period.
How is it going in Europe: Fast-developing European ETF lending market with increasing supply and demand, as noted in Q1 Securities Finance (rev + 15% year on year in Q1.) As a result: lower cost of ownership in the asset class
What are your final costs? investors were able to recoup 40% of their costs simply by making their ETF assets available to lend.
Which ETFs can you lend? Those ETFs which generated the most fees in the securities lending market over the last 12 months are very diverse in terms of their exposures. They include heavily traded mega hard to short asset classes such as high yield bonds and emerging market equities, and those that track relatively volatile asset classes like small cap stocks and biotechs.
Why it matters: possibility for lending becomes a decision criteria for investors choices of ETFs (see page 2)
Only &17 ETFs are lendable in Europe so far? Largest net fee generator = iShares Core FTSE 100 (costs 7bnp + investors earned 23 bps)
Globally, only 5M of the total ETF AUM sits in leending programs = woefully behind conventional equities considering that over a quarter of the Russell 3000's market cap now sits in lending programs.

Acceptable Collateral - Public regulatory grid

Asset Class	Minimum Rating accepted	Margin required / NAV	Cap by asset class / NAV	Cap by Issuer / NAV
Cash (EUR, USD, GBP or other Valuation Currency)		[100 - 110%]	100%	
Fixed Income				
Eligible OECD Governement Bonds	BBB	[100 - 115%]	100%	20%
Eligible Supra & Agencies	AA-	[100 - 110%]	100%	20%
Other Eligible Countries Governement Bonds	BBB	[100 - 115%]	100%	20%
Eligible OECD Corporate Bonds	A	[100 - 117%]	100%	20%
Eligible OECD Corporate Bonds	BBB	[100 - 140%]	[10% - 30%]	20%
Eligible OECD Convertible Bonds	A	[100 - 117%]	[10% - 30%]	20%
Eligible OECD Convertible Bonds	BBB	[100 - 140%]	[10% - 30%]	20%
Money Market Units (1)	UCITS IV	[100 - 110%]	100%	20%
CD's (eligible OECD and other eligible countries)	A	[100 - 107%]	[10% - 30%]	20%
Eligible indices & Single equities linked		[100% - 140%]	100%	20%
Securitization (2)		[100% - 132%]	100%	20%

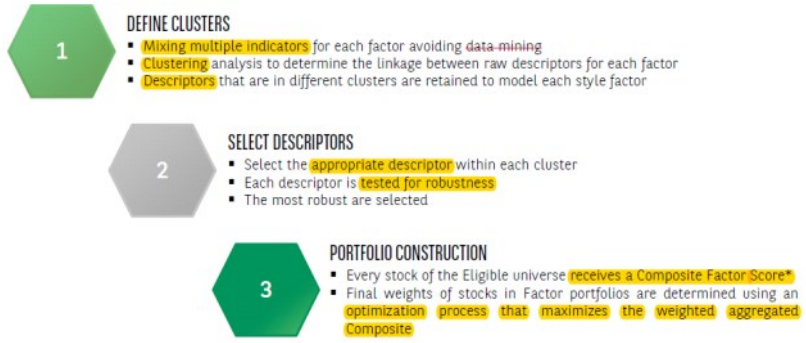
(1) Only Money Markets funds managed by BNPP AM. Any other UCITS eligible only upon ad-hoc approval by BNPP AM Risk

(2) Subject to conditions and ad-hoc approval by BNPP AM Risk

Index/ETF Solutions - Smart Beta

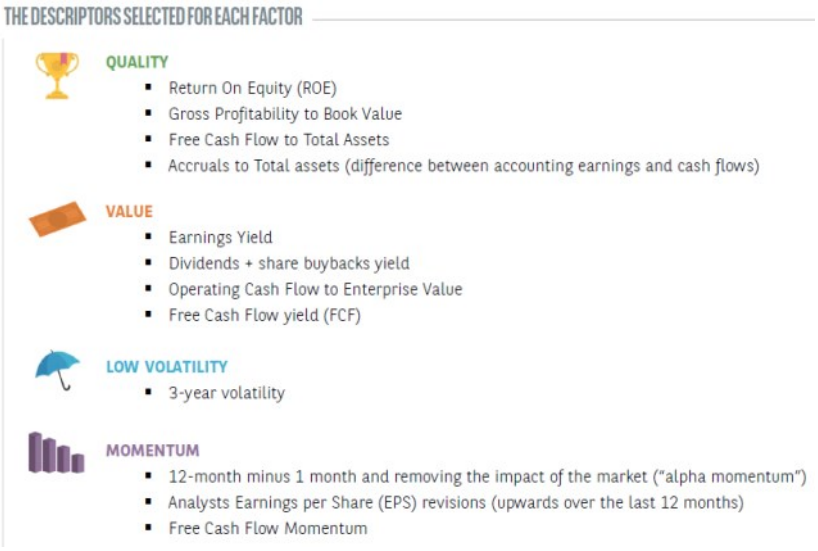
mardi 6 août 2019
14:03

Smart Beta Pres



What is low vol made for: clustering pour déterminer les features les plus importantes pour chaque facteur + select the most relevant feature in each cluster + test for robustness.
Portfolio construction: each stock in eligible universe receies a composite factor score ("ajusted to target industry neutrality" - pcq l'objectif c'est diversification acorss classes); then maximize the aggregated composite

- **Based on "ratio d'information" càd rdt moyen d'un actif par rapport à la moyenne d'un pt de référence / erreur de suivi.** Si élevé, le portefeuille dépasse régulièrement le benchmark.
- Formule:
- $$IR = \frac{E[R_p - R_b]}{\sigma} = \frac{\alpha}{\omega} = \frac{E[R_p - R_b]}{\sqrt{\mathrm{var}[R_p - R_b]}}$$
- Donc en gros une mesure de perf par rapport au benchmark, pondéré par la vol.
- **C bizarre qu'un coef de détermination soit négatif non?** (sachant que c'est le carré du correl coefficient)
- *"Values of R^2 outside the range 0 to 1 can occur when the model fits the data worse than a horizontal hyperplane. This would occur when the wrong model was chosen, or nonsensical constraints were applied by mistake." On note aussi que R^2 = 1 - residual sum of squares / total sum of squares = yi - yi^*)
- **Jensen's Alpha**, also known as the **Jensen's** Performance Index, is a measure of the excess returns earned by the portfolio compared to returns suggested by the CAPM model. It represents by the symbol α. The value of the excess return may be positive, negative, or zero.



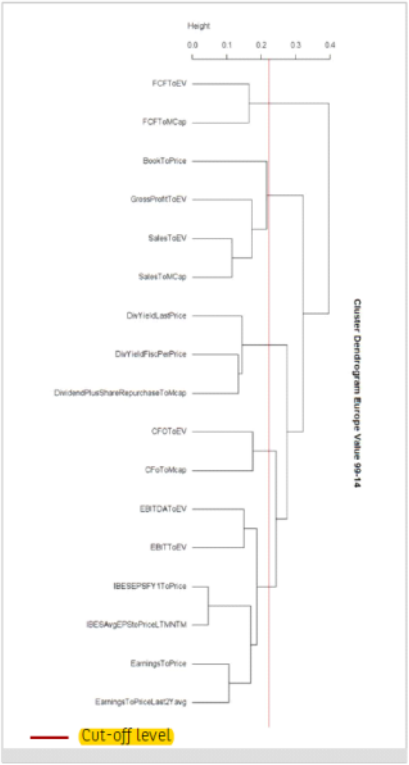
- **3 key criteria when building the portfolio:**
  - Max exposure to that factor given
  - Min concentration risk
  - Vol of Jensen's alpha
  - Min turnover

Quality **Business model** **ROFF** **Fundamentals**	• **Return on equity (ROE)**: efficiency in using money from shareholders to generate profits and growth • **Free cash flow to total assets**: difference between cash flow from operations and capital expenditure, divided by the total assets of the company • **Gross Profitability to Book Value:** difference between sales and cost of goods sold, divided by the book value of the company to give a per share value • **Accruals**: measures how earnings differ from cash flow ____ *Sur la perf cumulée BNP Paribas Easy il manque juste 5% par rapport au Stoxx 600...* ____ Par rapport à MSCI: better perf, "T*he MSCI has no risk calibration system, while BNPP strategy aims to limit the expected volatility of the Jensen's alpha below 4%*", rebalancing monthly (msci = bi annuel),
Value **Cheaper** **RON** **Fundamentals**	• **Dividend yield corrected for share repurchase:** expressed as the sum between dividend yield and share repurchase yield per share • **Earning yield:** based on IBES1 consensus figures, expressed as the average earnings yield per share over the preceding 2 years • **Net cash flow from operations to enterprise value:** measures operating cash flow divided by enterprise value • **Free cash flow to market cap:** defined as the difference between cash flow from operations and the capital expenditures, divided • **by the market capitalisation** _____ *Better perf than Stoxx 600.* _____ Par rapport à MSCI: no risk calibration, rebalancing, BNPP égalise le poids de chaque secteur v msci c'est capped
Mom **Positive trend** **RON** **Empi**	- **Price momentum:** defined as the difference between the absolute price return of a share over the past month and its absolute price return over the past 12 months - the contribution of the STOXX Europe 600 index is deducted - Balance of upward and downward **earnings revisions:** based on IBES1 consensus figures over the preceding 12 months - Standardized **unexpected free cash flow:** measures the increase in free cash flow year-on-year (difference between cash flow from operations and capital expenditure) "12-mi
Low vol **RON** **Empi**	Historical volatility of the stocks over the **last 3 years** _____ *Décrochage depuis oct 2016, shitty since*

The engine powering the investments relies on extensive statistical analysis:

- We identify diversifying clusters of descriptors for each investment style
- We select the most robust descriptors within each cluster
- We set final weights of stocks to optimize the aggregate factor score under stability, turnover

and diversification constraints



Définissent arbitrairement un cut-off level sur le dendogramme; définissant chaque cluster - puis analysent les features les unes à la suite des autres de manière robuste (lol), puis stock picking selon les features retenues sous contraintes.

Bref, il faudrait regarder le robust analysis screen avec JB…

	1993-2014					
	IR Alpha L/S	IR L/S	Turnover One way L/S	Beta ex-post L/S	IR with TC 30bps per 100%Turn over	IR Alpha L
GrossProfitToEV	0.51	0.62	159%	0.06	0.52	0.49
EBITDAToEV	0.62	0.65	179%	0.02	0.54	0.60
CFOToEV	**1.22**	**1.23**	**222%**	**0.00**	**1.09**	**0.96**
CFoToMcap	0.74	0.83	240%	0.06	0.69	0.56
EarningsToPrice	0.47	0.42	237%	-0.02	0.28	0.61
EarningsToPriceLast2Yavg	0.42	0.40	208%	-0.01	0.28	0.52
IBESEPSFY1ToPrice	0.44	0.49	274%	0.03	0.33	0.53
IBESAvgEPStoPriceLTMNTM	**0.48**	**0.55**	**253%**	**0.04**	**0.40**	**0.58**
EBITToEV	0.64	0.49	208%	-0.07	0.36	0.64
FCFToEV	2.01	1.66	265%	-0.12	1.50	1.85
FCFToMCap	**1.73**	**1.61**	**318%**	**-0.05**	**1.42**	**1.35**
DivYieldFiscPerPrice	0.74	0.46	162%	-0.11	0.36	0.79
DivYieldLastPrice	0.55	0.45	193%	-0.04	0.34	0.58
DividendPlusShareRepurchaseToMcap	**1.13**	**0.86**	**238%**	**-0.10**	**0.72**	**1.12**
BookToPrice	-0.07	0.12	180%	0.11	0.01	-0.01
SalesToEV	0.12	0.29	130%	0.09	0.21	0.10
SalesToMCap	-0.10	0.12	144%	0.13	0.04	-0.07

Systematic Equity Strategies

May be represented as factors in risk models: allow investment managers to better understand and monitor the sources of risk and return of equity portfolios. Why consider SES factors:

- **Good predictors of future CFs, hence stock returns+ viewed in practice as important sources of abnormal returns + drive vol & correl among stocks (that can hence be captured in risk models)**
- **4 broad categories of Systematic Equity Strategies:**

Systematic Equity Strategies			
Valuation	**Quality**	**Sentiment**	**Momentum**
Value	**Earnings Quality**	**Analyst Estimates**	**Price Momentum**
Book-to-Price	Accruals*	Estimate Revisions*	Stock Momentum
Dividend-to-Price	Cash Earnings*	**Analyst Ratings**	Industry Momentum*
Sales-to-Price	Sales Turnover*, ROA*	Ratings Changes*	**Linkages**
Cash Flow to Price	**Financing Quality**		Geographic*
Earnings Yield	Composite Issuance*		Economic *
EBIT/EV*	Net Stock Issuance*		Analyst Coverage*
Fwd E/P	**Management**		**Flows**
	Management Bias*		Mutual Fund Flows*
	Insider Transactions*		**Reversal**
	Investment Decisions*		Short-* & Long-Term*

* New SES factors

- Factor effectiveness depends of crowding (amount of capital), coming from improved market efficiency - thus, faster price discovery. Crowding also a sources of risk in price discovery /frictions, shorting constraints, transaction costs. [Additional crowding risk: valid for a wide range of unanchored strategies - eg strats where the investor does not know how much capital is pursuing the strategy - where prices move towards then further away from fundamental prices / additional volatility during the price discovery process.

MSCI Facs

Industry, Country, Currency and Style factors account for 55% of the active return of a sample of 882 actively managed global funds over the past decade. Within the factor contribution, style Factors made up the largest portion of active returns (35%)

Introducing our latest Factor Innovation – MSCI FaCS™

VALUE	SIZE	MOMENTUM	QUALITY	YIELD	VOLATILITY	GROWTH	LIQUIDITY
Book-to-price Earnings yield Long-term reversal	Size Mid cap	Momentum	Leverage Earnings variability Earnings quality Investment quality Profitability	Dividend yield	Beta Residual volatility	Growth	Liquidity

Based on MSCI's Global Equity Factor Model, MSCI FaCS includes 8 Factor Groups, and 16 Factors.

Bond stuff

jeudi 8 août 2019
16:25

Low Risk Anomalies in Global Fixed Income: Evidence from Major Broad Markets (2014)

"*In all cases, the results from our analyses were extremely consistent with portfolio sinvested in bonds with the lowest DTY always realizing lower vols, lower beta, delivering positive alpha and the largest Sharpe ratio - while portfolios invested in bonds with highest DTY always realized the larger vols, higher beta and delivered negative alpha and lower Sharpe ratio*."
"*Profiting from low risk anomaly may be even easier if investors remain benchmarked against the market-cap indices. From a relative perspective, our results suggest that benchmarked investors should build their tracking erro rrisk by investing in the portfolio with levels of DTY somewhat below the market's, but not too far below. [...] Due to the combination fo beta below 1 and the positive alpha from investing in lower DTY bonds,*

Stratified Sampling

https://www.trackinsight.com/education/education-optimised-sampling
Why use SS: transaction costs, nature of the underlying & liquidity.
SS Gist: build a new portfolio with the same characteristics as the index, with fewer securities to reduce the exposure to illiquid assets.
Methods to build:

- **Portfolio Optimizer:** use historical returns and correlations to build a new portfolio with an ex-ante TE target. Parameters:
  1. Number of securities in the portfolio (arbitrary c
  2. Ex-ante TE target
  3. Sector/country deviation limits
  4. Estimated trading cost
- **Stratified sampling:** statistic aiming atbuilding a sample of the population by taking a subset from each stratum. The portfolio manager divides the underlying of the benchmark in multiple risk buckets with similar characteristics and select individual securities to build the new portfolio. Stratification parameters:
  1. Duration/Convexity
  2. Country
  3. Sector
  4. Maturity
  5. Credit Rating

  More arbitrary than optim, in the sense that the selection is often based on the portfolio manager's fundamental view of each security.

CHAPTER 4 IIT: SAMPLING THEORY

Also called proportional random sampling or quota random sampling.
http://home.iitk.ac.in/~shalab/sampling/chapter4-sampling-stratified-sampling.pdf
Simple random sampling: if homogeneous population, simple random sampling is enough to provide a representative sample. Used to represent the entire population, mostly when there is little info available about its characteristics or when the data population has far too many differences to be divided into subsets, or when there is only one distinct characteristic among the data population.
If population isn't homogeneous: the variance of sample mean not only depends on the sample size and sampling fraction but also on the population variance. Hence: to increase the precision of the estimation, we use a sampling scheme which can reduce the heterogeneity in the population.

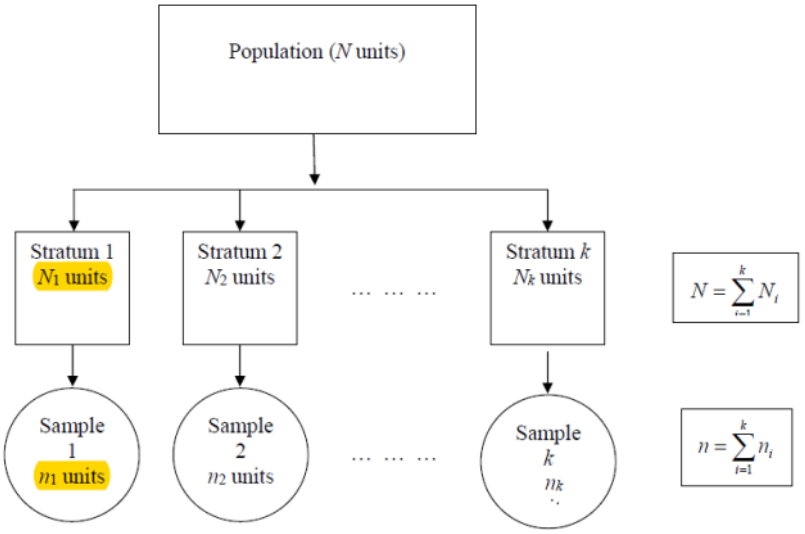
- Proportionate stratification: the sample size of the stratum is poportionate to the population size of the stratum
- Disproportionate stratification: the sample size of the stratum Isn't.

Note that stratification gives a smaller error in estimation and greater precision that a simple

random sampling method. The greater the differences between the strata, the greater the gain in precision.

Stratified sampling process:

- Divide the heterogeneous population in strata that are homogeneous with respect ot the characteristics under study
- Then treat each subpop as a separate population and draw a sample by SRS from each stratum



Strata construction

- Must be non-overlapping and homogenous = homogeneous inside, heterogeneous outside =/= cluster sampling (heterogeneous inside, homogeneous outside)

Issue in the estimation of parameters in stratified sampling

- Testing on strata samples gives k estimators of a parameter based on the sizes n1, …, nk respectively. Important issue: how to combine the different sample info together into one estimator.
- Estimation of population mean: note that weighting the estimated means of the strata samples using the sample relative sizes gives a biased estimator.

Estimation of the population mean

Based on the expression $\bar{Y} = \frac{1}{N}\sum_{i=1}^{k} N_i \bar{Y}_i$, one may choose the sample mean

$$\bar{y} = \frac{1}{n}\sum_{i=1}^{k} n_i \bar{y}_i$$

as a possible estimator of $\bar{Y}$.

Since the sample in each stratum is drawn by SRS, so

$$E(\bar{y}_i) = \bar{Y}_i,$$

thus

$$\begin{aligned} E(\bar{y}) &= \frac{1}{n}\sum_{i=1}^{k} n_i E(\bar{y}_i) \\ &= \frac{1}{n}\sum_{i=1}^{k} n_i \bar{Y}_i \\ &\neq \bar{Y} \end{aligned}$$

To get an unbiased estimator of the population mean, we weight the estimated strata means by the strata sizes relative to the population size:

$$\bar{y}_{st} = \frac{1}{N}\sum_{i=1}^{k} N_i \bar{y}_i.$$

Now

$$E(\bar{y}_{st}) = \frac{1}{N}\sum_{i=1}^{k} N_i E(\bar{y}_i)$$
$$= \frac{1}{N}\sum_{i=1}^{k} N_i \bar{Y}_i$$
$$= \bar{Y}$$

Thus $\bar{y}_{st}$ is an unbiased estimator of $\bar{Y}$.

Variance of the means (strate by strate)

Variance of $\bar{y}_{st}$

$$Var(\bar{y}_{st}) = \sum_{i=1}^{k} w_i^2 Var(\bar{y}_i) + \sum_{i(\neq j)=1}^{k}\sum_{j=1}^{n_i} w_i w_j Cov(\bar{y}_i, \bar{y}_j).$$

Since all the samples have been drawn independently from each of the strata by SRSWOR so

$$Cov(\bar{y}_i, \bar{y}_j) = 0, i \neq j$$

$$Var(\bar{y}_i) = \frac{N_i - n_i}{N_i n_i} S_i^2$$

where

$$S_i^2 = \frac{1}{N_i - 1}\sum_{j=1}^{N_i}(Y_{ij} - \bar{Y}_i)^2.$$

Thus

$$Var(\bar{y}_{st}) = \sum_{i=1}^{k} w_i^2 \frac{N_i - n_i}{N_i n_i} S_i^2$$
$$= \sum_{i=1}^{k} w_i^2 \left(1 - \frac{n_i}{N_i}\right)\frac{S_i^2}{n_i}.$$

Variance of the estimated population mean

Since the samples have been drawn by SRSWOR, so

$$E(s_i^2) = S_i^2$$

where $s_i^2 = \frac{1}{n_i - 1}\sum_{j=1}^{n_i}(y_{ij} - \bar{y}_i)^2$

and $\widehat{Var}(\bar{y}_i) = \frac{N_i - n_i}{N_i n_i} s_i^2$

so $\widehat{Var}(\bar{y}_{st}) = \sum_{i=1}^{k} w_i^2 \widehat{Var}(\bar{y}_i)$

$$= \sum_{i=1}^{k} w_i^2 \left(\frac{N_i - n_i}{N_i n_i}\right) s_i^2$$

Note: If SRSWR is used instead of SRSWOR for drawing the samples from each stratum, then in this case

$$\bar{y}_{st} = \sum_{i=1}^{k} w_i \bar{y}_i$$

$$E(\bar{y}_{st}) = \bar{Y}$$

$$Var(\bar{y}_{st}) = \sum_{i=1}^{k} w_i^2 \left(\frac{N_i - 1}{N_i n_i}\right) S_i^2 = \sum_{i=1}^{k} w_i^2 \frac{\sigma_i^2}{n_i}$$

$$\widehat{Var}(\bar{y}_{st}) = \sum_{i=1}^{k} \frac{w_i^2 s_i^2}{n_i}$$

where $\sigma_i^2 = \frac{1}{n_i}\sum_{j=1}^{N_i}(y_{ij} - \bar{y}_i)^2.$

Advantages of stratified sampling

- To obtain full cross-section of population: because in simple random sampling, some large part of the population may remain unrepresented.

- In case of skewed population: use stratified sampling to assign larger weights to few extremely large units, which in turn reduce the sampling variability
- When estimates are required for the subpopulations
- To estimate the population mean with higher precision

How to choose the sample size in different strata

Tradeoff: minimize the cost of survey for a specific precision OR maximize the precision for a given cost. Usual methods:

- **Equal allocation:** choose the sample size ni to be the same for all the strata
- **Proportional allocation**: for a fixed k, select the sample size such that it is proportional to stratum size Ni
- **Neyman/Optimum allocation**: considers the size of the strata and variability so that the Var(Yst) is minimized under the constraint regarding the sample size. How to: define a cost function for the survey (depending on overheads + nb of strata) then minimize the function using a lagrangian function:

$$\phi = Var(\bar{y}_{st}) + \lambda^2 (C - C_0)$$
$$= \sum_{i=1}^{k} w_i^2 \left(\frac{1}{n_i} - \frac{1}{N_i} \right) S_i^2 + \lambda^2 \sum_{i=1}^{k} C_i n_i$$
$$= \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{n_i} + \lambda^2 \sum_{i=1}^{k} C_i n_i - \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{N_i}$$
$$= \sum_{i=1}^{k} \left[\frac{w_i S_i}{\sqrt{n_i}} - \lambda \sqrt{C_i n_i} \right]^2 + \text{terms independent of}$$

Thus ϕ is minimum when

$$\frac{w_i S_i}{\sqrt{n_i}} = \lambda \sqrt{C_i n_i} \text{ for all } i$$

$$\text{or } n_i = \frac{1}{\lambda} \frac{w_i S_i}{\sqrt{C_i}}.$$

How to determine λ?

There are two ways to determine λ.

(i) Minimize variability for fixed cost.

(ii) Minimize cost for given variability.

We consider both the cases.

Variance under optimum allocation

Under optimum allocation

$$n_i = \frac{nN_iS_i}{\sum_{i=1}^{k} N_iS_i}$$

$$V_{opt}(\bar{y}_{st}) = \sum_{i=1}^{k}\left(\frac{1}{n_i} - \frac{1}{N_i}\right) w_i^2 S_i^2$$

$$= \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{n_i} - \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{N_i}$$

$$= \sum_{i=1}^{k}\left[w_i^2 S_i^2 \left(\frac{\sum_{i=1}^{k} N_iS_i}{nN_iS_i} \right)\right] - \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{N_i}$$

$$= \sum_{i=1}^{k}\left[\frac{1}{n} \cdot \frac{N_iS_i}{N^2} \left(\sum_{i=1}^{k} N_iS_i \right)\right] - \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{N_i}$$

$$= \frac{1}{n}\left(\sum_{i=1}^{k} \frac{N_iS_i}{N} \right)^2 - \sum_{i=1}^{k} \frac{w_i^2 S_i^2}{N_i} = \frac{1}{n}\left(\sum_{i=1}^{k} w_iS_i \right)^2 - \frac{1}{N}\sum_{i=1}^{k} w_iS_i^2.$$

Confidence interval and choice of degree of freedom to define the variance

Under SRSWOR, an unbiased estimate of S_i^2 for the ith stratum ($i = 1,2,\ldots,k$) is

$$s_i^2 = \frac{1}{n_i - 1}\sum_{j=1}^{n_i} (y_{ij} - \bar{y}_i)^2.$$

In stratified sampling,

$$Var(\bar{y}_{st}) = \sum_{i=1}^{k} w_i^2 \frac{N_i - n_i}{N_i n_i} S_i^2.$$

So an unbiased estimate of $Var(\bar{y}_{st})$ is

$$\widehat{Var}(\bar{y}_{st}) = \sum_{i=1}^{k} w_i^2 \frac{N_i - n_i}{N_i n_i} s_i^2$$

$$= \sum_{i=1}^{k} \frac{w_i^2 s_i^2}{n_i} - \sum_{i=1}^{k} \frac{w_i^2 s_i^2}{N_i}$$

$$= \sum_{i=1}^{k} \frac{w_i^2 s_i^2}{n_i} - \frac{1}{N}\sum_{i=1}^{k} w_i s_i^2$$

The second term in this expression represents the reduction due to finite population correction.

The confidence limits of $\bar{Y}$ can be obtained as

$$\bar{y}_{st} \pm t\sqrt{\widehat{Var}(\bar{y}_{st})}$$

assuming $\bar{y}_{st}$ is normally distributed and $\sqrt{\widehat{Var}(\bar{y}_{st})}$ is well determined so that t can be read from normal distribution tables. If only few degrees of freedom are provided by each stratum, then t values are obtained from the table of student's t-distribution.

The distribution of $\sqrt{\widehat{Var}(\bar{y}_{st})}$ is generally complex. An approximate method of assigning an effective number of degrees of freedom (n_e) to $\sqrt{\widehat{Var}(\bar{y}_{st})}$ is

$$n_e = \frac{\left(\sum_{i=1}^{k} g_i s_i^2\right)^2}{\sum_{i=1}^{k} \frac{g_i^2 s_i^4}{n_i - 1}}$$

where $g_i = \frac{N_i(N_i - n_i)}{n_i}$

There are some mods to be done when the study is qualitative (see pdf)

Measuring the gain in precision due to stratification: you compare the variance of estimators of population mean under SRS and stratified sampling.

Post-survey stratification: in case that the membership of the individuals to a stratum is only known after the survey = first simple random sampling & estimates, then carry out SS & compare gain. The increase in variance in SRS will be small if the average sample size per stratum is reasonably large.

CLUSTER SAMPLING (CH9 IIT)

Any population can be divided into a finite number of distinct and identifiable units called "sampling units" - the smallest units into which the population can be divided are "elements" of the pop. Clusters = groups of elements. Sometimes, lists of elements are not available and the use of an element as a sampling unit is not feasible = use area/cluster sampling instead. Cluster sampling procedure:

1. **Divide the pop into clusters according to some defined rule**
2. **Treat the clusters as sampling units**
3. **Choose a sample of clusters according to a certain procedure**
4. **Carry out an enumeration of the selected clusters** = collect info on all the sampling units available in the sclusters

Difference with stratified sampling: in cluster sampling a cluster is perceived as a sampling unit, whereas in stratified sampling only specific elements of strata are accepted as sampling unit. Accordingly, in cluster sampling the list of clusters represent the ***sampling frame***. Then, a few clusters are chosen randomly as the source of primary data.
Dealing with sizes of clusters: if there are no major differences between sizes of clusters, you can combine them. If there are significant differences in sizes, probability proportionate to sample size can be applied to conduct the analysis.
Use cases: we want to evaluate consumer spending on various modes of transportation in Greater London. Since it's a large area, we want to sample only 6 boroughts out of the total 32. 3 stages:

- **Select a cluster grouping as a sampling frame**: here, we group by borought and the 32 borought represent the sampling frame for the study
- **Mark each cluster with a unique number**
- **Choose a sample of clusters applying probability sampling:** using <u>*systematic random sampling*</u>, we choose 6 boroughts out of 32 and households residing in 6 boroughts will represent samples for the study.

Note: one element cannot be part of several areas. Use cases: in a city, list of individual persons staying in house may be difficult to obtain or not available, but list of all houses available = every individual person will be treated as a sampling unit and every house will be a cluster. Generally: faster, cheaper, more convenient to collect info on clusters rather than sampling units. Absolutely prefer when:

- No reliable listing of elements available
- If list available but location or identification is difficult
- **Warning**: every element of the pop must correspond to one and only area BUT <u>the elements associated in an area need not be located physically within this area.</u> [Ex] In a study of farms, the different fields of the same farm need not lie within the same area segment (then called "*open segment*").
- Closed segment: the sum of characteristics under study for all the elements associated with the segment will account for all the area, livestock… within the segment.

Construction of clusters (same size)
The clusters are concentrated such that the sampling units are heterogeneous within the clusters and homogeneous among the clusters. Estimation of pop mean: first select n clusters from N clusters by SRSWOR, then find the mean of each cluster separately based on all the units in every cluster. Consider the mean of all such clusters means as an estimator of the population mean:

Bias:

$$E(\bar{y}_{cl}) = \frac{1}{n}\sum_{i=1}^{n} E(\bar{y}_i)$$
$$= \frac{1}{n}\sum_{i=1}^{n} \bar{Y} \qquad \text{(since SRS is used)}$$
$$= \bar{Y}.$$

Thus $\bar{y}_{cl}$ is an unbiased estimator of $\bar{Y}$.

Estimated pop mean = avg of cluster means (unbiased) / only works if the clusters have the same size. In practice, only happens when planned (ex: testing on pockets of screws in a screw factory). In reality, doesn't happen often (ex: might be different nb of inhabitants in each boroughts).

Estimation of variance of the mean (same cluster sizes) :

the variance of ycl can be derived on the same lines as deriving the variancer of sample mean in SRSWOR. At cluster level: since cluster members are random, normal var:

$\left[\text{Note that is case of SRSWOR, } Var(\bar{y}) = \frac{N-n}{Nn}S^2 \text{ and } \widehat{Var}(\bar{y}) = \frac{N-n}{Nn}s^2\right]$,

$$Var(\bar{y}_{cl}) = E(\bar{y}_{cl} - \bar{Y})^2$$
$$= \frac{N-n}{Nn}S_b^2$$

where $S_b^2 = \frac{1}{N-1}\sum_{i=1}^{N}(\bar{y}_i - \bar{Y})^2$ which is the mean sum of square between the cluster means in the population.

Using again the philosophy of estimate of variance in case of SRSWOR, we can find

$$\widehat{Var}(\bar{y}_{cl}) = \frac{N-n}{Nn}s_b^2$$

where $s_b^2 = \frac{1}{n-1}\sum_{i=1}^{n}(\bar{y}_i - \bar{y}_{cl})^2$ is the mean sum of squares between cluster means in the sample .

Efficiency of cluster sampling over SRS:

The efficiency of cluster sampling over SRSWOR is

$$E = \frac{Var(\bar{y}_{nM})}{Var(\bar{y}_{cl})}$$
$$= \frac{S^2}{MS_b^2}$$
$$= \frac{1}{(NM-1)}\left[\frac{N(M-1)}{M}\frac{\bar{S}_w^2}{S_b^2} + (N-1)\right].$$

There's a part about intra class correlation between the elements within a cluster

Pop mean with different sizes of clusters: several estimators can be obtained to estimate the population mean. 4 types of estimators:

1. Arithmetic mean of cluster means: biased
2. Weighted mean of cluster means: unbiased mean and unbiased estimator of variance
3. Estimator based on ratio method of estimation: biased to estimate mean, thus variance. The approx bias and MSEof var can be derived directly using the bias and MSE of ratio estimator.

   Consider the weighted mean of the cluster means as

$$\bar{y}_c^{**} = \frac{\sum_{i=1}^{n} M_i \bar{y}_i}{\sum_{i=1}^{n} M_i}$$

4. Estimatr based on ubiased ratio

Bloomberg Market Concepts

lundi 12 août 2019
08:38

- → Each module starts with an outline and ends with an overview of the things you'll have learnt about the terminal.
- → Show transcript to read the course script.
- → Thousands of functions. All mark
- → ed with * are applied to a specific instrument.
- → Search engine: simply type what you're looking for in plain English - suggestions:
  - First block: functions used by most users, or the news relevant to your query.
  - Second block: shows the most relevant securities, issuers, dsets, indices - also where you can find stock and bond tickers.

Key	Function
Keyword <Help>	Search Bloomberg Help
Function <Go> <Help>	Help for a specific function
<Help> <Help>	Live assistance 24/7
HELP <GO>	Getting started with bloomberg
WEI	World Equity Indices
GP*	Graph price
MAIN	Access all bloomberg main terminal functions (explore families of functions by market sector.)
WORLD GDP + GP	Show the compounded GDP growth over the past 50 years
ECST **Eco stats**	Access to the breakdown of world economic indicators (comes with a research bar): US GDP / Inflation/ Industrial Output/ Consumer Sentiment / Energy Production / Regional Debt / Marché de l'emploi… Y compris via forecasts.
ECST + S + What you want **Eco Stats Search**	Directly search for certain economic indicators. S IS NOT OPTIONAL. Can be used to access the breakdown of US/French GDP… = Major stats per country; incl. Probability of recession + demography + gini, etc
ECOW **Eco Watch**	Find the most important data by country.
GDP CURY INDEX	Nominal GDP Growth Rates in Nominal (contains inflation = increases in production and in prices of consumption.) How to display real gdp? GDP CYOY Index (Real) or US REAL GDP GROWTH dans la search bar.

Compare two price graphs	Asset > GP > Contenu du Graph > type the additional line you want
PMI INDICATOR	To show purchasing manager index (NAPMPMI Index for US Manufactoruing Indicator)
NHSPSTOT Index	Plotting US Housing demand (against CYOY to show correlation)
WECO	Access Economic Calendar (for upcoming economic releases) Surv(M): mid-point between what analysts say Actual: what is published in the report If Actual > Survey= pleasant surprise? R/P column: signifies what most users have put an alert on = which indicators are the most watched/anticipated.
Seeing how a consensus was calculated	WECO > Right click on S(Med) > ECOS (estimations d'économistes) to see how this forecast was calculated. Get the nb of estimates, nb of qualified economists, stdev, histogram…
ECFC	Access to overview of a country's economic indicators
ECSU	Economic Surprise Monitor: 40 picked meaningful leading indicators. Surprise indicator: difference between expert forecast and actual (+ being actual exceeded forecast). Red area = more unpleasant than pleasant surprises in the eurozone economic area… (/aggregate economic surprise). Comparison with DAX= shows that the model has some predictive power (but useless since we don't have the aggregate forecast for the 40 indicators…)
TRADE FLOW / ECTR	See a recap of trade flows between major countries. Exports represented outside of the circle, import inside. You can check, for one country, the countries it imports from and the trade volume
FX24	Shows 24/7 FX Session. In Blue: Tokyo trading, Green = London, Orange = NY. The only gap in trading occurs on the weekend.
WORLD GDP	Self explanatory
FXCA	Currency Conversion Calculator
PEG	Shows pegged currencies (or any currency that is somehow linked to another)
WIRA / CURRENCY RESERVES	World International Reserve Assets - see the amount of FX reserves by country + pegged currencies' HC are supposedly high
FXTF / CURRRENCY	FX Ticker Finder - Watch out for currency

CODES	pairs (if Jamaican Dollar JMD 129 = 129 and base currency = USD, means 129 JMD per 1 USD…)
FXC	Currency Rate Matrix (display currency pairs values): colonne gauche = HC, ligne haut = FC => lire HC per 1 FC.
TRADEWEIGHTED	Display currency ER against basket of trade-weighted currency pairs
WBG	The Economist Big Mac Index: shows the current prices of big macs expressed on $ PPA. The last column shows differences in big mac prices against the USD.
IFMO	Inflation Monitor: target inflation rate per country, inflation forecasts per country, policy rates, money supply… All the good indicators (graphing CPI against IRs)
FDTR Index	Fed Funds Rate
PCE CYOY Index	CPI Index (US)
FXFM	Display probability distributions of FX rates for each currency pair of your choice = normal bell curve most of the time, can be spot or forward, showing analyst consensus and probs @different time schedules.
OVDV	Display vol surface
FXFC	Analysts forecast summed up in one table. Clic on one name to see where the forecast comes from (mostly from IB teams worldwide). The avg of the forecast (very bottom) matches the forecast mean. Can display Ib's forecast mean, high, low, forward, median… By contributor on a GP.
FRD	Shows the forward exchange rate for a selected currency pair.
XAU	Gold
WCAP	Display equity market cap per country
FIXED INCOME SEARCH	Bloomberg Encyclopedia of bonds: find corporates, govies, certificates, munis, loans, mortgages (incl. Generics & MBS/Structured). 5 million matches, including 2 million bonds.
BI BUDG	Bloomberg Intelligence: US Federal Budget - Clic on "budget trends" to display the graphs (beware: % of GDP better than nominal amounts). US recessions outlined in red. Shows surplus/decision, discretionary spending, defense, health care, agency budget…
TREASURY SECURITIES	Choose "Treasury Securities Amounts Outstanding" to disp the total amount of US debt according to the FED. ("US

	treausury securities amount outstanding")
SOVEREIGN DEBT OWNERSHIP / DEBT	Displays a pie-chart of the foreign owners of sovereign debt, by country. Foreign investors referred to as foreign holders, otherwise countries are referenced. Les réserves sont aussi référencées.
Company Name > CAPITAL STRUCTURE	Display the parent company + all subsidiaries, locations, and the structure of capital underneath (commercial papers, loans, bonds, market cap…). In Green: lenders - Blue: Shareholders. The "Security Detail" tab displays the exact bond references by type (matu, cpn, yield…) - C relou pcq ça marche pas bien
Company Name > DDIS (Debt Distribution)	Displays company's total debt, nb of issues, bond principal, revolver outstanding, amount available in revolvers… DDIS also works for countries (ex: Rwanda issuing its first bond in 2013…) DDIS shows repayment schedule for all corps and govs.
Company Name > HELP DDIS > GO	Anything DDIS, including definitions of the types of debt (revolver outstanding = revolving loan…)
WCDM	World Country Debt Monitor. Right end: change GDP Def% to move from debt to deficit.
CSDR	Sovereign credit ratings - In green all the upgrades and in Red all the downgrades (cf bottom line). Clicking on the rating gives you the timeline + historical changes
RATD	Rating scale comparisons between all agencies available (Moody's, S&P…)
Company Name > CRPR	Corporate credit rating profile
SOVR	Sovereign CDS Monitor
See implied probability of default for corp/gov	SOVR > Choose country > spread > right click > GP > on the right hand side, y axis =cds rate / donde esta Greece chance of default
IFMO	Inflation Monitor by country
GEW	Global Economy Watch - displays inflation rate worldwide in 1 table
ILBE	Inflation Breakeven Rates: get the inflation expectation using the TIPS method. Screen gives you the spread in yield between a normal local 30Y bond yield & a TIPS yield.
FDTR	Display Fed Funds Rate
EURR002W	Ticker for ECB Main refinancing rate

NH	News Headlines (can do: equity/company's name then NH)
FOMC SIDEBYSIDE	Compares one FOMC statement with the previous, based on speech script. Does not seem to exist with ECB.
WIRP	Shows a list of upcoming FOMC meetings and the probability of hikes or cuts at each meeting. GP: red line shows the % probability of cut at the next FOMC meeting. White = no change. Blue = Hike. Obv all probabilities for a given time add up to 1.
WB	World Bonds = see the yields on the world's most important bonds.
WB > GC	Graph plot: the x access does not signify the passage of time but rather different maturities as observed at a certain point in time.
BYFC	Forecast of the yield curve baseed on UST (3M, 2Y, 10Y, 30Y)
YIELD CURVE	Show the yield curve for some particular securities (govies as basis) + compare with corporate yield curves. OR: possibility to compare with yield curve as observed at any previous point in time.
WIRP	World Inflation Rates: for estimates of ST IR (including Fed's target rate DFTR for overnight IR)
ILBE	TIPS spread for LT IR
*****GC3D Graph curve 3D surface**	3D graph enabling you to vizualise how the yield curve has steepened or flattened through time.
EQS	Equity Screening Function: see the total number of listed equities
WEI	World Equity Indices
Breakdown of indices by GICS sectors	WEI > Click on index name > tab "pie chart & table". Can group by region or sector. Note that there are 11 GICS (Global Industry Classification Standard) gathered in 8 supgroup (e.g. consumer discretionary = durables, automobile, services). You can click on the group names to display the subgroup breakdown… Til individual equities.
See index weights MEMB	MEMB > Choose the index by typing the ticker. Beware: if you don't know the ticker = first search for index > MEMB
See index move contribution of individual equity	WEI > Click on the index > "Table" tab > "All Equities" > Column "Indx Pt". Sum of the individual index move contrib = "net change" (in points) column shown in WEI

TRA **Total Return on Index**	Get total return based on price change + dividends reinvested into the index @certain rate and GP of the former and new curves.
Best and Worst performers in Index over 10Y period	MRR > Choose index > Period.
Get financial statements of a cpy	CPY NAME > FA > Pick the statement you want . Use this to display a graph of earnings year on year.

CODE	Respective Information
CDSW	Credit default swap valuation
CRPR	Current and historical ratings for a specific issuer from various rating agencies
CACS	Corporate actions
CRAT	Bloomberg's company ratings
DES	Loan information
HDS	Institutional and insider holdings
HP	Historical price table
ISSD	Quick overview of the financial data and operations of the security issuer
SRCH	Government and corporate bond search
TRA	Total return analysis
YA	Yield analysis
YAS	Yield and spread analysis

CODE	Respective Information
BANK	Selected global bank and broker monitor
BTMM	A comprehensive picture of the current interest rate outlook for a selected country
BYFC	Bond yield forecasts
CMW	Credit market watch charts
GGR	Global summary of government bill, note, and benchmark bond rates for individual countries
IYC	International yield curves
NIM	New issue monitor
RATC	Current and historical credit rating changes for various issuers to evaluate the financial security of the issuer
WB	World bond markets
YCRV	Yield curve analysis

You can run YAS (Yield & Spread analysis) on Fixed-Income ETFs. What does it do: shows duration, modified dur, convexity - based on a calculator (param spread, price, yield, matu etc) - output risk, invoice (principal, accrued, total, face value…)

Economic indicators

Use of economic indicators: consider US economy through the module. GDP: manufacturing capacity + resources constraints. GDP calculation: 87 Italy includes black market & GDP rose by 17%; 2014 President Goodluck Joanathan includes Nollywood + 2013 Ireland gained 26% growth in GDP due to accounting gimmick. Look for relevant economic indicators to your activity: household income and consumption for chocolate manufacturers.

Essential Economic Indicators:

- **Economic Growth:** market value of all final goods and services produced by a country = C+I+G+(X-M) /Widest

indicator. All figures can be stated in %. Note that highest % = show if the country is rather consumption driven or investment driven. Find the breakdown of GDP in ECST + S // In Denmark, 59% of GDP pushed by gov demand. In the US, main source to look for:
=> Quaterly GDP Report (Bureau of Economic Analysis | Whole Economy as data input | Inflation source handled by GDP Price Deflator)
GDP released every quarter, around the beginning of the next quarter. But we don't really care since we already have the PMI (released at the beginning of the following month = Greenspan's desert island indicator)

- **Inflation:** erodes the value of bonds + time value of money + rising cost of living. Food = 30% of inflation basket in China v 15% in the US; housing = 40% in the US (depends on the consumption basket). Baskets change with consumption habits (NeTtflix is now part of that…) Source:
- ***=> CPI (Bureau of Labor Statistics | Data input = Basket of G&Ss | Monthly Frequency | Inflation soource = labor departments inflation report)*** **Released around the middle of the following month.**
- **Unemployment**: investors care since people looking for a job cannot invest themselves. In the US: GDP CYOY to see year-over-year GDP growth + non-farm payroll (most relevant indicator of unemployment in the US). / Positive correlation between GDP and unemployment (as measured by non-farm payroll). Non-farm payroll published on the first Friday of the following month.
- **Business Confidence** : Purchasing Manager Index published by Institute of Supply Management. Reading above 50 signifies optimism. Good indicator of GDP growth. PMI Eco indicator always published on the first day of the following month = Jan. Numbers published on the first day of February ("ISM Manufacturing").
- **Housing**: consumers must be confident enough to take on a 30-year mortgage. Comes out around the middle of the following month.

Which is the best <u>leading</u> economic indicator: the goal of leading indicators is to be alerted by forthcoming turning points in real GDP growth. In the great recession in late 2008, PMI fell to its low point and started to recover well in advance of GDP falling to its low point and then rebounding. Leading indicators attract the most investor interest.
Misery index: way to measurer consumer pain. Defined as inflation rate + unemployment rate.

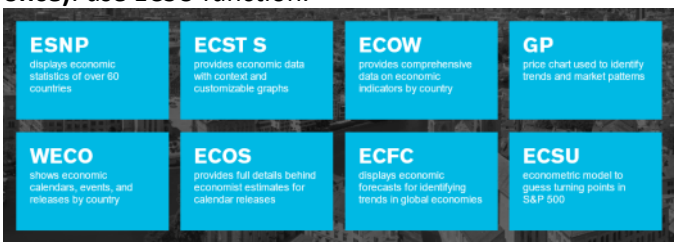
Economic Release Calendar

PMI < Nonfarm Payrolls < Housing Starts < CPI
"*By the time GDP forecast is announced, it tends to be yesterday's news* " - bc PMI is released monthly; and gives a good estimate.

Forecasting GDP

CFTC Function: shows overview of eco indicators per country. Click on a datapoint (either past or forecast) to show consensus, estimates, mid-point; you can graph the estimates (prevision basse v haute v médiane) to see turning points in experts'

opinions.
Use a mosaic to spot turning points (using several indicators at once): use ECSU function.



Currencies

Exchange rates: pegged v floating

Moving fast since drop of the US gold standard (Nixon 71). 5 trillion dollars exchanged each day on the FX market. 15 days of trading = equivalent of the world's GDP (79billion). 85% of the FX volume involves the dollar. Who trades on the FX:

- **Financial investors**: buying/selling securities in FC (45% of the volume driven by banks and instits = "hot money")
- **Corporations**: selling goods & services across borders.
- **Travelers**

Pegged currencies: HK dollar pegged to USD, Danish crown pegged to the euro at 7.46 danish crowns. Check for unpegged Argentinan peso in Jan 2002. In the GP: choose "***inverse market price"*** to see the FC plummet.
FX supply. Central banks raise Irs to maintain pegs: in the run-up to the creation of the euro in 99, raised in Germany + kind of tense in the UK (G.Soros made its fortune from the unpeggment of the £ on Black Wednesday in 1992) when the UK (Chancellor Norman Lamont) failed to maintain its currency peg to the deutschmark and exhausted its currency reserves.
Successful CB defense of a currency peg: 1997 HK CB sold its $ reserves and invested the amount in the HK SE, making a fortune for the gov. Access the chart using WIRA. Note that peg doesn't kill off volatility.
Triangular arbitrage: cannot convert then convert again then convert back and make a profit.

Drivers of exchange rates

The ER only tells us about the dynamics of one currency against another, not the general trend (one currency / all the others) = should rather look at ***"trade weighted baskets***" (computes the value of one currency against its trade-weighted partners').
Checking out trade-weighted USD: peak = strong dollar policy during Reagan's spell (Reaganomics). Theory states the "law of one price" = economists published the Big Mac index in 86 (WBG). 3 main currency drivers:

- **Surprise changes in IR:** rises draw in foreign capital / US dollar per euro dropping when ECB IR
- **Surprise changes in inflation**: printing presses raise inflation = weaken the currency. Compare on GP with inflation (add security…) / Outsourcing to India eventually increased wages and created inflation.
- **Surprise changes in trade**: cf. formula for GDP (C+I+G+ Trade Balance): if net export is positive, people buy HC hence strengthens. Similarly, trade deficit weakens your

currency (by changing the demand). Cf. Russia, 75% of total exports are oil and gas / in 2008 the price of oil decreased by 75%, weakening the ruble. Also happened in 2014/2015.

Switzerland case study: 2011, people were buying CHF as a safe haven against greek crisis = almost reached 1eur (first time). Swiss importers found european goods cheaper to buy - almost imported deflation - and the SNB took the market by surprise by saying that it would not support a swiss franc higher than 0.83eur; pledging to print as much money as necessary = CHF dropped back to 0.88eur. Eventually, the SNB dropped its policy - and on Jan 2015, it announced it would no longer print currency + CHF gained 20% in one day. CEO of Watch commented: "*words failed me*."

Central Banks as currrency guardians

Low inflation good because: protects consumer purchasing power, keeps borrowing costs low and provides a stable backdrop for businesses to invest or hire. Note the ratchet effect: once increases in inflation are psychologically ingrained (/inflation vicious cycle)

Deflation vicious circle: US 30s: price declines - hence consumers defer purchases to await lower prices - hence company revenues decline - hence companies let go of workers to cut costs

Hedging currency risk

Affects investment returns and corporate planning: topix increased, yen weakened in tandem = incitement for US investors to pour money into the Japanese market. Why did this happened: Japan is an exporter, hence as the yen weakened - goods became more attractive to foreign importers.

Tools to assess currency risk:

→ **Historic Volatility of currency pair values**: with FXFM - but based on historical vol / REGARDER HELP.

→ **Analyst forecasts of currency pairs:** FXFC

Gold - Safe haven. Main quality: scarcity, storage costs… Durable perception of value.

Fixed Income

Sets the price of borrowing/lending to govs, businesses, consumers. Interplay: credit worthiness, bond price, YTM, risk-free rates. Deepest and widest market in the world: over 101 trillion worth of bonds trading (2016) > World GDP (equity: $65 trillion total market cap) Why it matters:

→ Use of bonds to finance governments

→ Use of yields to compare bonds

→ Government bond yields as reference points

→ Keeping governments accountable
→ How IR decisions are made
→ Inputs to bond valuation
→ How the yield curve affects govs, businesses, consumers...

Biggest market: $14To US Govies (Sovereign debt) > $8to US Corp bonds = 20% of the world's bond market; explains the dollar centricity. US gov spending as portion of GDP has more than tripled in the past 50Y v Europe trying to reduce (>50% Danish GDP in Gov Spending…) France has run on a deficit since 1972. Last US surplus: 1997-2001 (Clinton years: high tax receipts from dotcom boom & post-cold war peace) - then from 2008 onwards: US gov ran the largest deficit in history, as it propped up the financial system.
On Sept 2008 the debt clock ran out of digit when US debt surpasses $10 trillion.
Foreign owners of gov debt: because most emerging govs accumulated reserves to defend their pegs or scare off speculators. Some have sold their own currency to buy their us government bonds to weaken their own currency. Also: the US prints the world's currency => could pay everybody back by increasing taxes or printing more cash. US gov debt denominated in dollars & USD central to FX market = makes US gov bonds the piggy bank of the world.
Positive correlation between total world FX reserves and amount of US gov bonds held by foreign countries = see WIRAWRLD Index v US Treausury Securities. Hence: reason for domination of US bonds market: large deficit + debt massively bought by foreign investors as safe haven during market turmoil (indicated by VIX - world's fear gauge). Investors bought gov bonds, thereby pushing yields down. Happened during Russian crisis 98 - Dotcom 2002 - Great Crash 2008 - Greek crisis 2010 (downranking credit ratings)
Corporate bonds: greater diversity. Use Company Name > CAPITAL STRUCTURE/DDIS to access amount of outstanding debt, types, … Uses of debt:
→ Debt repayment reduces a company's tax bill by scrapping the pre-tax profit. Cheaper than issuing equity.
→ Banks not keen on making LT loans to corporations.
YTM depends on bond price….Inverse relationship. Yields make all bonds comparable.
Showing the inverse relationship between prices and YTMs: plot yields v yields on perpetual bonds. When yields are high, lenders are cool with it (/ means that you get relatively higher payments…) v new borrowers are not cool with it (the interest payment is too high.)

Bond valuation drivers

Guessing a bond yield: où on essaye certaines valeurs pour des taux coupons & on interpole (cb de tx coupon pour obtenir x en VF…) In Bloomberg: you get the yield directly on YAS. Note: there are plenty of things you don't know (in spreads, yield calculations…) YTM = interest on bank account for the duration of the bond . Bond valuation drivers:

Credit Risk	**<u>Credit Risk Factors</u>** *Borrower defaulting on coupon or principal. The*

	assumption when calculating yield is that repayment is truly fixed (so you don't write off the last coupon payments; but it means that it will be even more discounted than usual/price is going to drop.) Note that the credit worthiness does not affect the calculation of the YTM (so says Bloomberg) = makes FUTURE borrowing more expensive, but does not alter the calculation for already issued bonds. *How does it affect govs: high yields = push a gov into debt, hence govs resent creditors (aka "bond vigilantes") "The bond market intimidates everybody."* **Debt/GDP:** borrowing to invest boosts GDP v repayment inhibits gdp growth. No fixed % of debt at which markets will start to panic. 2011: Greek debt spikes >+100% (and great 10y gov bond yields also spiked at 35%) - Struggled to find buyers and its gov bond auctions. Looking it up for Russia: right click on price > GP then overlay with Russian sovereign 10y yield **Deficit/GDP:** measures to which extent the gov is living beyond its means = relying on the bond market to fill up the deficit. Ultimately, the bond market can refuse to finance the bond market - but again, no strick rule. In greece, hurdle rate spiked at 35% at the end of december 2011 **Aggressiveness of the Repayment Schedule:** depends on creditors' opinion of the possibility and timeliness of the principal/coupon repayments. See DDIS UK: huge repayment coming up at around 2038 - high risk = only available to creditworthy debitors. The US is the opposite: borrows ST and refinance, to take advantage of the lowest ST IR available. Cases where this strategy didn't work out: Asian country 97 + Iceland 2008 + Greece before 2008 (heavily reliant on ST debt; then, after first bailout = postponed repayments till around 2032) = ST debt converted to LT debt. **<u>Credit Risk indicators:</u>** **Credit Ratings:** using company name > CRDR > click on one type to get history. E.g. Enron - moved from **BBB+ to D** within 2 months **CDS:** form of insurance against governments and corporations going bust. Most timely warning of pending default and credit ratings, because they are real-time ratings based on traded instruments. The higher the CDS spread, the higher the risk. E.g. GS/MS spiking in 2008 right after Lehman's default. Can be used to calculate the implied probability of governments or corporations defaulting.
Macro Eco	**ST IR:** rs between US gov bond yields and other bonds yields, where US bonds are deemed much safer. If FED cuts ST IR, then the yield on 10Y gov bonds lowers. If another bond has the same risk profile, then they should have the same yield - hence the price of the other bond will rise (arbitrage) and its yield drop.

	Reciprocally, if the yield on US bond increases**.** **Inflation:** inflation high = higher yields to preserve the value of bonds. Winners: borrowers at fixed rates; lenders during deflation.

Central bankers and IRs

CB mandates:

- **Happy Medium**:
- **Inflation/Deflation:** runaway when output > input =/= lack of economic growth; vicious circle of inflation makes it the prime fear of CBs. CATO Institute estimates there have been 56 bounces of inflation ever recorded /wars (printing press to finance the war effort). Germany : 24380% inflation shortly after WWII, Zimbable 89700MoMoMo% inflation = prices multiplying every hour after 2008. Check inflation measures with CPIYOY (specify country). Oil shock 73 / 75 - bonds terrible investing from 75 to beginning 80s.

WAR	U.S. PRESIDENT	DATES OF U.S. INVOLVEMENT	CUMULATIVE U.S. INFLATION
U.S. Civil War	Lincoln	1861-1865	117%
World War I	Wilson	1917-1918	126%
World War II	Roosevelt	1941-1945	108%

CB Decision making:

- **Inflation measures**: look at GDP DYOY (deflated quarterly GDP report), CPI YOY (monthly CPI), PCE CYOY (favorite inflation gauge of the FED: core personal expenditure - writes off the cost of food & energy /cereal and oil-based products). Caveat: the datasets are historical. Reminder: access inflation forecast (along other economic forecasts) using ECFC function. But the estimates are only periodically updated = miss out on the trend. More exotic instruments to gauge inflation:
    - ***TIPS*** (Treasury Inflation Protected Securities): compensate the lender in case of inflation. Price of Tip lower than Price of Normal bonds = look at the spread/difference in yield to get expected inflation.
- **Output gap**: difference between US potential GDP and US actual GDP. Output gap = (actual - potential)/potential . Major output gap in the wake of 2008 - caused fear of deflation.

Central bank toolkit:

- **ST IR:** if FRED goes up, less investment/consumption, growth obv slows down.
- **Statements**: any statement modifying expectations will move bond yields. /FOMC Sidebyside.
- **ST IR Estimates**: see estimates using FOMC meetings. You can get the IR probability by typing Interest Rate Probability / WIPR.

The yield curve

Using WB > GP. Look for upward climb in bond yields. Difference on yields between long maturity bonds and short maturity bonds

= "term premium" (in pct points: 10Y - 3M yields). Yield curve transmission mechanisms:

- **Corporate Impact:** bc most corporate projects financed with medium/LT borrowing hence ST IR/inflation may rise + pb of credit rating (default risk) = corporate borrowing adds spread to treasury yields. Affects the cost of borrowing, hence the GDP.
- **Consumer Impact:** 30Y mortgages are priced on 10y gov bond yields + rising prices = wealth effect (if housing market goes up, owners feel wealthier and are more likely to consume).
- **Global Impact**: bond yields of big ecos (US, Deu, Fr, UK) are highly correlated; hence the Fed decides and the world follows suit.

Movements in the yield curve

Creditworthiness is a non-issue (since yield adapts to spread) / speculation mostly concerns ST IR & FOMC Announcements.
What matters in the ST: FOMC/ECB announcements
2 key indicators for how the yield curve will move:

→ **WIRP** (World Inflation Rates): for estimates of ST IR (including fed target rate: FDTR for ST IR & overnight IR)

→ **ILBE**: TIPS spread for LT // inflation - less straight forward. Yields on matu 30Y are driven by LT prospects (IR forecasts, GDP growth estimates, demographics, demand for LT borrowing, supply of LT lending, inflation expectations = ILBE is the most imp)

Bond traders make money by second guessing macroeconomic trends and CB moves. Help guess the gradient of the yield curve (steepning or not). 2003 IRAQ war: short end tied to the present v long end = future beliefs.

- **Started with steep:** ST IR were low, inflation started to rise and investors anticipated a rise in IR. Fed share Ben Bernanke raised Irs while LT rates remained stable = made the yield curve flat
- **From flat to inverted**: when ST IR > long term IR = bad omen for the economy (may be bc inflation still too high…)
- **Followed by credit crunch 2007**, 6 months after the inversion of the yield curve

Yield curve inversion as an economic indicator: spot the inversion by looking at the term premium (ILBE) that is <0. Happened 7 times to the US yield curve since 1970s: right before the first Oil Crisis, the Second Oil Crisis, the Early 80s recession, early 90s recession, dotcom bust, great recession. Note that the yield curve inversion of 1998 was the only false positive (out of 7): it was triggered by the Russian default. Takeaways:

- Steep yield curve = booming economy
- Flat yield curve = worsening times
- Inverted: beginning of recession (since bond traders anticipate IR cuts)
- The bond markets keep gov accountable
- Bond yields driven by creditworthiness, inflation, IR
- Central banks guard against both inflation and deflation
- CB influence all borrowing costs via the yield curve…
- Yield curve puts a price tag on this time-value of money.

WCAP displays stock market capitalizations of entire country stock markets around the world	**SRCH** an encyclopedia of bonds	**BUDG** provides data and analytics on the U.S. Federal Budget	**YAS** yields and spreads on government bonds	**DEBT** ownership statistics of sovereign debt for select countries including the U.S.	**GC3D** GC3D displays how a yield curve moves through time
CAST a visualization of issuer capital structure	**DDIS** a visualization of issuer debt repayment schedules	**GY** a historic yield chart for a selected bond	**WB** monitors major sovereign bond yields and spreads	**WCDM** a country debt monitor analyzing the financial condition of countries for debt investors	**WIRP** shows the probability ascribed by the market to future interest rate decisions
RATD credit rating scales and definitions from various debt rating agencies	**CSDR** displays real time credit ratings for sovereign borrowers	**CRPR** displays current and historical credit rankings by issuer from various rating agencies	**SOVR** a monitor of global sovereign Credit Default Swap spreads	**GC** a visualization tool for real-time and historic yield curves	**FXFC** displays foreign exchange rate forecasts
IFMO displays inflation tracking and data such as rates, targets, and forecasts	**GEW** shows key economic statistics by country	**ECFC** displays economic forecasts	**ILBE** shows breakeven inflation rates derived from inflation protected securities	**FOMC** policy decisions, news, and analysis of the Federal Open Market Committee	**BYFC** displays government bond yield estimates for various points in the future

EQUITIES

Introducing the stock market

2nd biggest asset class after FI. Stock market notoriously hard to predict, cf. "stock prices have reached a permanently high plateau" (Irving Fisher) followed by 30% decline on Monday 28th 1929. Luckily, only 2% of americans held shares at that point, compared to 50% today. (Irving Russell: sell stocks one day before stock market crash). 2008 financial crisis: stock market went down 50% over 9 months.

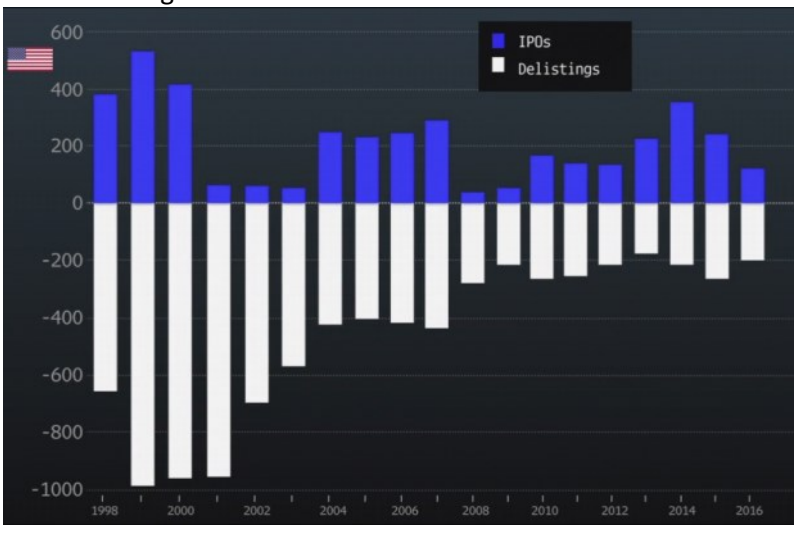
Purpose: allocate fundings over time. Appealing because easy to enter/exit cpy investment + buying entitles you to receive part of earnings of the cpy = pick the right one to make millions.

Charging bull: engrained optimism seen in charging bull near Wall Street.

Comparison to FI: smaller in terms of total value of securities (only 68k listed equities against Mos of bond - function EQS) .

Why so few: Samsung = 1cpy but 17% of South Korea's exports.

IPOs: to raise money, to enable the funders to sell their stakes to the public. See IPOs in "IPO".Note that dozens of IPOs per week but only 68k listed equities: bc companies often delist if they're bought by PE funds, are fed up with regulatory side of public companies, or industries die (/ NYSE delists Kodak after its shares sink below $1) In the US, nb of listed companies has gone down more delisting than IPOs.



Indices: access world major indices with WEI. More equity indices in the world than equities. Note that the revenues of those inside the indices does not necessarily fit its geographical labelling: 30% of revenues of companies in S&P = comes from outside of the US.

3 most common organizing principles of indices:

- Breakdown by cpy size: market cap is the main criterion for acceptance in the S&P 500.
- Breakdown by cpy industry
- Breakdown by cpy country

Weights: market cap of cpy / market cap of index.

To what extent did one value drive the move of an index:

- First, calculate how many index points Apple contributed to the previous index point: index level * index contribution = point contribution of apple (in pts of index)
- Point contribution to index shift: point contrib of apple* (1 +% stock price move) = new points contribution of Apple
- Index move contribution = new points contribution of Apple - oil points contribution. Hence: Apple accounts for 1.46 points move out of the 26 points move of the index on that day.

DIJA share-weighted: the company with the highest share price shown on the screen is GS. Apple has the highest market cap but its share price is far lower than that of GS. Hence: GS weights the most.

The nature of equities

As FI,provides CFs- but this time, CFs = residual CFs. Only point commun: both are claims on CFs.

Effect of borrowing: magnifying income when upside (bc payment is supposedly fixed) but effet massue when downturn (bc mortgage repayment is not cut…). Bref: effet levier v effet massue. In the equities market:

→ **Entitlement:** Bank entitled to fixed repayments from pretax income | Shareholders entitled to what's left after cpy spending, loan repayment, tax. Equities confer full ownerships v bonds = just a contract (IOU note?)

→ **Prospective lenders wonder**: can the cpy pay us back v shareholders = how much money will the cpy earn in the future

→ **Caculation**: Bank calculate the interest cover (how many times over can the cpy pay the loan based on its earnings) v shareholders = residual earnings

→ **Effet of inflation**: loan isn't affected (fixed-income is fixed) v shareholder s want raises to shield them from inflation

→ **Upside**: the bank gets a fixed interest (bondholder gets only the yield /not linked to financial wealth of the cpy) v shareholder = steeper div distrib if earnings rise

→ **Downside**: for the lender, limited downside due to collateral | Shareholders lose everything

World's major FI Index: Bloomberg Barclays aggregate. To gauge how much riskier equities are than bonds, … Compare vol.

Factors to consider when comparing returns:

- **The role of dividends in equity returns:** S&P500 ignore dividends =/= gross total return (assuming dividends are reinvested…) Taking dividends into account, equities did far better than bonds since 95 (whereas comparison yields similar results if no dividends taken into account)
- **The nominal nature of stock and bond returns/submit to the effect of inflation:** always compare the nominal gdp (instead of real gdp) to take into account price inflation.
- **Indices understate volatility:** of equity values

- **Asymmetry of returns**: the most you can get on a bond = yield (single digit annual return) / depends on the final repayment promised + collateral protects you in case of bust. Most you can lose on equity = 100% of your investment; but upside theoretically unlimited.

Equity research

Equity ownership: shareholders own a cpy's residual earnings + net assets (MV - debt). Beginning of Financial Statements = top line. Earnings = Rev - Costs.

- **Showing Income Statement:** company's name > FA (Financial Analysis) > Income Statement (IS). The IS runs from revenues to net income.
- **Show graph of Net Income:** in the IS, click on net income. Note it's much more volatile than revenues - why? Variability of costs
- **Earnings Calendar:** EVTS. Similar to release of economic indicators (monthly or quaterly, both move the markets if the numbers surprise). Note that some companies have earnings announcement that do not fit the calendar year = not part of earnings disclosure season.

Absolute valuation (standalone value of cpy)

How to estimate future company earnings:

- **Industry classification:** structure of earnings/costs specific to the segment. To break down a company's revenue by industry: company's name > company classification browser (CCB). Will display the hierarchy, rev in absolute value and % rev. Show different type
- **Suppliers and buyers:** generate rev forecasts by knowing who are your suppliers (forecast supply chain issues) and who are your clients (forecast demands). Visualise the supply chain: SUPPLY CHAIN (SPLC) > Enter company's name.
- **Revenue projections:** how big is the pie and how big is the company's slice of that pie. To see the global revenue for a particular product: BI > sectors > type of company > data library = pick "industry" then choose your product. Note that clicking on the specific variety of product shows global sales (can compare different varieties)
- **Cost base**: tos how the cost structure: type a product in the gen search bar ("wind turbine") > cost analysis = gives the breakdown in %. Aircrafts sold well because plan tickers sold well because more customers.

Historic Analysis: model the "actuals" to estimate future earnings. Find the actuals in previous statements (ETS/EVENTS > ticker "earnings calls"). Beware: analysts sometimes build models that miss the point (booming stock markets foster sales of vans…).

- To see the consensus revenue estimate = see eestimated NI/Sales… In BI > Sector > Earnings > Estimates.
- To see year on year estimates and plot: EM function
- To see detailed comparison of estimates v actuals:SURP (shows charts + % surprise + pct change in share price). Note that sometimes, positive surprise =/= hike in share price.

- To show a scatterplot of the companies surprising positively v negatively: EA (earnings analysis: price reaction)

Analysts of stocks race to estimate earnings numbers. In NH function, you see all the headlines with the companies which either missed or beat the consensus. When analysts miss turning points in a company's story, % surprise = quite high (difference between consensus and estimates)
Share price mechanics: a rookie mistake is to compare two share prices = company may be doing well but having had a stock split turned its shares into penny stocks. Doesn't mean they're a bargain.

- **Find the stocks that will do reverse-stock splits:** type "REVERSE STOCK SPLIT" if sb wants to know which share will go up tomorrow (or STOCK SPLIT - if sb asks you about which share to short, then mention a stock split share)

What is the fair market value of a company?

AbsolutSPX Indexe valuation: when an analyst estimates future earnings and then, how much those are worth in today's money.

→ **Pros**: precise / anchoreed to earnings/ disciplined thought process.
→ **Cons**: demands preovoyance / laborious / prone to subtle manipulation

5 steps of absolute valuation process

1. **Understand historic performance to estimate LT future CFs**. Hardest part of the process = hypotheses about the future.
2. **Estimate discount rate (WACC):** to discount your FCFs. US gov bond yields set the basis for the discount rate for investors (but risk-free). Display Bloomberg's suggested WACC: company's name > WACC. To arrive at the estimate: breakdown of the company's capital between equity and debt (see pie chart) - then use the avg cost of debt / avg cost of equity (hurdle rate) = gives the WACC. Uses stock's volatility as a proxy for riskiness. Estimating cost of equity: check WB (world bond) > risk free rate in a certain country > calculate market premium with Country Risk Premium (CRP) for historical returns of gen stock markets > then compute the market's beta - scatterplot and regression between market & company's (beta = slope of the best fit line) = asset name > BETA > choose benchmark to run the reg against. WACC: rf + adjusted beta * market premium. Bloomberg continually updates the inputs for the wacc calculation = take 10 bond yield from WB screen then adjusted beta from BETA screen. On WACC: see the change in WACC over time.
3. **Take estimated FCFs** > discount using WACC (weighted avg cost of capital) > calculate the value of these cash flows + add current cash & equivalents > remove total debt. Hence: you need to deduct the firm's indebtedness and add the firm's cash pile to derive market cap.
4. **Divide estimated market cap by nb of shares to give estimated fair share price from the valuation**
5. **Deduct the firm's indebtedness and add the firm's cash to**

derive market cap

Observations: absolute valuation doesn't forecast the future (nobody at Google saw the phone industry coming). Also: no company can grow faster than the nominal GDP growth in the LT or it would subsume the economy. Nominal GDP growth = 5% avg over the last 70 years v WACC = 8%. Hence: wacc> nominal gdp growth = in the LT, companies are all dead.
Enterprise value = market cap - cash + debt. / Going up with debt. Enterprises massively indebted are of the reasons that equity more volatile than bonds.
Factors affecting wacc: stock market (market premium), indebtedness (bonds market, risk free rate), beta (perf against stock market), commodities (inputs of the cpy), market val of the share itself.

Relative valuation

Comparing a company to the rest of the sector: undervalued, overvalued or fairly valued.

Step 1 CHOOSE THE METRICS	Div Yield - P/E
Step 2 APPLY	To self - peers - market

Div Yields: div payments vary much more than coupons - but div yields are much easier to compute than bond yields (because we only use 1Y or half Y divs as a basis for calculation). Div yields: big div payments doesn't make up for big yield (depends on nb of shares…). Calculations:

- **Div yield**: div per share / price per share. Display div yields: company's name > DVD
- **Earnings yield:** EPS / price per share. Earnings yield aways higher than div yield, bc estimated earnings per share is higher than dividend per share (some part is obv retained by the cpy for reinvestment)
- **P/E ratio**: price per share/EPS (19.3 = '19.3x' format). As P/E ratios are usually greater than 1, then they are referred to as "P/E multiple". Also works as market cap/earnings. Use of P/E ratios: estimated earnings * P/E ratio = market cap. Hence: estimated earnings (or published net income) drive market cap; P/E ratio drives share price.

Applying relative valuation to the company: check P/E ratio over time = check P/E BANDS in the command line > the white line is the share price, top line = where share price would have been if the P/E ratio had remained constant over time. Then you can say = ok P/E was above 18x at the beginning, above 19x at the end…
To have an idea of the relation P/E / shareprice / earnings.
One good GP to do: P/E v earnings v share price.
Comparing a company with peer groups: compare your P/E to peers' P/E. The only difficult thing is to pick the proper companies to compare the P/E with: choose same region/sector. But good luck comparing rolls royce & P/E ratios. Also: sometimes best commercial peers are privately owned = cannot use market cap.
To compare companies' P/E : company's name > RELATIVE VALUATION > display consensus earnings estimates ("cons table") displaying P/E ratio and best EPS YoY, for your company then all

the peers.
Display relative valuation on a chart: company's name > RVC (relative valuation correlation). Size of the bubble relative to size of the multiple.
Comparing a company's P/E to the market: WEI > tick "ratios" . Beware: a P/E ratio can remain above or under market's P/E for extended periods of time. Computation of market P/E v stock's:

- **Stocks**: share price = NI * P/EPS
- **Index aggregate market cap for all index members** = total net income for all index members * aggregate market cap for all index members / total net income

Observations: P/E ratio of S&P peaked during dotcom and reached low in 2011. What happened: the earnings fluctuated far more than the P/E ratio, market cap also. Rapport remained kind-of stable. Turns in earnings trend precede turns in the stock market (this is why bankers are so fascinated with the earnings season). Whole process: economic indicators > real gpd growth > corporate earnings > equities.
Sharer price = EPS + earnings yields.
Which company to choose: portfolio managers are typically hunting for a bargain. While high sales growth is attractive, it will be weighted against the reasonableness of the multiple being paid for the shares. Buying a rapidly growing ccy for a low multiple is the goal. (And Chubb has one of the lowest multiples of its peer groups = it's growing more rapidly and on a lower multiple than the other three options.)

→ **Pros**: Relatable / Simple /Does not demand LT forecasts: typically one year
→ **Cons**: directional / hard to find truly comparable cpies / presupposes that the company you are comparing it to is itself fairly valued

In a nutshell: vol of equity = from earnings & indebtedness + absolute valuation is theoretically perfect but has practical limitations.

EQS an encyclopedia of all the equities listed on world stock markets	**MEMB** shows the constituents of an index along with key data points on each member	**DES** shows a tearsheet and factbook for a company	**EM** shows actuals and estimates for a chosen equity	**WACC** shows the weighted average cost of capital	**GF** enables the graphing of financial data for a company or index
IPO monitors equity offerings by stage, region, industry, and other criteria	**TRA** shows index returns including reinvested dividends	**CCB** breaks down a company's revenue along industry lines	**SURP** shows the impact of surprise announcements on a stock's performance by comparing historical announcements for the stock against consensus estimates	**CRP** provides the current and historical risk premiums for individual countries and regions	**NI** displays news stories on a specific topic
GIP shows price trends during one or several trading days	**MRR** shows the best and worst performers in a given index over a given period	**ICS** shows companies by industry including revenue estimates	**EA** provides an overview for earnings season performance for a specific index or industry	**BETA** applies a regression analysis to an equity against its benchmark to assess relative volatility	**PEBD** overlays a share price onto P/E ranges
WEI world equity index monitor	**FA** provides historic financial statements and select future estimates for an equity or an index	**SPLC** quantifies the key suppliers, customers and competitors of a company	**EVT** displays a calendar of corporate events for a single security	**EV** depicts the breakdown of a firm value into its component parts	**RV** provides a table of comparable valuation metrics for peer group companies
SECF a search tool that enables the discovery of securities by certain criteria	**EVTS** displays a calendar of corporate happenings for a group of securities, such as an index	**BI** provides analysis and data on a series of tailored industry dashboards	**EEG** shows charts of the evolution of estimates over time	**DVD** shows the historic dividend payments for a company	**RVC** generates a bubble chart of valuation measures for a set of peer group companies

Getting started on the terminal

- With each subscription, you automatically get a new email address (lschulcz@bloomberg.net in my case)
- Each panel have toolbars, command line, function areas. 4 panels to run different functions at once.
- In a security's menu: click on the white house to get back to gen menu (breakdown of all asset classes)
- Help: there's a search bar where you can type your questions / then there's faq.Note that on a particular

screen: press help, then look at description of the columns (often provided)

GMM (Global Macro Movers)**: shows biggest moves in certain countries, synthetize the perf of the market with little squares & key values. Broadest view you could get. Right click on one country to display particular types of
COUN (Country Guide): show for one country the top assets, economic releases, GP of equity market or main stock market. You can also access the yield curve from that same screen + it will automatically display the key tenors (3M, 1Y, 2Y, … 30Y) for a single curve + right hand side shows the curves that are plotted (source of base curve, possibility to add a security…) . By default, we see the yield for the current day. To see how it changed over time = change the dates (2 curves will display: start & end).
Bottom: graph with difference between the curves = click on one then add the dates to see how the change happened over a certain period.
To see the net change: click "annotate" tool to see the pct change on the graph.
On WB: click on several graphs (little icons) to display several curves for BAS (one per country). Then click on the "track" tool to display y axis for peaks…
To check for news: type in command bar "news for italy for May 29 2015" = will get you the news on that date directly.
ECOS: to see how far the economists' estimates are from actuals. The world "generic" in a bond shows basic treasuries.
GIY (Intraday yield chart): use the track tool and click on the location on the curves that you want to compare.
To see the last bond auction for a country : ECO + Country Name, then change the field from eco release to "gov auctions". Shows the yield that the gov committed to pay during the bond auction.
BI (Bloomberg intelligence): then choose economics in the topics on the left = see all maj analyst opinions, shows the key macro themes affecting a country. The full list is sorted by region.

Exploring the equity market

- Stock screening: EQS > Add criteria (for instance: top 10 cpies by market cap, RoE > 10% etc). Don't forget to change the currency
- To see definition of the column: pass on it with your mouse or right click > show definition.
- GP: don't forget you can add flags on the curve to see events (last div announcements…)
- Relative Valuation: show a company's competitors' P/E . High P/E = stock is expensive… Note that left hand side = see the segments in which the cpy operate and where BB provides intelligence + right hand side = different metrics (R&D, Sales, Est P/E…)
- EQRV (equity relative valuation): to analyse a company's stand alone performance or against others = analysis of P/E , historical evo, historical premium range against comps mean etc). EQRV helps decide if a stock is fairly priced by calculating an implied price based on historical multiples ("implied price derived from blended P/E…). To be compared with current price.
- Company's profile (CP) > Analyst ratings (AR): Price spread =

12M target price - last PX + see analyst predictions by bank (gs, ms, jefferies, macquarie, nomura…)
- TECH: centralizes access to all type of indicators. Click on one indicator to get the short description - followed by link to extra documentation…
- Basic backtesting (BTST): shows for basic strategies (like buy & hold) what the indicators would have been (max dd, sharpe etc)
- More exhaustive backtesting (Backtesting & Optimization): make your own strategy and try to optimize on certain indicators (ex: EMAvg) = show what would have been the best combination of assets to maximize the metrics over a chosen period - useful if you believe that history repeats itself.
- COMP (Comparative returns) = compare returns for stocks over a certain period (perice change, tot return, diff, annual eq…)
- Excel templates (XLTP): will update when you change the ticker or period… Is directly connected to bb api. The maj of the data can be downloaded into Excel.
- More info on BB Api: DAPI (Desktop API) then watch tutorials.

Discovering the Fixed Income market

Other Foreign Currency Bonds in Asia

		Domicile of issuance	Type of issuers	Denominating currency	Issuance volume in 2017	Total issuance volume from 2015 to 2017
Kungfu	An offshore USD-denominated bond issued by Chinese financial institutions and corporations		Chinese companies	USD	USD 224.1 bn	USD 443.4 bn
Dim Sum	A Chinese renminbi-denominated bond issued in offshore China markets		Chinese and foreign companies, MNCs	RMB	USD 6.4 bn	USD 38.9 bn
Panda	A Chinese renminbi-denominated bond issued by a non-Chinese entity in the People's Republic of China market		Foreign issuer	RMB	USD 9.7 bn	USD 28.5 bn
Samurai	A yen-denominated debt instrument traded in the Japanese domestic market but issued by a non-Japanese entity		Non-Japanese corporates	JPY	USD 12.4 bn	USD 40.9 bn
Kimchi	A non-won denominated bond issued in the South Korean market		Foreign or domestic issuers	Non-KRW	USD 46.8 bn	USD 137.2 bn

- Compare yields & duration of a particular type of bonds to treasuries: SRCH + Categ > Show result > Bon dchart > Add a curve. You can also group by ratings (amber field "group by" and then customize the group (from AAA to BBB for instance). Use legend to move the legend, use annotate to get the dif between two curves (two types of ratings = 'yield pick-up' from investing in riskier bonds)
- FIW (fixed income worksheet): major table showing all types of bonds within a certain category, filters, avg, low, high, spread, price ranges….
- BVAL: bloomberg valuation tool - prices 2.5Mo of securities on a daily basis.
- CAST: capital structure between equity & bonds
- DDIS : debt distribution = bond principal v LT loan outstanding…
- AGGD (aggregated debt): find the biggest debtholders of a company (Vanguard, Allianz…), nb of bonds held, % out, latest chg etc.
- DRSK (Bloomberg Default Risk): display 1Y default risk & prob, evo of default risk over time (plotted against share price), change he inputs of the model etc. Click on default risk for description.

- RVRD (Relative Value Ranking): comparison of debt ratios, ebitda, LT debt, net debt, LT debt… At company level then against peers (you can customize the peers in the amber field). Trace reporting: the member must report the purchase within 15 min after the trade.
- Notation: COMPANY'S NAME / COUPON / MATU
- Find how the spread of a bond has changed over a past period: YAS (Yield & Spread analysis).
- YAS: bond pricing, hedging parameters, yield calculations (using different compounding calculations…). In the graph tabs = you can change amber fields (ask YTM, G Spread etc)
- LQA (Liquidity Assessment): liquidity score = represents a security's centile rank (100 = most liquid). If bond is liquid, then you should have different providers on bbg. To check for brokers: LQA > Related Functions Menu (toolbar) > click on "FI Price Discovery" (FIPX)
- FIPX (Fi price discovery): gives us the pricing data we need to price a bond quickly to evaluate a potential trade or determine a mark to market = aggregates data from msg, all quotes (dealers' offers), bb valuation (BVAL), trade history… The green dots show the best bid/ask. Inverted market: ask < bid. Size of balls show volume.
- ALLQUOTES: monitor current market data for FI price / spread / yield / liquidity… That's where you can submit your requests for quotes on MTF (try it will ALLQ DEMO: then you can buy/sell) and then, you get a receipt of a trade ("confirmation for trade from BB MTF")
- FASC: Fixed Income Scenario Analysis function = how wouldd the price of a bond change if the FOMC decided of a rise by 50bps?

Building an Equity Portfolio
- IP: comprehensive investor profile for an institution = analyze a company's holdings for the past 5 years
- Access general portfolio mt menu: PORTFOLIO
- PRTU: create a portfolio. How to: click on "create" then name + a sset class + calculation profile + default port view… Push the "help" button anytime to access PRTU weight. Drag & drop stocks from another window to build the portfolio quickly. Then
- PORT: analyze the portfolio

ADDITIONAL DATA & REQUESTS

→ Trouver les événements marquants dans GP

On GP: click on "News Flags" ou Paramètres > Add > Events > Choose type of events.

→ Demander accès à hf/ où voir les components

USER > Change profile > Choose "funds manager"
Pour voir les subscriptions real-time data auxquelles on a accès: EIS
Trouver les news sur hfs: News frontpage > FIRS > "Hedge Funds"

→ Voir le trade blotter/extraire le open interest sur des

futures sur indices

Pour les aggrégations, il faut sortir les données sur Excel via une BQL query (see screenshot below). Pour avoir accès aux tutoriels: BQLX > Resources > Select tutorial. Otherwise: Futures via CTM > filter on indices equity > filter by futures type > retrieve data with BQL. You can also use BQL Builder (Excel) to build your query.

L	M	N	O	P	Q	R	S
get(dropNA(rolling(sum(group(open_int)), iterationdates=range(-1M,0D)))) for(futures('SPX Index'))							
	IdentityGroup						
DATES	dropNA(rolling(sum(group(open_int)),iterationdates=range(-1M,0D)))						
29/07/2019	2671473						
30/07/2019	2671699						
31/07/2019	2645065						
01/08/2019	2676569						
02/08/2019	2634059						
05/08/2019	2643148						
06/08/2019	2630990						
07/08/2019	2602658						
08/08/2019	2586163						
09/08/2019	2566411						
12/08/2019	2573208						
13/08/2019	2585290						
14/08/2019	2605485						
15/08/2019	2630229						
16/08/2019	2583638						
19/08/2019	2578982						
20/08/2019	2608140						
21/08/2019	2622741						
22/08/2019	2615000						
23/08/2019	2629765						
26/08/2019	2649907						
27/08/2019	2634645						
28/08/2019	2634645						

Loading back the aggregated data into Bloomberg: CIX creates your own indices + upload data onto the terminal + creates a temporary ticker (if you want to plot the index right away or access it through the toolbar). You can use the temporary ticker on BQNT.

→ Voir les séminaires auxquels on peut être inscrit

SMNR

→ Help on how to import bloomberg data to BQNT

BQNT > New Project > Help > MyBQL/bqviz / bqplot

→ Get trades minute by minute & show BAS spread

Select security > QR (trade by trade data) or GIT or GIP (plotting trade by trade). You can choose charts or candlesticks. Change frequency of data using "Daily" > 1min.

→ Sentiment Analysis

GT for Twitter // shows positive or negative sentiment + volume
Social Monitor (on launchpad)
NT: sentiment analysis based on global news (uses all data sources loaded onto Bloomberg). How to show sentiment analysis for one newsfeed against another: NRC changes news sources. Reddit isn't available.

→ Plotting liquidity shocks with a super cool chart

CIX > New Index > Create Study > create the formula (bid - ask). ATTENTION: each line ends with ;. If you want to add a parameter

that you can customize later (for instance: show moving avg or no) = in parameters, add > name param > use it in the code > make sure that output variable has the right name > save the study. Then, you can add this new variable onto basic GP charts in parameters > add study > choose the study name. To type the code: built-in variables are accessible directly (see syntax help), otherwise you need to load more data into Bloomberg first.

→ Saving a template chart

GP > add parameters you want > actions > save. Then you can access that kind of chart for every possible security, by typing the chart name in the main bar. You can also share that with the community (CMTY).

→ Create a community: CMTY

CMTY > Choose team name > add people in your team. Then, you can export any chart or study to that community. Works for charts, sending messages, export automatically to Excel.

Thomson Reuters Eikon

lundi 12 août 2019
10:09

About Eikon: news, analytics, trading, collaboration tools, access to real-time and historical price data, up-to-the-minute nes commentary, broker research on all the companies worldwide (company's name > research > download) + coverage of estimates available + charting & predictive analytics. Combine contents to create powerful workspaces + tracking tools + newsapps + viz apps + calculators + analytical tools.
You can drag and drop charts into microsoft excel and your emails.
Eikon for Microsoft office: retrieve data (but drag & drop is better).
Workspaces: similar to a launchpad, you can create your own customized workspace or load a new one attached to your role. Reuters use your profile to define the contents that display. You can switch between workspacesE
Toolbar: can be undocked and resized.
The "me" icon gives access to my files, my briefcase and settings.
Eikon menu: add apps to "my apps" and drag & drop to reorganize. There's an app library that offer different ways of visualizing data.
Toolbar: type a keyword, name or question to find data & tools.

ANS: answer tool / rest of the tools have their asset class attached (FX for ex)

COMMANDS

Saving your workspace	Right clic on "workspace" (ma page d'accueil) > save
Download research about a company	Company's name > research > download
Real-time price data for the most active instruments	In the toolbar.
Find previously saved articles	"Me" icon (toolbar) > my briefcase
Display two lines on the same chart	Type "company name 1 company name 2 in [chosen currency]"
Opening apps	With the menu or the search box (type "vodafone news" then click on news component or chart…)
Display components of an index	Menu > Monitoring > Monitor > Type index name > Click on the right hand side arrow to show components > go back to menu and choose chart from charting menu > then click and it displays automatically.
Linking/unlinking monitor & graphs	Click on the link icon (top left hand corner) then choose the color and match them to that of another app.
Show FAQ	FAQ in command line
Online customer support	Via customer support - Thomson will answer within an hour
News monitor	Column based design to find key info / access via menu (news & research > news monitor)
Boolean searches	Using "AND", "NOT" and "OR". Headlines in red are breaking stories, which means the full story will be available in a few minutes. The newest stories are easy to identify since all appear on the top raw with the red background.
See Reuters Newsletter	Menu > News and Research > News Monitor > "The Day Ahead"

See Reuters summits	Menu > News and Research > News Monitor > "Reuters summits"
See Reuters special reports	Menu > News & Research > News Monitor > Special Reports
Reuters Insiders	Access live and on-demand programs, created specifically for institutional businesses from Reuters and leading providers in the Insers network.
Global Press / Historical News / Periodicals	News > Global Press > Access to 10Y of periodical data
Access general news	In news monitor (NEWS) > Global Financial. Otherwise, default to the last instrument you've seen.
Search news instrument	Type the instrument code (###.O) in the news search bar. Note that the news search bar should suggest news wire sources .
Choose between searching in the headlines and the story text	Click filter icon > then click "headline & story text"
Good sources	Seeking alpha, motley four, Korea herald…

Réplication Synthetique

vendredi 16 août 2019
10:41

Chez BNP index/ESG c'est unfunded only. - c'est historique.
L'équipe de structuration fait du funded si c'est sur des indices propriétaires… Unfunded: 100k on les garde et on est forcé de les investir. Sachant qu'on doit payer money market sur l'index, c'est bon de recevoir un taux money market qqlq part.
Funded: funded @100k = on file 100k à la contrepartie qui lui permet de se hedger
Qui est la contrepartie: préfèrent faire du **back to back** càd le panier va être lié au swap (réduit le cout de swap). Les contreparties veulent pas qu'on dise officiellement qu'on achète les actions - donc svt les contreparties vendent leurs actions (pour panier de ref) à un broker, qui les revend ensuite à BNPP. Donc dans le système on traite face à un broker.
JP Morgan: tu traites ds le marché (ils veulent pas savoir avec qui on fait les paniers de ref) = t'achètes les actions sur le marché. Mais du coup, il y a un risque d'exécution pour BNPP (et ça leur plaît pas).
Ds les faits: la table traite sous certaines conditions (on définit un univers d'investissement et on dit ok panier de ref) Et JP rembourse les frais d'exec/de trading. A une époque, JP remboursait 3bps (et BNP se faisait une marge sur l'exec).
Notons que même ds la termsheet de swap, les actions sont listées mais pas liées légalement au swap (càd on dira jamais sur la termsheet qu'on va acheter les actions à la contrepartie…)
Qd la souscription est très petite, qd c'est sous certains status français, on a des règles type 75% du fonds doit être investi ds des actions PEA. Hence l'equity swap nous permet d'investir ds un panier d'assets PEAable (pour que l'etf soit logeable ds le contrat).
Tout le cash doit être investi? Max 10% de cash gardé ds le fonds, 10% de plus ds des OPCVMs type money market funds = 20% max ds le money market. Donc non, on n'est pas obligé de tout investir.
Sur certains sujets, BNP poste du collat: parce que tout le trading se fait sur le close - donc à des prix qu'on connaît pas; et si on prend position sur un truc qu'on connaît pas et qui baisse = on poste du collat.
Si t'as 1% de souscription en plus, tu vas augmenter le nominal de ton swap (mais tu peux garder du cash). Si t'as des rachats, tu diminues la taille de ton equity swap.
Donc bref, on couvre mais ils gardent une marge de cash au cas où.
Futures: oui on en achète, pcq quand t'as une toute petite souscription ça permet de traiter qd même la commande sans faire bouger le swap. C'est équivalent à acheter un ETF de concurrent - hence ils gardent ça <1%

- **FX spot - ça sert à quoi** - sur fonds gérés en physique: est-ce qu'on a un sous-jacent européen = sous en euro mais doivent investir ds des actions européennes avec GBP, CHF… Hence font un fix spot 1Mo GBP, … Aussi ils auront l'impact FX sur les parts hedgées, pas hedgées…. Ont quelques fonds dollars & ds le SJ du dollar, de l'euro…
- **Tu valorises en linéaire**: tu incrémentes jour par jour selon les taux FX = ton linéaire va de ton prix d'achat vers 100 ts les jours = permet de pas avoir de TE dans la valo. S'il y a des trucs supérieurs à 3 mois, la politique de pricing c'est les mvts de taux, hence la valo du fonds bouge en cas d'IR change, hence sur de l'ETF ça ne passe pas… On pourrait évaluer en linéaire sur plus de temps… [i didn't get this point]
- **Funding swap**: matu 1 an par défaut mais avec un restrike tous les trimestres (tous les 3 mois tu remets ton taux à 0 et tu reregardes l'euribor sur 3 mois à venir)
- **Qui poste le collateral**: dépend du sens ds lequel part le swap (soit la contrepartie soit nous). Collateral posté tous les jours. Y'a des gens qui restrikent leurs swaps tous les jours - hence pas de collat. BNPP dit que y'a pas de risque de contrepartie parce que y'a du collat… Restrike ts les jours c'est juste trop lourd opérationnellement.
- **Initiation d'ordre**: c'est fait par mail (bonne swap ref, c/c du mail de la veille etc)
- Ds la terminologie française, frais de gestion = frais de gestion + frais de dépositaire/custody + transaction etc
- Les rolls de futures/ hedging impactent directement la perf du fonds
- Sur le FX, tu ne peux pas traiter le close - tu vas avoir un écart qui créent un écart de tracking; c'est

pas ds les frais qu'on paye mais ds la façon dont on réplique au mieux l'indice

- T'as des indices où la perf est plus performante que l'indice // fiscalité sur les divs qui permet de surperformer. Pourquoi: pcq la plupart des indices traités ici sont net total return = t'enlèves les taxes. En Fr, taxes sur les divs = 30%... Hence l'index provider applique une taxation std alors que nous on paye pas forcément les taxes…
- Gross total return = on peut pas bien répliquer pcq par défaut on a des frais de taxation qui vont affecter la performance - on va systématiquement sous performer… Mais bon, si tt le monde fait ça,on va faire ça aussi...
- Lux: pcq hub européen
- TD/TE = c'est un tradeoff
- Ts les jours ds leur travail, ils valident la VL, retranchent les cts qu'ils connaissent (frais de gestion sur une journée; exposition/si on est mal exposé on va un peu dévier etc)
- VL/Vlveille - Indice today/Indice yesterday = on voit si on a surperf ou pas…
- Sur les ETFs sont à 1bp d'écart sur chaque ligne
- Sur un fonds tracker, la TE c'est 1bp de TE par an…
- Les sous -rach = peut avoir un impact sur la TE puisqu'il vaut ajuster l'AN mais ça aura pas vraiment
- **Stratified sampling**: tu prends une matrice qui te permet d'avoir moins de titres (mais tu tries par buckets de duration, expo pays, region…) Ds chaque case tu choppes quelques titres…
- **La contrepartie réplique pas forcément en physique derrière,** peut utiliser des futures etc. le risque d'exécution & de réplication est chez elle. / Index swap
- En collatéral: tu mets la valorisation quotidienne du swap (pas le nominal)… Makes sense vu que t'as pas donné le nominal. Est-ce que le collatéral a un impact sur la valo du swap? Non, juste sur le margining. On note que ce qu'on poste en collat = dépend de la valorisation en J-1… Donc y'a tjrs un décalage mais on vit avec.
- Note that le Tbill est supérieur à l'euribor hence des fois on a trop de cash. Autre option : swap PEA.
- Sur un back2back = tu échanges la perf d'un panier d'actions contre la perf d'un indice. Le panier d'actions n'a pas forcément de lien avec l'indice…
- 75% du fonds en actions PEAbles
- On veut pas faire de la surperf - c pour ça qu'on file la perf de notre panier d'actions PEA
- **Plus que la contrepartie a des clients type HFs**, plus elles ont des actions en inventaire, hence plus elles font de la répli synthétique (comme ça elles vendent leurs actions & elles rémunèrent pour ça - vu qu'elles payent truc + spread)
- **Ds les swaps que tu fais en synthétique,** t'as une taille max qui est def qd on fait l'appel d'offres au début
- **Gardent tjrs 5% de cash**
- **Patte fixe** = c'est la différence entre la perf de l'indice & la perf du panier de ref; sauf qu'on connaît pas la perf de l'indice à l'avance…

Trading

mardi 3 septembre 2019
10:53

- Hit Rate is a measurement of the ratio between the number of winning stock ideas vs. the number of losing ideas over a given period divided by the total number of stock ideas pursued.
- The win/loss ratio is the ratio of the total number of winning trades to the number of losing trades.
- Nominal shown: nominal value of orders that were sent to market (but not necessarily executed)
- Hit ratio ticket: exec + sorted by ticket across biggest tickets
- Hit ratio nominal: exec + sorted by nominal across total nominal

Types of orders

NAV Guaranteed	@NAV (once all the constituants have stoppped trading)
Care	Directs the broker to manage the exec manually = parks the order temporarily, givingg the broker an opportunity to review it before exec. Use: in-house matching of orders (if permissible) = internal cross-validation with another customer's account. Other use: in case of size limit = for the biggest orders, the broker is asked to review whether the order should be submitted or not. Voir le doc 'post-trade' - Il y a des règles de place - Sur les FCPE il peut y avoir des orders à 100Mo - Chez BNP: parti pris de traiter pas plus de 30% de l'ADV (avg daily volume) / mais ça dépend de si t'aassèches la liquidité ou pas
Market	Usual
Close target	@Close or closest possible =/= Close guaranteed = plus cher l'ordre, mais c vraiment guaranti
TWAP target	**Time-Weighted Average Price :** trading algorithm based on weighted avg price to execute big orders without excessive impact on the market price. May be easy to guess trading pattern of the running strategy if its orders are not modified in a special way, so parameters can be adjusted to make strategy harder to track. The most common solutions are randomizing orders' size and/or delay time between them. It is possible to limit quantity to not exceed a defined percent of volume particip, to miniamlize strategies' impact on the market. (https://empirica.io/strategies-catalog/twap)
Limit or better	Usual
Open target	Target l'open
Cross orders	an order in a stock exchange to buy matched with an order to sell at the same price so that execution on the open market is unnecessary
Sell & Buy	Immediate sell & immediate buy of smth else?
VWAP	Volume-weighted avg price: https://tradingsim.com/blog/vwap-indicator/
Primary Place	Pegged to primary: https://www.interactivebrokers.eu/fr/?f=613

Calendars

vendredi 6 septembre 2019
14:07

Règles:

- **Jusqu'à 10% = vert clair (risk trade) puis no order (vert foncé) v closed (domiciliation ou 100%)**

- **0 / 10 % / 100% ou indice qui ne publie pa s**

- **Si le Lux est fermé**, tous les fonds lux sont fermés. Les dates de fermeture du Lux sont dispo dans ETF Funds Holidays (typiquement 25 dec)
- **FERMER LES FONDS <u>PEA</u>** LE 26 et le 31
- **Si demi-journée fériée,** tous les fonds européens sont fermés.
- **Regarder si les fonds d'une même zone géographique** sont tous fermés en même temps.
- **CDR dans Bloom:** donne la holidays list par zone géographique et les trading info = No trading/partial trading. Partial aux US: si ça ferme à 20h au lieu de 22h. Regarder partial en Europe.
- **Vérifier que tous les fonds sont updatés**
- **Vérifier dans les fichiers générés que les poids sont corrects** (par rapport au fichier de base)
- **Dans l'onglet ETF holidays BKGN** = la liste de tous les fonds, à toutes les dates du mois, lorsqu'il sont partiellement closed = donne les poids du partiellement closed. Trier par date (ascendante). Par contre il y a des doublons partout….
- Par ex sur S&P = y'a pas le calendrier sur Bloom - et sur les calendriers type US y'a une date en plus (type: 1e novembre 2019) US sept 2 + thanksgiving nov 28 + christmas / boxing day le 26
- Si demi-jour fermé = le fonds européen est fermé. [Ex]Le 24 et le 31 sur Euronext = half day open (CAC40)
- Sur stoxx en Fr/Lux: ni le 24 ni le 31
- Est-ce que un truc genre circular economy leaders c auto PEA + tous les smart betas
- Vert clair pour les half dayz - les PEA sont vert clair (quasi tout est fermé)
- **En fr: pas de vert clair (soit blanc soit vert foncé)** & du coup les PEA sont fermés le 31 / voir le propectus & c'est la règle la plus imp (priorité)
- No trading sur CDR + choisir NYSE
- Solactive =demander à Charles le contact - on peut avoir le fonds qui est fermé mais le sj ne l'est pas (bc jour férié en France)
- En France, si t'as > 10% du sj fermé et on a pas le cas no orders
- Si 100% du marché est fermé on passe en no nav pcq personne n enous fait de prix + l'indice ne publie pas

_
Domiciliation (pas places de cotation - je suis Paul là-dessus)
Trading du sous-jacent: world, emerging, ex d'un fonds europe (on prends les plus diversifisés) - donc c'est plutôt Paul qui vérifie (via échantillonage)
Changement d'indice: pas les bons benchs/compositions + pays de domiciliation.

Indice euro = etz (stoxx europe 600)
Indan = s&p
Qd Charles ne sera plus là: lookup le code sur accounting viewer (pas en local) puis double clic colonne de gauche pour loader le npval & regarder quel est le SJ sur les feeders.

- Perpetuel c'est jamais vraiment perpétuel; t'as des calls emetteurs (est-ce que c'est variable, fixe)
- Fixed-to-float: t'as une date sur le calendrier où on te dit qd ça passe en float

Valuation:
- AMLU.NAVCALENDAR@bnpparibas.com
- BP2S OPCVM REFERENTIEL, PARIS BP2S AFS ADF BNPP IP MFFA TEAM A
- + team c
- Virer aurelie et mettre PARIS_BP2S_OPCVM_CLIENTS@bnpparibas.com à la place

- *Pays d'enregistrement =/= domiciliation (pays où on est capable de distribuer les produits mais pas forcément les pays où les ETFs sont côtés (hence on a de la registration netherlands alors qu'on côte juste à euronext)*
- *A l'étranger: t'as besoin d'un dépositaire pour t'acheter de la devise si y'a contrôle des capitaux + pour le hedge c encore plus reloux (t'as besoin de NDF = non-deliverable forward) + pays du Golfe c fermé jeudi vendredi + pas les mêmes horaires… Sinon faut de l'ISDA et des trucs super lourds opérationnellement.*

DELISTING
- *Qd on clot un fonds = il arrête d'être traité ausecondaire, puis tu laisses 1j aux MMs pour vérifier qu'ils ont plus de pose non souhaitée puis tu liquides. Pour la liquidatio, payent 2-3 bps; 20 bps pour les swaps emerging; sur du physique c'est plus cher & il faut arriver à totu vendre le jour j (sinon on décale la NAV de clôture)*

SALES MEETING DOMANI

- Debrief passages en S-Series : perf + docs à transmettre (sur les 5 fonds) + changement region/pays/secteur

  Les indices en question
  MSCI Emerging SRI S-Series 5% Capped Index:
  MSCI EMU SRI S-Series 5% Capped Index:
  MSCI Europe SRI S-Series 5% Capped Index:
  MSCI Japan SRI S-Series 5% Capped Index:
  MSCI USA SRI S-Series 5% Capped Index:
  MSCI World SRI S-Series 5% Capped Index: A

  L'idée behind: Les fonds sont plus concentrés, biais large cap, pas de gros changement sectoriel…

  - **EMU SRI** sera lancé vendredi, 180Mo de dollars (venus en interne), 64 titres dans le bench -physique à 100% (multi asset, Belgique) - que des titres côtés zone euro mais y'a aussi un titre côté aux US '(Coca Cola)
  - **Emerging SRI (Ashok):** changement d'indice le 18/09, AUM = 616Mo & ont eu 100Mo USD y'a pas lgtps + changement d'indice pcq la valeur Taïwan semi conductor avait un gros poids ds l'ancien indice (autour de 20%) - now les actions sont capped à 5% (on connaît pas les nouvelles règles) + poids de l'inde entrer ancien et nouveau bench= from 12.8 to 18.8 et taiwan = 29.4% to 12.50%
  - **Europe SRI**: aussi appel d'offre bien négocié, 121 lignes ds l'indice, impact 4.9bps from tax only (pas de transaction fees)
  - **Japan**: 13 sept launch, appel d'offre aussi et le changement d'indice a couté 0 au total; 65 titres - on a pas le count avant/après pcq Alex n'est pas gérant
  - **Usa**: same que world pcq y'a ONEOK pour 65bps (13 sept too) - 130 lignes du bench + 1 removal (changement de répli) Turnover d'1 Ma sur le fonds ; pcq qu'on passe de 400 valeurs à 129 lignes (on a delete tous les SC/MC pour garder les large caps) ; - 0.1bps

(pcq Alex a fait un appel d'offre & ils ont pas eu de frais d'exec)
    - **World**: passage de synthétique à physique, 383 lignes ds le bench, exclusion d'une ligne (ONEOK - 35bps - peut couter si oil up) - parce que c'est ds la liste d'exclusion de bnp (valeur pétrolière/gas) - souscription de 35Mo USD en interne (ces derniers jours) hence > 200 Mo AUM; changement d'indice le 13 septembre - changement de répli = 4bps

- **GBI Emu > Bloomberg Barclays Euro Aggregate Treasuries**: (13 sept): environ dix trade, profil similaire/identique, pas d'impact sur le tcost (on vend de l'Italie pour récup eastern europe ds zone euro - Slovaquie, Slovénie pour moins 1%) / euro govies all mat, capi weighted - Fr, Italie, Allemagne
- **JPM EMBIG > version ESG**: 160Mo de dollars sur 460Mo de dollars = 35% de turnover - appel d'offre pour le brokerage, JP = -6bps par rapport à l'indice; ont préféré traiter avec Jane (-10/+ 10); ça a couté 5bps en net ("réduit l'impact du slippage"). Ca fait deux mois qu'ils essayent de vendre le Venezuela (pcq us persons etc); 250k de perte so far (1mo en market value…)
    - **Subcustody v custody**: custody =custodian qui fait appel à des sous-dépositaires abroad (ex: citibank india) // Et les sous-depositaires doivent contrôler + les clearing houses aussi - 4 jours pour faire ça, 3e fois (on saura demain matin)
    - **JP fait le brokerage et ils perdent du fric à chaque fois**

Ce qu'on file aux sales

- **Daily Reporting AUM (par mail)**: change-t-on le format = on met tout sur un drive type interface gestion/sales / un seul fichier excel avec les reportings AUM/SR maj
- **Mettre les flows AUM / SR en update automatique (YTD + recalcul sur le mois)** - oui/non/bof parce que y'a la question de la BI (possible de query la BI ou pas?) + des droits d'accès aux fonds (que je n'ai pas sur les fonds quant, see Sailpoint) + le seul moyen d'updater efficacement les trucs c'est avec ATX et les sales n'ont pas les accès.
    - **Sales want**: un mail automatique & joli avec les charts (pas d'autre feedback thus far)
- **Fichier de comparaison d'indices (NOT DONE)**- mais à partir de quelles compos + si on a les composantes on utilise PORT (où on a le breakdown region/pays/secteur/perf) direct vs. Si on a que le niveau on peut quasiment rien faire… (tu fais new indice vs old as bench pour avoir les stats de base) | En terme de view: on peut pas vraiment custom la view, just remove from the parameters that are displayed (cf. tous les indicateurs des reports type smart beta). Leur question: sst-ce que c'est plus facile de construire ça avec Aladdin directement: non.
    - **Sales want:**

        Exemple sur Fixed-Income
        - Split by S&P credit rating (% et cam)
        - Total Nb of bonds and types (fixed to float, perpetual bonds) + YTM + dur + avg coupon
        - Top 10 issuers
        - Top 10 positions
        - Split by BICS sector + overweight/underweight vs parent index (port stuff)
        - Split by effective dur (bucketed)
        - Split by country of issuer
        - Split by country of issuer (top over/underweight vs parent index)
        - Indexperf (yearly, chart)
        - Top 10 issuer
        - Top 10 pos
        - Lis of exclusions (ticker / reason fo exclusions, date last band)
        - Breakdown sovereign bonds v quasi sovereign bonds (before/aftger)
        - Credit ratings (categs: A, AA…) before/after
        - Breakdown by country (before/after)
        - By region
        - % top 35 v rest of the world

_____

CALENDARZ - Process

1. Vérifier que y'a tout
2. National Holidays:
    a. Lux: Friday 1st novembre
    b. Fr: 1e nov, 11 novE
    c. US: Thanksiving (28 novembre)
    d. Jap: 4 c'est culture day obs +

Reporting AUM & NNC

lundi 9 septembre 2019
15:23

WHERE TO FIND THE DATA

→ Dans Business Object / Extraction DMC: récupérer l'histo des SRs. Dans refresh, une fenêtre s'ouvre et on remplit les dates (via GPS codes à séparer d'un pt virgule).
→ Il faut les aum au 31 juillet et au 31 août (tout sauf mandats) - 2 **| NOT DONE BECAUSE MISSING**
→ Les AUM des mandats au 31 juillet et au 31 août (prism) - 2 **| ALEX OK**
→ **Les NNC des mandats pour juillet, août**
→ Il faut les NNC YTM au 31 juillet et au 31 août (par mail) - 2 à filtrer sur juillet et août pour la partie II **|ONGOING**

OUTPUT

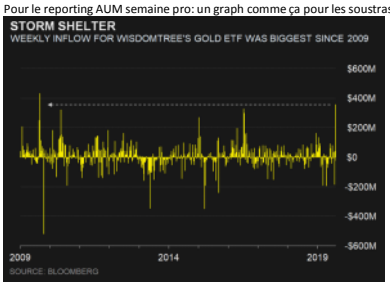
- Un rapport NNC / AUM sur le mois + YTD
- Tous les AUMs doivent être reportés en Euros: mais certains fonds investissent en FX donc on a besoin du TDC aux dates de SR
- On sépare FCPE v mandats v ETFs v fonds indiciels: repartition 0/10Mo, 10/20… avec des histogrammes
- Top 5 AUM / Bottom 5 AUM
- **Top 5 NNC / Bottom 5 NNC**
- Les mandats sont dispos dans Aladdin

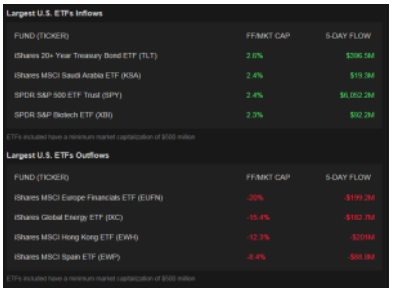
EndJuly

- Convert to text
- Get types
- Stack
- Top 5 by funds / Worst 5 by funds
- Histo per type

End July S/R

Pour le reporting AUM semaine pro: un graph comme ça pour les soustrash:





Largest U.S. ETFs Inflows

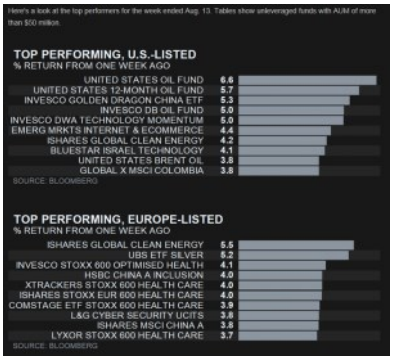
FUND (TICKER)	FF/MKT CAP	5-DAY FLOW
iShares 20+ Year Treasury Bond ETF (TLT)	2.6%	$396.5M
iShares MSCI Saudi Arabia ETF (KSA)	2.4%	$19.3M
SPDR S&P 500 ETF Trust (SPY)	2.4%	$6,052.2M
SPDR S&P Biotech ETF (XBI)	2.3%	$92.2M

ETFs included have a minimum market capitalization of $500 million

Largest U.S. ETFs Outflows

FUND (TICKER)	FF/MKT CAP	5-DAY FLOW
iShares MSCI Europe Financials ETF (EUFN)	-20%	-$199.2M
iShares Global Energy ETF (IXC)	-15.4%	-$182.7M
iShares MSCI Hong Kong ETF (EWH)	-12.3%	-$201M
iShares MSCI Spain ETF (EWP)	-8.4%	-$88.8M

ETFs included have a minimum market capitalization of $500 million



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1. Il faut les aum au 31 juillet et au 31 août (tout sauf mandats) - 2 **| 1719 MISSING**
2. Les AUM des mandats au 31 juillet et au 31 août (prism) - 2 **| OK**
3. **Les NNC des mandats pour juillet, août: | AMEDJA pour AladdinView -**
   Les mandats sont dispos dans Aladdin
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- Top 5 AUM / Bottom 5 AUM
- Top 5 NNC / Bottom 5 NNC

FPBNP (aladdin) # NNC & AUM du coup - faire apparaître à partir de juillet
Virer Linus

- **OK** Malte classé en quant (détient du S&P mais c'est uqand même chez les quants) = done
- **OK** Tt les feedbacks sont bienvenus;

OK Sharepoint: est-ce qu'on peut étendre les droits à IC - Quant / Regarder ce que ms a sur sharepoint & guido autorise ("quant")
OK Tout ce qui est sur aladdin… Ne sera pas sur BI

New psd br: rjd!!

JPM embi:
on aura eu 60m et qqs mardi, 13m mercredi et 66 ajd

REVISIONS

Les problèmes:

BNP PARIBAS L1 MULTI-ASSET INCOME

➔ Ce n'est pas un quant mais 2 poches indicielles de la catégorie MANDAT- du coup le rapport est faux

Code Aladdin L1MIEHDEU et L1MIEHDNA2 - CODES GPS:

L1MIEHDEU	15346_8
L1MIEHDNA2	15346_36
AFMIEQEHD	15384_18

15346 (double code pour deux fonds à récup sur aladdin, l'un est la copie USD de l'autre)
15384? On vire pour éviter un autre "quant qu'on gère pas"

BNP PARIBAS L1 MULTI-ASSET INCOME : fonds multi asset solution qui délègue ses poches à plusieurs équipes = les deux premiers sont des mandats (qui sont bien gérés par nous)

ID SGPS	ID SGPS To Text	Aladdin Code	Product Official Name	TYPE	Comment	Business Object	Aladdin	ID SGPS
15346_8	15346_8	L1MIEHDEU	BNPP L1 MA EQ HIGH DIV EU	Mandate			x	
15346_36	15346_36	L1MIEHDNA2	HIGH DIVI EQ	Mandate			x	
15346	15346	L1MIEDEFIE	BNPP L1 MA EQ DEFI EUR	Quant			x	
15346	15346	L1MIEDEFIU	BNPP L1 MA EQ DEFI USD	Quant			x	

Les deux derniers sont à récup sur Aladdin; parce que qd on récup le fonds sur BI on a l'AUM total (pas que des poches quant) - d'où vérifier que l'aum est plus faible par rapport à août (sur aladdin: 15346_8, 15346_36

- BNP PARIBAS A FUND European Multi-Asset Income- du coup le rapport est faux
  ➔ Ce n'est pas un quant mais 1 poche indicielle de la catégorie MANDAT
  Code Aladdin

- Sur le deuxième: revoir l'actif net parce que n'est pas de 400Mo (mais de 27Mo) - Attention: ne provient pas de la BI (apparaît à 422 millions) /// 15384 à enlever de stacked NAV et NAV_EndAugust + du coup on récup 15384 et 15384_18 sur Aladdin

- Donc vérifier que les extraits d'aladdin ne sont pas dupliqués dans la BI

Une minute patapon: pq y'a 3x moins de s/r sur les files de ms?

Pour corriger:

1. Virer les données qui viennent de la BI sur les 3 fonds & dans le stack
2. Récup les données from Marie Sophie et les caller dans AladdinData_EndJuly
3. Stacker
4. Vérifier que les colonnes de droite c bon
5. Faire tourner le code & récup toutes les valeurs
6. Refresh les tableaux croisés dynamiques

15346 (double code pour deux fonds à récup sur aladdin, l'un est la copie USD de l'autre)

155 valeurs à retrieve
66 valeurs from 31st
Relais ruscus out

TRMI (Thomson Reuters MarketPsych Indices)

vendredi 13 septembre 2019
11:35

World' s most comprehensive finance-specific sentiment data, covering all major countries, currencies, commos, equity sectors…Through news and social media content via NLP

- Screens for different emotions (optimism, confusion, urgency…) + financial language (price forecasts) + specific topics (IR, mergers…)
- On a minutely basis
- For trading strats, volatility forecasting, risk management, event monitoring, macroeco forecastings...

Useful since emotions magnified by bandwagon effect, negativity bias, observational selection…
Basis for analysis: premium news, global internet news, social media (3Mo article daily) + social media = twitter + yahoo stock message boards + moreover technology social media feed (derived from 4Mo social media sites). Utilisent moreover pour traiter le big data, faire du web scrapping…

How to - les techniques de NLP sont assez tendues:

- **Source type customization**: unique templates for different language styles. E.g. in social media: different levels of sarcasm and irony, incomplete thoughts, misplaced/excessive ponctuation, misspellings, nonstandard grammar, case insensitivity, crude language. Difference vs. Historically trained linguistic analysis engine: wouldn't get "this trade was a bomb" related to warfare. How to get the subtlety: MarketPsych's text analytics dictionaries and grammatical technology are updated every two to three years (to include new lexicon + new text sources / Twitter)
- **Custom lexicon: r**epository of complex words and phrases of sentiment relevance
- **Correlate-filtering**: preventing errors in entity matching
- **Temporal classification**: forward looking sentiment v current sentiment
- **Modifier words**: scaling of results depend on adjectives
- **Credibility testing:** The TRMI are the product of a complex process of relevance and credibility testing applied to a pool of tens of thousands of online sources and authors in both news and social media - millions of social media messages, news from internet, thomson reuters news. Note: audiences migrate (from Yahoo! Finance to Twitter and Seeking Alpha)
- **Insights about bubbles:** balance between speculative conversation (references to future price outperformance) v analytical (accounting fundamentals + expressions of pessimisms)
- **Bubbleometer**: measures the amount of speculative - analytical conversation in the media about an asset / result inversely correlated with the price of that asset over a one-year period.
- **Trust arbitrage:** The TRMI highlights how investors can overreact and underprice assets when an event takes place that contradicts their standard view of a particular market or asset. Overreaction refers to the tendency for stock prices to mean-revert after a large, significant event. As a result, it is advantageous to buy low-trust stocks and shift high-trust stocks on a monthly rotation – a practice MarketPsych calls ”***trust arbitrage***.”

Relevant and credible articles are analyzed by parsing out English-language entities, words and phrases of potential interest to traders, investors and economists. Complex relationships between those concepts, based on part of speech and grammatical analysis, are determined algorithmically and scores assigned to a pool of important fundamental, technical and sentiment concepts. The indices themselves are constructed using a Natural Language Processing software that **employs grammatical templates to extract the correct meaning from all of these text sources**. For instance, MarketPsych’s software “knows” that the phrase “That trade was the bomb!” refers to a successful trade, not to warfare.

Difference between traditional news analysis & social media: how viewpoints are

conveyed

Social media:

- Less editorial oversight
- Convey their own emotions as opposed to journalists
- Rarely opponents' opinions (reporting on the emotions of the underliers)
- Use of emoticons & acronyms - dvp organically with regional, industrial and national difference.

Hence: sentiment scoring accuracy is improved by text analytic models calibrated to source type. MarketPsych uses differentiated models for news, social media, tweets, SEC filings, earnings conf call transcripts.

One approach for sentiment analysis: Lexical Analysis

Lexical Analysis identifies explicit words and phrases in a body of text (most used in sentiment studies) + relevant content is organized and scored according to a hard-coded ontology. Subapproaches:

- (Simple) "Bag of words": words are counted according to their frequency, no additional grammatical/relational post-processing is performed. LIMITS:
    - most lexical approaches are focused only on extracting one-dimensional sentiment. Note: in Harvard General Inquirer (?), the word tokens representing specific sentiments are occasionally désuets.
    - Lexical ambiguity across domains: "investor", "financiers" classified as negative sentiment terms in some open-source sentiment dictionaries. MarketPsych has overcome lexical ambiguity with extensive business-specific customization and curation of lexicons
    - Insensitivity to grammatical structures: TRMI uses optimized grammatical structure templates (not described in current article)

Entity Identification & Correlate Filtering

Refers to the situation when one entity is described by several aliases/multiple spellings/refernce names (e.g. IBM = Big Blue = International Business Machine). Against this: MarketPsych prepared a list of over 60k entity names with aliases + improved with human review + updated monthly with new/changed entities (following M&A…). Also uses ML to identify correlate and anti-correlate words in proximity of ambiguous entity references (ex: gold/silver as commodities, also as olympic medals every two years) = must be eliminated using anti-correlate filters (delete gold medal, won a silver) + korean won v won an event. Another method: references to oats are counted only if they also contain key identification correlates (prices, futures)

Linguistic Analysis Flow

About 4k sentiment variables (Vars), each with the potential to be applied toa different entity (AccountingBad/ AccountingGood - qualified by the tense = AccountingBad_n = bad accounting sentiment now, v _p= past, _c = conditional, _f = future). This is used to score each sentence according to its main theme and the sentiment coming out of it ("analysts expect Mattel to report much higher earnings next quarter" scoring 2)

Creating an Index

The TRMI themselves derive from two groups of sources: news/social media + data feeds = social media + news media + aggregate feed of combined social and news media content. TRMI updated minutely + 2Mo articles processed daily & contributing to the TRMI feed within minutes from their publication.

Source text

From news articles, MarketPsych and Moreover social media content, back from 98 (MarketPsych) + new from Thomson Reuters News Feed Direct & archives. Currently, all source text for the MarketPsych sentiment products is in English Language: also sources from hundreds of less-popular asset-specific blogs and forums.

- **12 commodities** (Cattle, cacoa, coffee, corn, hogs, orange juice, palm oil…)
- **22 materials and energy** (aluminium, biofuel, coal, crude oil, ethanol, gasoline…)
- **132 countries**
- **8000 global equities: 12k companies from 75 countries**
- **32 currencies** (yen, dollar etc)

TRMI (Indices): 14 sentiments common to all five scored asset classes. Macroeconomic and topic TRMI vary by asset class. Range either from -1 to 1 or 0 to 1.

- **Buzz**: some of all abs values of vars across asset constituents (= measure of abs sentiment affecting one theme). Represents a sum of entity-specific words and phrases used in TRMI computations. Can be non-integer when any of the words are described with a minimizer, which reduces the intensity of the primary word or phrase (less concerned)
- **TRMI t of asset am**: sum of Psych var (additive or substractive) / buzz of asset (total sentiment around the asset) [Ex] Nasdaq 100 has Mattel as a constituent = le score de Mattel rentre dans le buzz de Nasdaq 100.

Sorted by:

- Emotional Indicators: Anger, Fear, Joy
- Macroeconomic metrics: eazrnings forecast, IR forecast, long/ short (from -1 to 1 for directional consistency). Up to 48 TRMI per country.
- Buzz metrics on the asset level (Buzz + market moving topics for that asset: litigation, regulatory crackdown, mergers, vol)

Index	Description: *Score of references in news and social media to …*	Range
sentiment	overall positive references, net of negative references	−1 to 1
optimism	optimism, net of references to pessimism	−1 to 1
fear	fear and anxiety	0 to 1
joy	happiness and affection	0 to 1
trust	trustworthiness, net of references connoting corruption	−1 to 1

Index	Description: *Score of references in news and social media to …*	Range
violence	violence and war	0 to 1
conflict	disagreement and swearing net of agreement and conciliation	−1 to 1
gloom	gloom and negative future outlook	0 to 1
stress	distress and danger	0 to 1
timeUrgency	urgency and timeliness, net of references to tardiness and delays	−1 to 1
uncertainty	uncertainty and confusion	0 to 1
emotionVsFact	all emotional sentiments, net of all factual and topical references	−1 to 1
longShort	buying, net of references to shorting or selling	−1 to 1
longShortForecast	forecasts of buying, net of references to forecasts of shorting or selling	−1 to 1
priceDirection	price increases, net of references to price decreases	−1 to 1
priceForecast	forecasts of asset price rises, net of references to forecasts of asset price drops	−1 to 1
volatility	volatility in market prices or business conditions	0 to 1
loveHate	love, net of references to hate	−1 to 1
anger	anger and disgust	0 to 1

Others: fundamentalStrength, layoffs, litigation, managementTrust, priceMomentum… To remember: joy, trust, violence, conflict, gloom, stress, timeUrgency, uncertainty, emotion v fact, loveHate, debtDefault, marketRisk, budgetDeficit… Check out: SocialUnrest TRMI.

Reading the results
NA if no sentiment has been measured (absence of relavant text or resultat measurement), 0 if positive/negative sentiment add up to 0. If Buzz is 0 = no values were detected for any of the indices and thus all index values will be NA.
Cryptowise: TRMI cryptocurrencies data covers morer than 150 activ cryptocurrencies, selected based on listed market capitalization or technological significance (incl. All cryptos present in coinmarketcap.com ranking in top 100 CC by market cap starting Nov 2017); Coverage is updated monthly to include new entrants. Specific indicators:

- Anonymity
- codeUpgrade
- criminalActivity
- FOMO
- Fork
- ForkForecast
- Hodl

LOOKUP: Harvard General Inquirer dictionary

What's the difference with Bloom?

- Pas de profondeur dans les données security-wise + mostly reading/twitting activity (charted) only cpy wise (ex: nothing on crude oil…)
- Pas de distinction dans les sentiments

Thomson Reuters Expands Sentiment Data to Track Top100 Cryptocurrencies (since June 2018) - MarketPsych Data

= market leader in quantitative behavioral science. The TRMI indices package uses ML and natural language processing to measure a breadth of emotional and topical items across news and social

media sites that may drive market participant behavior in crypto markets = 43 themesE and sentiments on the top 100 CCs.
Also: TRMI is accompanied by visualization tools and a suite of quant research results dvp by Market Psych, including regression & ***cross-sectional rotation models,*** to help trader

Ce qui est cool: c'est pas qu'un classement optimism/pessimism - c'est multi dimensional (emotions: fear found to widen BAS while joy = higher price peaks and larger collapses)
Coverage: sentiment data on all major countries, currencies, commos, equity sectors, individual US/non-US equities (fear, optimism, urgency + monitor financial-specific ideas & macro topics such as gov instability, carry trade opinions in currencies, production volume in commodities…)

TRMI - Understanding the Thomson Reuters MarketPsych Indices

https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781119219149.app1

- Based on a ***repository*** of simple and complex English-language words and phrases of potential interest for traders, investors and economists.
- Use ***grammatical templates*** customized to extract mezanings from financial news, social media, earnings conference call…

Intraday online investor sentiment and return patterns in the US stock market (T.Renault, Journal of Banking & Finance)

- Swing trader: swing trading is a style of trading that attempts to capture gains in a stock over a period of a few days to several weeks. Swing
- BeautifulSoup (python library)

tral by an expert.[4] The last technique consists of creating or extracting a list of pre-classified documents and, for each word, computing statistical measures based on the term's frequency (and/or document frequency) in each class of documents. Term frequency thresholds are then used to classify each word as positive, neutral or negative.

- Three of the most used classifiers:, naive Bayes, SVM, maximum entropy
- Natural language processing approaches: lemmatization, stemming, part-of-speech tagging
- L1 and L2 are available online (L2 equal weighted)
- Term-Frequency-Inverse Document Frequency (TF-IDF) weighting scheme.
- "On days with macroeconomic news announcements, the last half-hour is mainly driven by the news announcements in such a way that sentiment-driven traders do not affect prices."
- Swing trader: accompagne le gamma / position trader = actual view (pdv macro) -
- On pourrait éventuellement faire le volfefe mais avec d'autres trucs? (pour forecast autre chose que les returns = var en volume, vol imply etc)
- Etude d'événement /// soit on fait du big data soit on regarde un truc très précis
- Dimension reduction: PCA or principal factors analysis or maximum-likelihood factor analysis
    - bnp paribas funds euro multi-factor equity

RAVENPACK
Big data analyticsprovider for financial professionals = data insights that can be visualized, downloaded = transforms unstructured datasets (traditional news and social media) into structured granular data and indicators. Clients: disctionary trading, investing, market-making firms.

- RavenPack's Element Sentiment Scores
- Exponential Decay Function to scale the sentiment score.
- Trading on news derived from internal data decays slower than public news
- Filttering ESG portfolios with news sentiment not only provides value in Alpha generation, it also brings strong improvement to downside protection.
- Kind of datasets they provide: Geo Exposure to trade wars & tarrifs + brexit + companies co-mentioned with Trump + JPM extreme analyst ratings + bad news only (isolate negative news on companies ranging from disappointing fundamentals to executive scandals) + latest mergers & acquisitions (incl. Consolidations, hostile takeovers…) + buybacks

- Datasets: finance related = ESG Investing + cryptocurrencies (track sentiment on some of the hottest cryptocurrencies on the market today) + US Large Cap Portfolio (portfolio analytics on some of the largest companies in the US) + insider dealing (catch trading of stocks by individuals with access to non-public info about their companies) + forex + analyst reco + tbtf
- Offers Portfolio Ranking Tool based on sentiment: users can upload a stock portfolio and tailor their analysis to address risks detected across 19k sources including news, social media, regulatory filings and transcripts.The portfolio ranking tool uses stock rankings to monitor users' headline risk, identify sentiment indicators or flag companies that are no longer aligned with users' strategies.
  RavenPack's sentiment analysis is performed using a proprietary Natural Language Processing (NLP) engine designed specifically to process finance-related content. Most NLP services are trained with general language corpuses using machine learning techniques, which yield low precision and recall levels, and are insignificant to yielding alpha or excess returns. These naïve approaches lack the understanding of business terms or financial lingo or the implication of business, macroeconomic and geopolitical announcements on stock prices, volatility, and market liquidity."
- Users of the ranking tool are able to rank high those companieds that have positive earnings and product snetiment, and view whether a company has experienced a negative ESG event. The tool also provides a means of ranking stocks by sustainable corporate behavior and measuring how well firms manage idiosyncratic and systemic risks.
  https://a-teaminsight.com/ravenpack-offers-portfolio-ranking-tool-based-on-sentimenT
- Ravenpack has lauched query tool that connects to 20Y of news, social media and other textual content, with analysis performed in the cloud in real time ("Analytics Search"). Can be used for comparative keyword research and to discover event-triggered spikes across billions of articles. If combined with sentiment scoring and analytics, users can measure interest in a particular topic across thousand of global sources, right down to sentence level.

SENTIMENT SCORING
Formule: (CF fin/ CF debut) ^ (1/ (nb total jours / 365)) - 1

ML as a whole:
Most alpha strategies use alternative data work in the framework of weak predictor aggregation = combine idnividual predictions to get a strong-performing strategies. Two key points: signal breadth (large trading universes) + signal frequency (the more frequent, the more the portfolio can be rebalanced)
In research, they can be coupled with other alternative data sources or traditional market factors.

RAVENPACK

RAVENPACK
(1) What kind of Dsets are covered (data on bitcoin, dash, btccash, ether, ripple, monero, EOS, litecoin, doge…) - r
(2) Methodology/Whitepapers for building sentiment indicators (Sentiment strenght, relevance, event sentiment score, Composite sentiment score (ESS, CSS…)
(3) Granularity of data
(4) Request trial
(5) How does the system work (queries, aggregated results etc): platform with live indicators or datasets/historical results
(6) Do they have smth like TRMI's (distinguishing fear, greed, FUD, FOMO etc) MarketPsych Indicators
(7) Source of data (beyond newspaper): bitcointalk, reddit (see subreddits)
(8) Possibility to identify the strongest weighted sources in each score (first movers)

J.P. Morgan ranked as the leading bank in machine learning and alternative data research; Man Group as the leading hedge fund in machine learning research; Marcos Lopez de Prado as the leading academi

Comparaison d'Indices sur Bloom

mardi 17 septembre 2019
14:06

BBU

- Files stored for 2 weeks
- Can download the mapped file (for the upcoming two weeks)
- How it works: whenever uploading = edit mapping tab + update the mapping delimiters + click next + set data delimiters
- If you need to map the row: enable row mapping
- You can map more than one column of data to the security ID field, and CDE will apply waterfall logic to the fields. CDE looks to the first Security ID column for a BB-recognized identifier, then, if no identifier is found, looks to the second column etc.
- The minimum fields required to upload a portfolio are Security IF, position size expressed as Position (Quantity), Portfolio Name & Date.
- Position & Transaction portfolio?
- Plein de règles ds le choix du mapping: portfolio ticker + portfolio name

Using CDE with BBU

CDE: define and use custom fields in selected BB rpofessional service functions (ESQ, G, PORT) so as to use our data across Bloomberg.
---> **Mapping issue**: some columns aren't got right and mapping fails
---> **Not necessarily access to index constituents:** JPGCCOMP can only be queried by Charles / Can be downloaded on Excel then back on Bloomberg but what's the point
---> **About proprietary levels**: either you get them on Bloomberg - in which case port > statistical summary gets you most of the data you want
---> **Or you upload the pcf on BBU (oschdir)** - in which case you can use views
---> How about CDE: you could download the price list as the values for one asset (custom index) then compare those

ESG Stuff

- 12k issuers in the universe; so they should all be there = in ESG Notes
- All Portfolio tests = include the 4 portfolios I need to check
- Updated pres detailingnew scoring methodology = ESG Meth
- Shared template to receive your inputs

HIGH SCORE LOW RISK
Relative to industry + region (sector/region)
Simple links bt E/S/G and ESG score
Fewer themes than indicators
Coverage for all issuers or at least the sector (= take the sector mean in case coverage isn't full)
Standardization: MCQ-like indicator (few different answers)
MATERIALITY MAP: different sectors have different sensitivites to the same 77 themes // donc on crée une heatmap
24 THEMES - 3 dimensions (E/S/G) equal weighted
Inside each dimension: some themes are less weighted than others -

Environment: 9 Themes	32.6%
Environmental Management	5.7%
Incidents operational risks	4.9%
Waste	0.7%
Air Emissions	1.4%
Water	0.8%
GHG emissions	6.9%
Renewable use	0.1%
Environmental Supply Chain	6.9%
Product Environmental Value Added	5.5%

Social: 8 Themes	33.7%
Human Resources	12.1%
Health & Safety	2.6%
Social Supply Chain	8.7%
Product Social Impact + Financial Inclusion	0.9%
Society & Community	3.6%
Data Privacy	0.8%
Customer	4.3%
Access to Health Care	0.7%

Governance: 7 Themes	33.7%
Business Ethics	12.7%
Memberships	1.0%
Fiscal Policy	0.0%
Board governance	7.4%
Directors oversight and skillset	4.4%
Committee composition	4.4%
Respect of shareholders rights	3.7%

Indicators: policies / programs / incidents / performance / corp gov
Based on equally weighted centered ESG scores = on score pour E & on centre puis on equal weight.
FINAL GAUSSIAN SCORE IS STRETCHED to math a 10% prob at score 10 (= score 10 -> 10% of issuers below)

- Lien entre la materiality map / les weights
- When data are missing, other indicators weights are increased to have a consistent dispersion of final scores? ATTENTION C INDICATOR PAS THEME
- "We managed to integrate 14.2% on average of policies disclosed data." = on a de la donnée sur 14.2%
- Dans le fichier "All portfolios 1.1"" y'a des lignes en duplicates & des sec_type cash // ex LVMH Finance Belgique SA qui apparaît 3x - pris en screenshot & saved dans le folder Anything ESG + available in "all portfolios 1.1"
- A la fin du fichier ESG Notes 1.1 y'a des codes aladdin qui correspondent à r

STEPS STEPS STEPS

BY DATASET

1. Retrieve portfolio v basic bench data // issuer ID // E+S+G Scores 1.0 // weights
2. Count missing E+S+G 1.0
3. Merge with table scores
4. Count missing E+S+G 1.1
5. **Fill NA with sectoral/region avg ---- get deciles**
6. Get quickstats on old/new (mean, stdev, etc) & check for normality - par region/secteur mais pas assez de données -
7. **Check outliers (min/max)**
8. **Histo before/after**
9. Comp with SC file for double check
10. Improvement of score (1.0 to 1.1)
11. *Bias check: by sector, by region, by sector/region*
12. TESTING THE DIRECT DECILE EQUIVALENT

- Deciles sur Aladdin; non rated = 0 (rp 50 sur le new)

- On renormalise les esg0
- On veut flagger les 8/9/10
- (donc trouver ce qui rentre dans les 8/9/10)
- Et les changements de 2 déciles
- Amélioration globale des notes except emerging
- Amélioration de la note ESG /// (weighted)

COMPARISON

1. Plot histogram port v bench; target 20%
2. OUT: récupérer la note quant
3. 10 worsts / 10 best - show when not in proper decile
4. Compare past/now scores (x4 entries)
5. Compare coverage

Incohérences:

- Dommage de pas noter les out.
- Tableau des missing issuers x30 à sortir sur excel /// 30 issuers - mauvais codes (codes à vérifier par nom)
- Amélioration globale des notes except emerging
- Répartition (sector/region breakdown) à envoyer
- Amélloration de la note esg (weighted) - a-t-on bien 20%

TAKEAWAYS

- Model combines normal distrib of score within each cluster + uniform law across clusters
- Z-scores: used to compute distance to mean for each indicator (& make those distances comparable between clusters);then converted into a note between 1 and 100
- Coverage adjustment: to avoid penalizing small caps (no data)
- Materiality map: main SC input
- Note: the distrib isn't truly uniform - we just scale to have 10% in the first decile, 10% in the last - what happens in between
- ESG raw score = indicator score (data provider) * weight (from mat map)
-

Stepsstepsteps:

1. Get materiality map
2. Get raw indicators
3. Define indicators' weights - to minimize the final bias (sectors, subsectors, geographies, sizes)
4. **Define clusters:** thiner than GICS. Note: the choice of split does have an impact on the final result (plus d'issuers = plus de variance = z-scores plus petits)
5. ESG raw score = indicator score (data provider) * weight (from mat map)
6. Coverage adjustment: normalize the z-scores at sector level (making sure that small caps can have scores far away from mean, even if lack of data = z-scores are normally distributed within each cluster
7. Scaling: turn z-scores into contribs (with contribs homogeneous to the magnitude of the target ifnal score (0-100))
8. Final score: 50 (bc scaled z-scores are pos/neg) +/- contribs.
9. Cap at 100
10. Distribution is quasi homogeneous!!

FCPE

- Récupérer la trade date du jour J & pour chaque fond on recalcule la NAV

Changed f0slaeti - !PowSunnie5

AUM NNC

- Malta remonte pas ds Aladdin: Alex says its closed -c'est sorti **OK**
- Bjus: c'est libellé en KRW donc AUM near 0 qd tu convertis **OK - Aladdin sort les euroNAV.**
- Linus is out (à la main) **OK**
- Tout remettre en euro: stacked updated + add les 4x fonds avant **OK**

- A double check sur les s/r oct - alain/paul

BNP PARIBAS EASY STOXX EUROPE 600 OIL&GAS UCITS ETF
BNP PARIBAS EASY EQUITY LOW VOL GERMANY
BNP PARIBAS EASY ISTOXX MUTB JAPAN QUALITY 150
BNP PARIBAS EASY EQUITY DIVIDEND EUROPE
BNP PARIBAS EASY EQUITY DIVIDEND US
BNP PARIBAS EASY EQUITY VALUE US
BNP PARIBAS EASY HIGH YIELD EUROPE DEFENSIVE

- **Il manque EPRA green + trois fonds obligs // à add sur aum & sr - only changes easy (yep)**
  - AUM **done**
  - **SR done**

- Sur le double comptage: retrieve x4 sur le fichier MIR + compte que sur Easy + tous les nourriciers. On rappelle qu'on avait vu sur MIR que le double comptage affectait les feeders (nourriciers) & pas les masters (fonds-maîtres). Donc récup les 4 (lol) et tous les fonds maîtres (Charles) **OK**

AUM end Nov

- **Import AUM end Nov: check (except**
  43367 Social Impact bond funds, doesn't exist)

  Checking with Eric:
  Funds that have no SR:

TABLEAU

- **Quartiles Morningstar: divide the data into 4 equal reguions - expressed in terms of rank = measure how well a fund has performed compared to all other funds in its peer group - such that mutual funds are ranked only vs mutual funddds etc. Top 25% in the first quartile.**
- **Quartile R: percentage of accounts (expressed in AuM) that have a quartile in the category (which percentage of the category's AuM is coverd).Be aware for quartiles: only displayed for accounts having an cs return.**
- **Value Added: XS * AUM**
- **TE: ex-post TE**
- **Cash Benchmark (***) : bench contains more than 50% of cash index or is Forced Cash Benchmark**
- **Forced Cash Benchmark: benchmarkperf has been forced to 0, therefore the XS return equals the portfolio gross perf**
- **Peers bench: perf calculated doing avg gross perf of peer group as defined by Xavier Bedel**
- **Specific & Constrained: Non active investment management or investment team only in charge of implementation**
- **Out of scope: no perf data or no benchmark or exclude the fund due to perf calculation issue**

Ghosts in the RoboAdvisor Machine (ETF.com)
ASSET ALLOCATION
https://www.etf.com/sections/blog/22973-ghosts-in-the-robo-advisor-machine.html?nopaging=1
https://www.etf.com/sections/blog/22982-inside-robo-advisor-asset-allocation.html?nopaging=1
Everything by E.Kashner (director of ETF Research @Factset):
https://www.etf.com/contributors/elisabeth-kashner?page=4
"Anyway, I dare say, my bar mitzvah boy probably doesn't need fixed-income exposure. Not in middle school, anyway."

- **Comparison between portfolios**: while keeping the breakdown between equity/FI consistent. (90% equity / 10% FI). Compared 5 providers using P/E ratios, Emerging Markets %, Financials Sector Weight. Allocation to EM stretched from 6% to 25%.
- **Investir dans l'immo:** REITS ou en indirect (on achète des parts de boîte investissant dans l'immo)
- **Home country bias:** present in Wealthfront, WiseBanyan and Invesssence
- **In FI:** look at effective duration, YTM, Credit Spread Sensitivity (Duration * Spread, Spread Sensitivity). "Yields arenot comparable because Wealthfront, Betterment and Invessence offered tax-sensitive portfolios with munis, while covestor, WiseBanyan and FutureAdvisor currently offer only taxable bonds."
- **As a result:** ""No two [robo-advisors] areexactly alike, because they've been programmed by humans - humans with opinions about asset allocation, security selection and portfolio maintenance. The resulting portfolios reflect their makers' convictions."
- **Robo-Advisors' fees:** management charge + potential bnrokerage fees + custodial fees + portfolio's expense ratios
- **Rebalancing:** may be triggered by calendar, cash flows or tax-loss harvesting
- **Optimizing on net after-tax returns** (asset location, tax loss harvesting and rebalancing) has more impact on LT investment outcomes than tactical asset allocation
- **Objectives:** inflation control, factor exposure, aping the market, including risk/return expectation of the investment committee.
- **Systematic allocation:** most robots use optimization techniques, but one explicitely builds separate sleeves for each class

    - INVESSENCE: quadratic optimizer
    - OTHERS: mean-var model - but notoriously produce highly skewed portfolios, especially when using historical asset class returns as inputs - then modify the inputs or constraint the outputs.
    - Common: determining expected returns and vols for the asset classes they want to consider + correlation + determine the best weightings.

	Wealthfront	Betterment	Future Advisor	Covestor	WiseBanyan	Invessence
Portfolio construction	Mean-variance optimization	Mean-variance optimization	Sleeves & glide path	Mean-variance optimization	Mean-variance optimization	Quadratic optimizer
Number of funds	8 (7 in taxable accounts)	12	12	7	10	21
Constraints	Yes	No	N/A	Yes	Yes	Yes
Tilts	No	Small cap/value & downside protection	Small cap/value & inflation hedge	Growth, inflation hedge & downside protection	No	No
Capital markets assumptions	Historical returns, market cap weights, investment committee view	Historical returns, market-cap weights	N/A	Historical returns	Historical returns, market-cap weights, investment committee view	Historical returns
Intent to mimic the markets	No	Yes	No	Yes	No	No

MORE ON PORTFOLIO TILTS

Portfolio Exposure Highlights:

	Equity Emphasis	Equity Sector Over/Underweights
Wealthfront	US Equities	Underweight financials
	Emerging Markets	
Betterment	Value	
	Value	Underweight technology
Future Advisor	Emerging Markets Small Cap & Value	Overweight REITs
	Emerging markets Small Cap & Value	Overweight REITs
Covestor	US Equities, Emerging Markets, Small Cap & Value	Overweight REITs
	Emerging Markets Small Cap & Value	Overweight REITs
WiseBanyan	US Large Caps, Growth	Overweight REITs
	US Large caps	
Invessence	US Equities	Overweight Technology
	US Equities	Overweight Technology

Fixed-Income Emphasis	Other
Long-dated Munis	Broad-based commodities
Long-dated Munis	Gold
Long-dated Munis, International bonds	
Long-dated Munis, International bonds	
Short-dated TIPS, International bonds	
Short-dated TIPS, International bonds	
Long-dated TIPS	Broad-based commodities
Long-dated TIPS	Gold
Long-dated Corporates, International Bonds	
Long-dated Corporates, International Bonds	
Long-dated Munis, High Yield	Gold, Cash
Long-dated Munis, High Yield	Cash

Wealthfront: notable = tradeoff between control over portfolio duration, yields and credit risk v tax-free status and tradability of munis.
FutureAdvisor notable: inflation hedging from both REITs and TIPs. TIPS = Treasury Inflation Protected Securities. "*In FI, FutureAdvisor shortens its overall portfolio duration and raises its credit quality in relation to its core aggregate US investment grade fund. It keeps its TIPS duration short, counterbalancing the long duration in its international bonds. FutureAdvisor's clients will be well positioned for increases in the CPI, but will give up yield while they wait*."

ROBOOTING ROBO ADVISORS' ETF SELECTION
https://www.etf.com/sections/blog/23078-rebooting-robo-advisors-etf-selection.html/page/0/1
Key idea: robo advisors prioritize low expense ratios over all other criteria. Misses out on the true cost of ownership & the opportunity cost of portfolio gaps. The blog lays out a logical ETF selection process, assess the robo advisors' needs, understand the available choices and rank the top selection criteria.
What makes up for a good ETF? All robo-advisors want "plain vanilla" funds = broad-based, market-cap weighted funds that aim to replicate a market segment. One professional admitted that clients prefer some complexity, finding more value in a 3-fund suite than with just one. CIO of Covestor wants "flexibility for tactical shifts" - just because Covestor is currently researching a tactical rotation model.
How do we cover the global equity market efficiently (while avoiding duplicates, overweights…). ETFs don't classify assets consistently: South Korea appears both in some dvp market ETFs and some Emerging Markets ETFs = if you combine both, you'll have overweight; if you miss out on one, you'll have a gap. So you have to choose these funds in pairs, to get full international coverage. Robo-advisors usually use iShares or combine Schwab, SPDR and Vanguard funds.
What kind of costs arer covered? 3 types (opportunity cost + holding cost + trading cost).

- Opportunity costis understood at the cost of missing out of the global opportunity set = it's the future returns of the stocks or bonds you don't hold.
- Trading costs are best represented by spreads but can also include market impact, slippage, premiums and discounts.

Logical fund-selection processes focus first on minimizing opportunity costs, and second on holding costs. Frequent traders, including those offering tax-loss harvesting servicesd, will have to balance trading costs with holding costs - weighting the combination against opportunity costs.

ETF SELECTION: COMIBING OPPORTUNITY COSTS > HOLDING COSTS > TRADING COSTS

[NOTES]

1. **DOWNSIDE RISK** is a general term for the risk of a loss in particular, as opposed to the symmetrical

likelihood of a loss or gain. Some investments have a finite amount of downside risk, while some have limited downside risk. Examples of downside risk calculations include semi-deviation, value-at-risk (VaR), and Roy's Safety First ratio (using INVESTOR'S HURDLE RATE IN PLACE OF RF)

The Formula for the SFRatio Is

$$SFRatio = \frac{r_e - r_m}{\sigma_p}$$

where:

r_e = Expected return on portfolio

r_m = Investor's minimum required return

σ_p = Standard deviation of the portfolio

code 36A74, 2ème étage, droite

2. **SLEEVE & GLIDE PATH AS AN ALLOCATION METHOD?**
3. **ATTRIBUTING PERFORMANCE? Here are the ETFs to look at:**

Equity Sector

Ticker	Equity Fund Name	Wealthfront		Betterment	
		60%	90%	60%	90%
VTI	Vanguard Total Stock Market	30.0%	35.0%	11.6%	16.2%
VEA	Vanguard FTSE Developed Markets	13.0%	22.0%	24.7%	37.5%
VWO	Vanguard FTSE Emerging Markets	9.0%	28.0%	5.2%	10.5%
VEU	Vanguard FTSE All-World ex-US				
SPY	SPDR S&P 500				
VB	Vanguard Small-Cap				
IWM	iShares Russell 2000				
VTV	Vanguard Value			11.6%	16.2%
VOE	Vanguard Mid-Cap Value			3.7%	5.2%
VBR	Vanguard Small-Cap Value			3.2%	4.5%
EFV	iShares MSCI EAFE Value				
VSS	Vanguard FTSE All-World ex-US Small Cap				
VNQ	Vanguard REIT				
VNQI	Vanguard Global ex-U.S. Real Estate				
VIG	Vanguard Dividend Appreciation	7.0%	5.0%		
Total Equity weight		59.0%	90.0%	60.0%	90.1%

Size & Style

	Wealthfront		Betterment		Future Advisor		Covestor	
	60%	90%	60%	90%	60%	90%	60%	9
Avg. Market Cap ($B)	85.6	74.5	76.0	74.3	61.0	61.1	75.4	
Large Cap	75.1%	71.9%	70.8%	70.6%	59.1%	59.3%	69.9%	69
Midcap	20.3%	23.5%	25.1%	25.4%	27.6%	27.5%	24.2%	24
Small Cap	4.0%	4.1%	3.8%	3.8%	11.9%	11.8%	5.3%	4
Micro Cap	0.6%	0.5%	0.3%	0.3%	1.4%	1.4%	0.6%	0
Dividend Yield	2.0%	2.1%	2.1%	2.1%	2.3%	2.3%	2.2%	2
P/E Ratio	19.2	17.8	18.6	18.4	19.1	19.1	19.8	
P/B Ratio	2.3	2.1	1.9	1.9	1.8	1.8	2.2	

Fixed Income & Commos

Ticker	Bond & Commodity Fund Name	Wealthfront		Betterm
		60%	90%	60%
AGG	iShares Core U.S. Aggregate Bond			
SCHZ	Schwab U.S. Aggregate Bond			
MUB	iShares National AMT-Free Muni Bond	35.0%	5.0%	23.5%
MLN	Market Vectors Long Municipal			
ITM	Market Vectors Intermediate Municipal			
SHM	SPDR Nuveen Barclays Short Term Municipal Bond			
LQD	iShares iBoxx $ Investment Grade Corporate Bond			2.3%
VCLT	Vanguard Long-Term Corporate Bond			
JNK	SPDR Barclays High Yield Bond			
PFF	iShares U.S. Preferred Stock			
VGIT	Vanguard Intermediate-Term Government Bond			
SHY	iShares 1-3 Year Treasury Bond			
IEF	iShares 7-10 Year Treasury Bond			
TLT	iShares 20+ Year Treasury Bond			
TIP	iShares TIPS Bond			
VTIP	Vanguard Short-Term Inflation-Protected Securities			
BNDX	Vanguard Total International Bond			9.0%
VWOB	Vanguard Emerging Markets Government Bond			5.2%
EMLC	Market Vectors Emerging Markets Local Currency Bond			
DJP	iPath Dow Jones-UBS Commodity Total Return ETN	6.0%		
IAU	iShares Gold Trust		5.0%	
Cash				
Total Weight		41.0%	10.0%	40.0%

Duration, Yields and Credit-Spread Durations

	Wealthfront		Betterment		Future Advisor		Covestor	
	60%	90%	60%	90%	60%	90%	60%	90%
Effective Duration	6.7	6.7	6.8	6.8	4.2	4.2	5.5	5.8
YTM	3.05%	3.05%	2.87%	2.89%	1.30%	1.30%	2.03%	1.97%
Credit-Spread Duration	6.4	6.4	5.9	5.9	2.1	2.1	3.1	2.5

4. Tactical rotation model

***

- **What do you optimize on (net after-tax returns)**
- **What's the allocation method (mean-var, adjusted mean-var with BL, addition of other factors like FF, glide path?) What the fuck is a convex optimizer?**
- **Rebal frequency & triggers**
- **How does tax harvesting work?**
- **Question: robo-advisors include broad-based commodities (incl. Wealthfront) = how do you actually do that? Futures on commo index (but I don't know any) but rolls necessary + higher tcosts - otherwise no physical….**
- **What to look for in the tilt: region/sector/asset class (FI, equity, alternative, commos)/style/ size/sector bests./ IR/Credit risk**

_____

MULTIFACTOR PRODUCT TRAINING

Present in quant strats since 2009.

Two examples of products:

- BNPP Paribas L1 USA
- BNPP Paribas DEFI

3 types of models:

- In one universe, maximize perf = Guru strategies. No mention of benchmark or tracking error.
- Single factor strategy = most diversified exposure to a single factor. Successful en LV.
- Multifactor strategy = since 2015. Gives, for an investment universe, the best possible

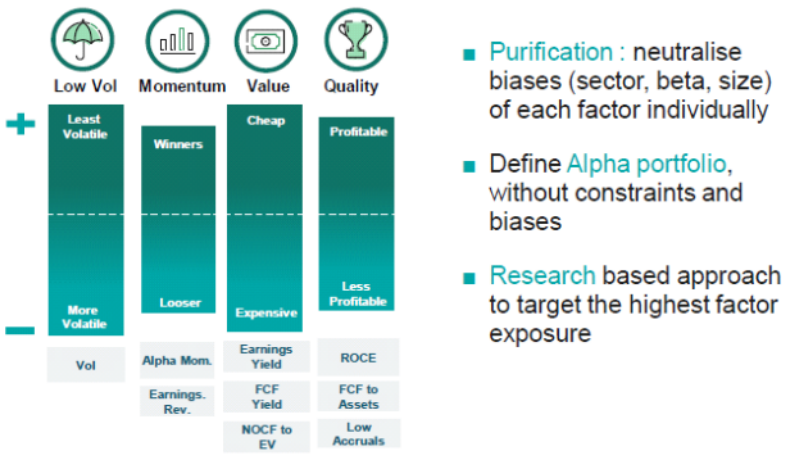
portfolio within a risk envelope = want the best information ratio, on a given benchmark , on a given universe. Hence address strategies with TE enveloppes among different geographical zones.
- Equity strats led by laurent lagarde.

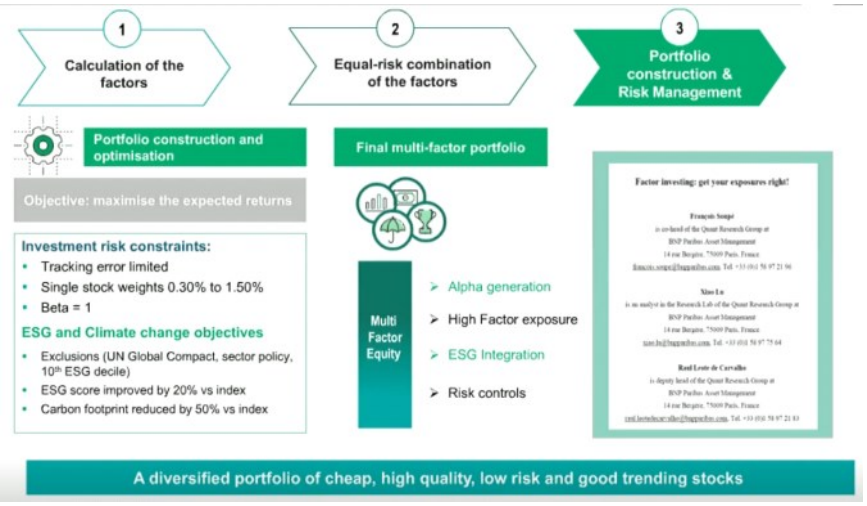
BNPP L1 USA Key Points:
- Universe: Core US Large Cap Fund.
- Exposure: beta = 1 by construction = no stock outside benchmark. TE is limited to 3.5%.
- Factor exposure: Value, Quality, Mom, Low Vol. Allocation: equi tracking error contribution from each factor.
- Selling points:
    - Core allocation = low TE & stable excess return production
    - Should navigate style rotation = rotating style depending on environment; there's no time where we produce more alpha than the other. Excess return is stable.
    - No stock pickers: want to be exposed to investment styles but not unsystematic risk
    - Competitive Mercer ranking. Mercer = ddb providing advice to consultants.

Factor investing captures equity risk premia in a systematic way, while controlling undesirable risks.
Outperformance powered by: cure equity exposure + sustainable integration + multi factor approach + diversified source of return
Risk controls: TE controlleed, equity beta = 1, neutralisation of biases, equal active risk contribution (TE envelope), tcost aversion, benchmark stocks only
It's also adaptable: multi factor or single factor+ adapt the TE to what clients' need + invest in low vol stocks= low beta stock = to bring it back to 1, use index futures. [Dc les futures sur indice ça a un beta supérieur à 1?]. Possibilité de réduire l'expo aux dérivés ou solvency capital requirement reduction.

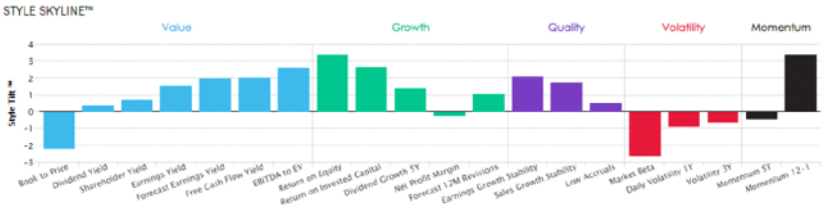
- Systematic factor exposure
- We avoid factor timing strategies for which level of significance can be low
- Factors: size, profit, value, communication, tech, utilities, energy, div yields, vol, mom….

Steps:
- **Compute factors:**
    - **Factor scores:** Value, Mom, Q, LV
    - **Purification**: neutralise biases (sector, beta, size) of each individual factor (individually)
    - **Define alpha portfolio, without constraints or biases =** we set for each stock of the universe a weight depending on the contribution of the constituent to this factor. This weight / exposure should be focused on alpha only = the portfolio that should be defined for each of the 4 factors won't be defined by market impact or any other factor (for instance, size). Some specifics metrics are used to define the contribution of each asset to each factors - these metrics are then turned into a score, compared and aggregated (= aggregate score, comparison of factors). These scores are then turned into weights so as to maximize the alpha potential of the portfolio.
    - Research-based approach to target the highest factor exposure = dynamic allocation of the factors' weights to maintain an equal active risk contribution of 25%
- Equal risk contrib: how can i weight single factors exposure to get a global factor exposure? We don't do factor timing because we don't know how to do it efficiently. What we do instead: set a weight in terms of risk budget (TE) for each factor: each factor has the same contribution to risk. Weights evolve through time depending on the correlation between factors.
    - Factor diversification: combination of factor scores to create a global score
    - Equal Active Risk Contrib: to each individual factor
- **At the end, long portfolio of roughly 100 stocks - after optimization according to article "Factor Investing: get your exposures right!"**

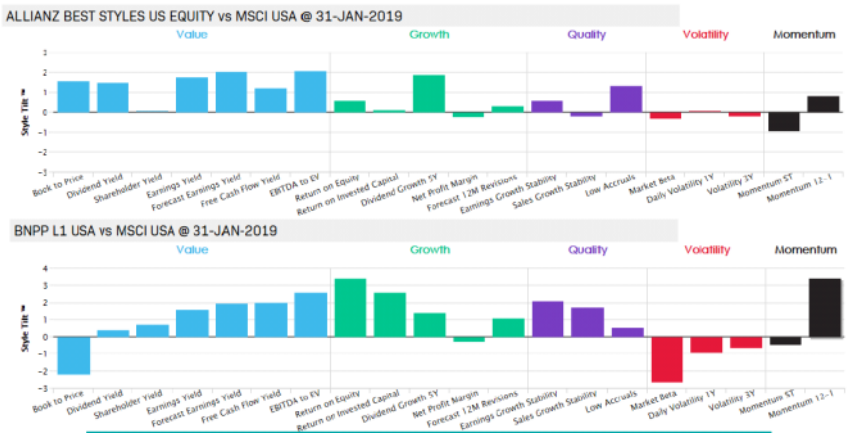




Robust risk model: ex-ante data fits ex-post. Objective of strategy = high info ratio thanks to controled TE & stable excess returns
StyleAnalytics show the strategy diversification in terms of factor exposure:



- **Je comprends pas en quoi c pas du timing de factor** = pcq c'est un ERC based on factors, pas du timing.
- **Competitors**: allianz best styles US equity - but they're better because the factor exposures are more consistent: the Allianz fund isn't using the LV factor
- Rubico QI Global Dvp Multi Factor: equal weight of factors



SUMMARY

- **Scoring for each factor**
- **Pure alpha port = combine factors based on ERC**
- **Investment constraints add value = penalize tcosts and turnover**

	Multi-Factor Equity World	Robeco QI Global Developed Multi-Factor
Philosophy	Selective systematic process offering optimal exposure to purified factor premiums in a risk controlled way (Tracking Error and beta control)	Prudent systematic investment process giving efficient exposures to factor premiums (easily explainable portfolio construction methodology; turnover control)
Investment objecitve	Overperform the benchmark while controlling relative risks => maximising Information ratio	Maximising Sharpe Ratio
Investment universe	MSCI World ~1600 stocks	3500 stocks from the World developed universe
Factor exposures	Value, Quality, Momentum, Low Volatility	Value, Quality, Momentum, Low Volatility
- Factor construction (indicators)		
Value	Earnings yield, Free Cash Flow yield, Operating Cash Flow to EV	Price to fundamentals with focus on book values, earning, yield and cash-flows
Quality	Return on capital employed, Free Cash Flow to Assets, Low accruals	Profitability, accruals, investments
Momentum	Alpha momentum, earnings revisions	Residual and raw price momentum, residual and raw analyst revisions
Low Volatility	Volatility	Volatiltiy, beta, distress risk
Factor mix	Factors are not allocated a weight but a risk budget => Fixed risk budget allocated to each factor (25%). Each factor contributes equally to the global risk budget	Equal weight of factors: - Value: 25% - Quality: 25% - Momentum: 25% - Low Volatility: 25%
Portfolio construction	1. Calculation of 4 Long-Short factor portfolios 2. Combination of these portfolios into a single Long-Short portfolio using a risk budgeting approach 3. Run an optimisation on the universe with the objective of maximising the expected alpha of the portfolio while complying with a number of constraints: - beta 1 (use of futures) - stocks weights ranging from 0.1% to 1.0% - ex-ante Tracking Error between 4 to 5% - turnover control by penalising expected alpha of stocks based on their transaction costs	Ranking stocks based on a proprietary model using the indicators listed above. Using the output of the stock ranking model, an optimisation is run in order to obtain maximum exposure to top-ranked stocks while complying with a number of constraints: - max stock weight: 2% - no position in most distresses companies - limits versus MSCI World index : * 10% Region / Country * 10% Sector * 20% Size groupe (large/mid/small) - **max 20% outside MSCI World** - Beta is not controled - Tracking Error is not controlled
ESG integration	ESG and climate change objectives : - exclusion of the last ESG decile - Improve the portfolio ESG score by 20% compared to benchmark ESG score - Reduce carbon footprint by 50% compared to benchmark	ESG score equal or better than MSCI World
Rebalancing frequency	Monthly	Quarterly

Size of individual mandates with exclusion: at least 50Mo, depending on is it a strategy we manage; or is it a bespoke solution
How does the rebalancing work: compute ex-ante correl, individual factor exposure each month then correl
WRC: weighted risk contribution = you see that by applied 25% risk budget in risk contrib - WRC is the general category to which belongs ERC.

MORTGAGE BACKED SECURITIES // STRUCTURED CREDIT

Securitization: at some point in time, the originator of the loan (ex: volkswagen banks selling autoloans) - securitization = entity buys the loans and issues MBS = job of securitization deparment in an Investment Bank.
What has changed since 2008?

- Credit Ratings agencies are more diligent
- Originators are now required to retain a meaningful share of the securities they're selling ("skin in the game")
- Investors base = SIVs, CDOs

Contrarily to many investment funds, BNP PAM never stopped managing ABSs during the crisis - kept

on collecting data, creating a massive hedge in comparison to the others.
Why is ABS still superior to traditional fixed-income assets? Attractive yield premium + flexibility across sectors/regions, + agility across rating grades + diversification away from high yield
BNP Private Debt: 1Bo in MBS. Rest is pointless. **Optim**!

Current State of RoboAdvice (10/2019)

Will be worth about 6bo by 2021. Market entrants: SmartGeld, Deposit Solutions, Oskar, Moneyfarm. Key point: despite extensive marketing activities, the robo advice market is growing less than expected.
Types of customers:

- **Self-directed and self-informed:** use extensive amount of online info, make own selection with 2-5 cheap ETFs - NO ROBO bc distrust best product choice + benefits of automatization perceived as small compared to higher price. Want: Very Low fees
- Affluent Wealthy (high): prefer personal wealth management = often special circumstances & special conditions
- Unexperienced retail customer: prefer standard products = no awareness or bad opinion of banking services

Type of offer:

- Low fee: Quirion
- Hybrid robo with personal advice = scalable capital
- Low fee & Personal Advice: Vanguard, Schwab… "Stuck in the middle"

Average management fee: 50bps- 1%. Industry AUM = 3.5bo. Almost half of the growth comes from Scalable. Big entrants this year: Savedo, zeedo, oskar, moneyfarm...Scalable capital has 2 partners:

- Scalable & BR: received +25mo in funding this year
- Scalable & ING Customers = 60% of Scalable Capital AUM

PORTFOLIO PROBE - TOP 7 PORTFOLIO OPTIMIZATION PROBLEMS

Portfolio optim is too hard on Excel: use R instead (more computational power)
Portfolio optimizers suggests too much trading: set turnover limits or limits to transaction costs
Expected returns are needed: not in mean-var (only needs a var-covar matrix) = explains the success of low volatility investing. Note: active investors have views = have to have expectations, although not necessarily numerical. Alternatives:

- **Target portfolio:** anyone should be able to provide an ideal target portfolio = the portfolio you'd like to hold *when all constraints are ignored*. Once you have it: optimize to get a portfolio close to the target, but also observing your constraints. Common use: optimize to minimize TE to target = only needs variance matrix
- **Reverse optimization/implied alpha**: finding a portfolio that *looks like what you want in terms of expected returns* = avoids optim but labor intensive + depends on the constraints of not spoiling theimplied alphas.
- Asset ranks: you only rank the assets of your universe in terms of expected returns - then Almgren & Chriss shown that you can turn rank into numerical expected returns (qnorm on R) then scale them to match the variance matrix.
- **Mean-var optim is restrictive**: NO. Mean-var isn't only useful when returns are normally distributed - on the contrary, if returns are normally distributed, then mean-var is all that can be done. Case where mean-var is the best: if universe is just stocks. Possible addition = factor in skewness and kurtosis. BUT: skewness virtually impossible to predict, kurtosis also difficult.

When to use	EQUITY-ONLY PORTFOLIO: mean-var
	MULTI ASSETS: scenario optimization

Portfolio optimization inputs are noisy estimates: the optimizer gives results according to the input variance matrix. De facto: *estimates of expected returns are almost total noise* / estimates of the

variance matrix are quite noisy. Solutions: feed factor models of variance (much better than sample variance matrices for large universes) or use a shrinkage estimate. REMEMBER: optimization doesn't really optimize the portfolio, it optimizes the trade. Solutions:

- **Black Litterman type operations:** if done intelligently, reduces the noise in expected returns
- **Robust optim:** many methods, all quite complicated
- **Shrinking**: based on the idea that inputs are somewhere between exactly true and complete garbage, so that trade should be somewhere between suggested trade and nothing at all. Shrink the trade by imposing stronger turnover constraints or increase tcosts.

Tcosts are tricky: market impact is hard to estimate + either the tcosts need to be scaled to match expected returns/var or reciprocally. All 3 (expected returns + var + tcosts) appear in the utility function. Solution: use an optimizer that allows flexibnle specification of costs.
Risk & Alpha Factor alignment trouble: if there are factors used in the expected returns that are not factors in the risk model, then the optimizer will think those factors are essentially riskless and use them too much. Solution: add the missing factors to the risk model (assuming there are factors in the expected returns model) or, think that factor models are the wrong technology to use as the variance matrix in optimizers = use Ledoit Wolf estimates to shrink back towards equal correlation.
Constraints get in the way: invisible problem as most people don't check after the optim whether constraints are respected. Solution: check the constraints.

FACTORS MODELS OF VARIANCE IN FINANCE (Portfolio Probe)

https://www.portfolioprobe.com/2011/03/07/factor-models-of-variance-in-finance

4 types of variance estimates that can be used in finance:

→ Sample estimate
→ Factor models: says there is some number of drivers of the returns of the plus some idiosyncratic risk not associated with the drivers. Each asset has its own set of sensitivies to the factors. In a matrix notation, a factor model is like: ***V = B'FB +*** D where V = matrix of number of assets * nb of assets, B = line vector of sensitivities of size number-of-factors by number of assets; D diagonal matrix of idiosyncratic variance of the asset.
→ Shrinkage estimate: ledoit & wolfe (or others)
→ Dynamic

Why use factor models? 1/ Ensure the estimate is positive define (if not positive definite, then there are one or more portfolios with zero estimated risk = doesn't exist in reality + fucks up the optimizer) 2/ Reduce noise (bc 2000 assets = 2Mo values inside correl + if you have 2years of data only, then you only have 1mo numbers int he dset….). Example of factor models = CAPM.
Types of factor models:

- ***Fundamental*** = use cross-sectional regression (= observe multiple assets at one point in time)
- ***Macro*** = use time series regression (pick one asset and observations are the history returns for the asset, and the factors). Estimation: using OLS or robust regressions like Huber-M estimates (light robust) to be tested to one sample. Pick your factors right: think of proper country / industry breakdown (sensitivities only to one industry or several?) + weighting of observations (linearly decreasing or exponentially decreasing weights?) + selection of relevant factors (statistically significant level)
- ***Statistical models:*** using implicit factors = eigenvectors of your correlatrion matrix. Beware: too few factors = you're missing ou on systematic risk // too many = you're adding noise.

Operational classification:

- Factors estimated, sensitivies known
- Factors known, sensitivities estimated
- Factors & sensitivities estimated

How to choose between cross-sectional and time series regressions? Consider what do you know and what is relatively constant = if you want to use IR or oil prices, you know the history of factors - then you assume that the sensitivity of an asset to those factors is basically inherent & stable = time regression makes sense. If sensitivites are not static (they're market driven) then cross-sectional

regressions make sense.

- Dealing with missing values: varcovar matrix should theoretically only be based on series where we have data ; but in financ its common demand (e.g. including estimates of trading prices of companies before they go public…)

Testing your models

- Pick a time point in the past
- Generate a set of random portfolios that ave the constraints you care about
- For each model and each random port, get predicted vol
- For each random port, find realized vol
- For each model, calculate the correl between predicted/realized (spearman's!)
- Beware: if you've got fewer observations/periods than variables, the result is going to be noisy af.

SCENARIO OPTIMIZATION (The portfolio probe)

Mean-var assumes symmetry and 1-period future = need not be normal, symmetry is enough to justify it. Holds well enough for equity portfolios. Doesn't hold when port contains options...Decisions to make:

- What utility
- What scenarios:
    - Historical: you need a matrix of historical prices times and assets in the columns /
- What constraints should they obey

IMPLIED ALPHA (Almost Wordless)

Usual optim: enter risk aversion + var-covar matrix + expected returns > optimize > get weights
Reverse optim: if we k now the current weight of our existing portfolio, we can estimate the expected returns ("implied alphas"); the figures are not necessarily relevant but **the ordering is** and should fit our view. "The reverse optimization process results from a trivial derivation. Trivial, that is, if you know multivariate calculus. Note that changing the risk aversion only change the scale of the implied alphas up or down. What you can additionally do:

- Reverse engineer while maximizing the information ratio is NOT trivial
- Reverse engineers with constraints is NOT trivial: turnover constraints = views on assets may change faster than turnover allows changes in the portfolio = implied alphas may reflect past views more than current views.

Opinions on the usefulness of the implied alpha range from "moderatzly interesting" to "should be standard procedure." How is it computed de facto:

Computation

If w is the vector of weights for the portfolio and V is the variance matrix, then the implied alphas are:

$$cVw$$

for whatever positive value of c you like.

The assumption is that you are maximizing mean-variance utility, which is:

$$a'w - cw'Vw$$

where c is the risk aversion (but some people have a division by 2).

In calculus you can find a maximum by taking the derivative of a function and setting it to zero. If w were a scalar rather than a vector, we would have:

$$aw - cVw^2$$

Taking the derivative with respect to w and setting it to zero gives us:

$$a - 2cVw = 0$$

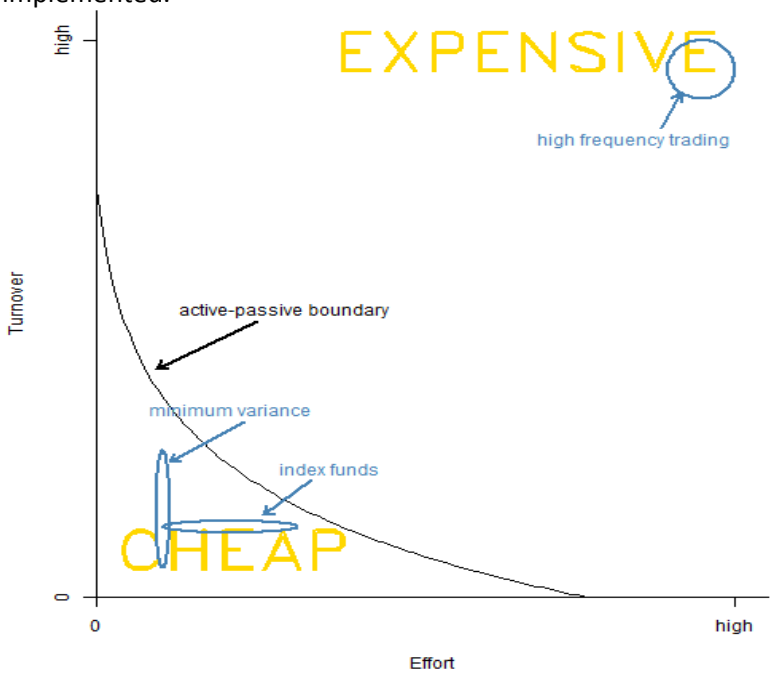
It turns out that the analogous calculation works for vectors. (That there is a 2 in this formula is sort of why some people divide by 2 in the utility formula.)

- Note that all correlations are positive and the portfolio is long only, then all numbers arer positive and the implied alphas will be positive.
- Consider the implied alpha for the first asset. It is the weight of the first asset times the variance of the first asset plus the sum of the covariances of the first asset with all the other assets times the respective weights.Relatively big implied alphas are those that have large weights on large variances and covariances = riskiest positions.

THE BACKTESTING TALK

http://www.burns-stat.com/pages/Finance/effective_backtesting_annotated.pdf

On Smart Beta (The portfolio Probe, 2013)
SB = alternative beta, new beta, advanced beta, enhanced beta, beta plus. Also associated with "passive investing". SB is an attempt to be passive yet remain some advantage of being active: "smart beta seems like a replay of simple quant strategies of the past when not carefully implemented."



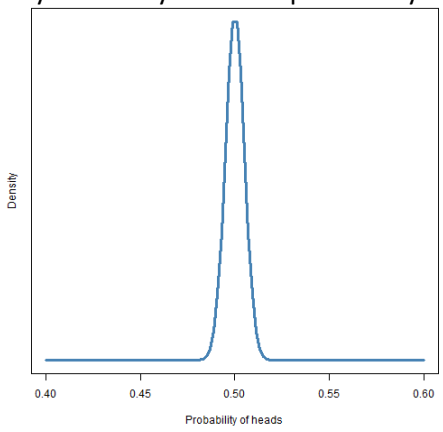
Key component of smart beta: fundamental indices. SB Aim = get good results with little decision-making effort ("dumb alpha") = based on a single, constant factor (like naïve quant strategies)

- Performance: major caveat: single-factor strats are s subject to extended underperformance (because markets are dynamic).
- Turnover: higher then it should be with pure single-factor strats since smart beta follow indices.

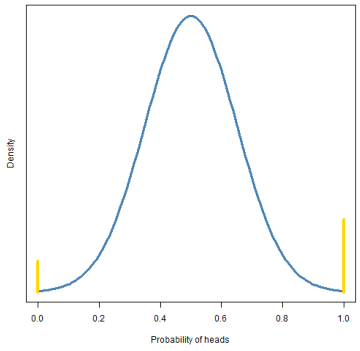
Alternative Equity Indices and Random Portfolio (The Portfolio Probe, 2013)
Cap-weighted isn't the market: either largely outperformed or largely underperformed by random portfolios) -- the only constraints being all pos weights + sum = 1.

A look at Bayesian statistics (The portfolio Probe, 2012)
Division of statistical philosophies between:

- Frequentist estimator: when flipping a coin, the they say that there's no way to tell what's the proba of being heads (there's no data). After flipping the coin: the frequentist estimator has a point estimate of 53% with a 95% confidence interval that goes from 43% to 63%.
- Frequentist tester: hypothesize that perobability is one half, then say there is no evidence to reject that hypothesis
- Bayesian : says that the probability has a distribution centered on 0.5 and is close to it.



- A smarter Bayesian takes into account whose pocket the coin is in, and say the distribution is more like:



Bc coin could be two headed, two tailed, could be bent. Note that those are prior disributions. In a nutshell: bayesian guys estimate the proba distribution of smth, while testers test and estimators give confidence intervals.

Factor models of variance /// ALTERNATIVE TO SHRINKAGE
https://www.portfolioprobe.com/2011/03/07/factor-models-of-variance-in-finance/

[Notes: what does capm do in highly volatile periods: in the covar, all covar increase = all values but diagonal)

########## Mettre l'ISIN de la société - dans Isin check
######### Rajouter les fonds de JB
######### Add les fonds de JB + 99-100% d'expo dans de l'équity
#########
_____
PORTFOLIO ALLOCATION METHODS
Robust portfolio optimization method:

- Mean-Var optim
- Sleeves & glide path
- Quadratiic optimizer:
- Variants of Black Litterman
- Naïve risk parity
- MC with perturbations
- Meucci's tehcniques
- Bootstrapping

Let's get started.