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Global Research & Perspectives

18th December 2018, Daniel J. Want

Under-appreciated Global Financial System Dynamics…

www.prerequisite.com.au/research

Disclaimer

General Information

Contents:

[Theoretical CONTEXT]

Context…

Daniel Aronson (www.thinking.net):

*"The approach of **systems thinking** is fundamentally different from that of traditional forms of analysis. Traditional analysis focuses on the separating the individual pieces of what is being studied; in fact, the word "analysis" actually comes from the root meaning "to break into constituent parts." Systems thinking, in contrast, focuses on how the thing being studied interacts with the other constituents of the system – a set of elements that interact to produce behaviour – of which it is part.*

"This means that instead of isolating smaller and smaller parts of the system being studied, systems thinking works by expanding its view to take into account larger and larger numbers of interactions as an issue is being studied. This results in sometimes strikingly different conclusions than those generated by traditional forms of analysis, especially when what is being studied is dynamically complex or has a great deal of feedback from other sources, internal or external."

Context…

"Complex systems are networks made of a number of components that interact with each other, typically in a nonlinear fashion. Complex systems may arise and evolve through self-organization, such that they are neither completely regular nor completely random, permitting the development of emergent behaviour… Many real-world systems can be understood as complex systems, where critically important information resides in the relationships between the parts and not necessarily within the parts themselves."

…Hiroki Sayama, D.Sc.

"Complex systems analysis goes beyond the reductionist approach of breaking complicated phenomena into simple variables; new properties and behaviours evolve from the interactions between individual components."

…B. Pourbohloula & M.P. Kieny (W.H.O. Bulletin, 1st Apr 2011)

"One reason that risk premiums may be low is precisely because the environment is less risky... The Fed has long focused on ensuring that banks hold adequate capital and that they carefully monitor and manage risks. As a consequence, banks are well-positioned to weather the financial turmoil."

...Janet Yellen, July-September 2007

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The Current Predicament…

1. Presently what we have in the world is a condition wherein **the global banking & financial system has grown to such an excess *that it is increasingly starting to strain under its own weight*** (with issues pertaining to OTC Derivatives, Off-Balance Sheet funding structures, wholesale/Eurodollar liquidity creation, maturity miss-matches and forms of collateral-backed liquidity creation in the context of a *more indebted* world that makes the pre-2008 financial-crisis world look almost desirable by comparison).

2. Ironically, when most investors study the top 15 global banks in the world *'in isolation'* of the interrelationships and issues that arise when you take a *broader* look at the complex global system – you will hear them mistakenly talk about the improved 'capital' positions of these banks, thereby implying the relative 'safety' or strength of the banks globally.

3. However, when you step back and *"take into account larger and larger numbers of interactions as an issue is being studied. [...You are led to] strikingly different conclusions than those generated by traditional forms of analysis"* (see D. Aronson quote on slide 3)... you start to realize that the banking and financial system globally is *more* (not less) fragile than it was in 2007.

4. At the same time we have seen *globally* a decisive deterioration of (in substance) **'high quality' assets and collateral**... dysfunctional liquidity conditions (money & credit) nevertheless is still out-pacing a shrinking 'quality' asset base – people also mischaracterize this issue as a 'currency' problem – forgetting that the ultimate definition of currency at a first principles basis derives from 'unencumbered productive private enterprise'. In a world awash with excessive levels of debt and debt-like structures (requiring increasing government intervention to sustain), little wonder that *productive private enterprise* is progressively becoming more and more 'strained' whilst *overcapacity* is continually being sustained.

General Headwinds for Global Banks…

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- Central Bank policy globally that favours capital market funding vs. bank loan/originated funding
- **Pressures on Net interest income and margins both from a low-interest rate environment and also a compressed credit spread environment**
- Prospective issues re: demand for loans – i.e. an overindebted system that is pulling too much demand forward. Issues regarding the saturation of debt vs. activity growth.
- Increased occurrences of zombie firms so tendency for economy wide slowing of Return on Capital growth and the escalation of future non-performing loan issues.
- **Moral hazard rewarding excessive risk taking vs. prudent bank operations (i.e. OTC and off-balance sheet activity/insanity)**
- Increased weaponization of finance (particularly spearheaded by the USA)
- Increased regulatory scrutiny and requirements
- The environment that incentivises bank consolidation – creating banks that are not only 'too big to fail', but essentially 'too big to manage'.
- Increased tax revenue-raising pressures (i.e. the hunt for taxes) by Governments around the world
- Both threats and opportunities to the banks due to technological advancement

Essentially, the returns to traditional banking activities (i.e. lending etc) are falling at the same time as required capital is increasing to back-stop traditional banking activities... this is resulting in both revenue and falling Return on Capital pressures.

One way bankers have been able to alleviate these headwinds to their earnings has been to sustain and escalate Over The Counter (OTC) Derivative and Off-Balance-Sheet activities. OTC Derivative transactions notoriously have minimal balance sheet impact and because they're basically recorded as full or partial securities 'sales', they fall mostly to the bottom-line... thus increasing the nominal profitability of the banks but at great future-risk from a total-system perspective.

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Basic Definitions & Assumptions…

Glossary (www.BIS.org):

- **Notional Amount Outstanding:** Gross nominal or notional value of all derivatives contracts concluded and not yet settled on the reporting date.
- **Gross Market Value:** Sum of the absolute values of all outstanding derivatives contracts with either positive or negative replacement values evaluated at market prices prevailing on the reporting date. The term "gross" indicates that contracts with positive and negative replacement values with the same counterparty are not netted. Nor are the sums of positive and negative contract values [netted] within a market risk category... Gross market values supply information about the potential scale of market risk in derivatives transactions and of the associated financial risk transfer taking place. Furthermore, gross market value provides a measure of economic significance that is readily comparable across markets and products.
- **Gross Credit Exposure:** Gross market value minus amounts netted with the same counterparty across all risk categories under legally enforceable bilateral netting agreements. Gross credit exposure provides a measure of exposure to counterparty credit risk (before collateral).

KEY: From a "Systems Analysis Perspective"… ***between sub-systems (i.e. individual participants) derivatives serve to transfer, manage and even defray 'risk'.*** [For isolated participants you typically look at *Netted* exposure amounts relative to your balance sheet (with a second glance at counterparty risks which if centrally cleared, usually become less). Some of these netting assumptions are becoming a little 'problematic' in a world falling apart (i.e. protectionist sentiments rising) with jurisdictional issues rising.]

However, for the aggregated system as a whole, the 'risk' remains and is even amplified. [Because individual subsystems think they're better managing risk, and in combination with the moral-hazard that exists in the global system (& everyone using narrow volatility/VAR type definitions of 'risk'), in aggregate they take on more risk as a system (a borderline 'fallacy of composition' dynamic).]

Being involved in derivatives requires some degree of provisioning of available balance sheet capacity (which in this presentation we'll refer simplistically to as *'margining'*) just to play the game, even if you end up a net winner - so looking at ***Gross Market Value*** helps us to glimpse the resources tied up in the TOTAL financial SYSTEM or 'at risk' relative to movements in financial markets or possible counterparty credit risk issues. These Gross Market Values roughly reflect the cash, collateral and/or balance sheet capacity exposed to market risk.

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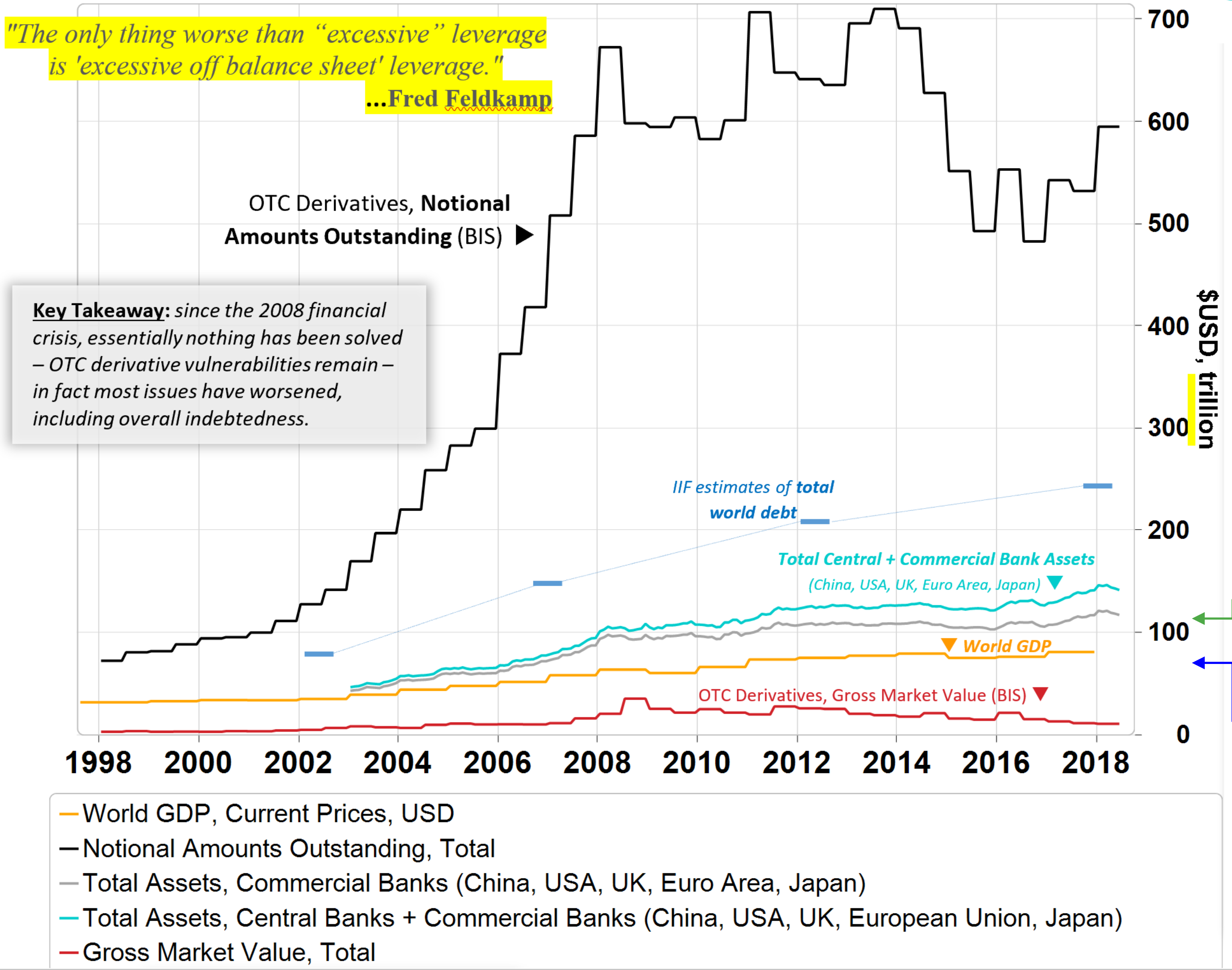
"The idea that derivatives are not a source of systemic risk because the open ['netted'] position may seem small is one of the great misconceptions about derivatives. Derivatives fund nothing, but serve to shift exposures from one party to another and work through margins (collateral), yet they carry all the bankruptcy characteristics of debt for the out-of-the-money party. A sudden move in volatility can shift the Gross Market Value quickly, and netting provides no protection for this. Netting is about settlement amounts using prices at the point of close out. Netting does not protect any financial firm from market risk.

'The business models of large interconnected banks and the lessons of the financial crisis',
July 2012, by Adrian Blundell-Wignall, Paul E. Atkinson and Caroline Roulet

[Financial Aggregates CONTEXT]

Financial Aggregates

Context…

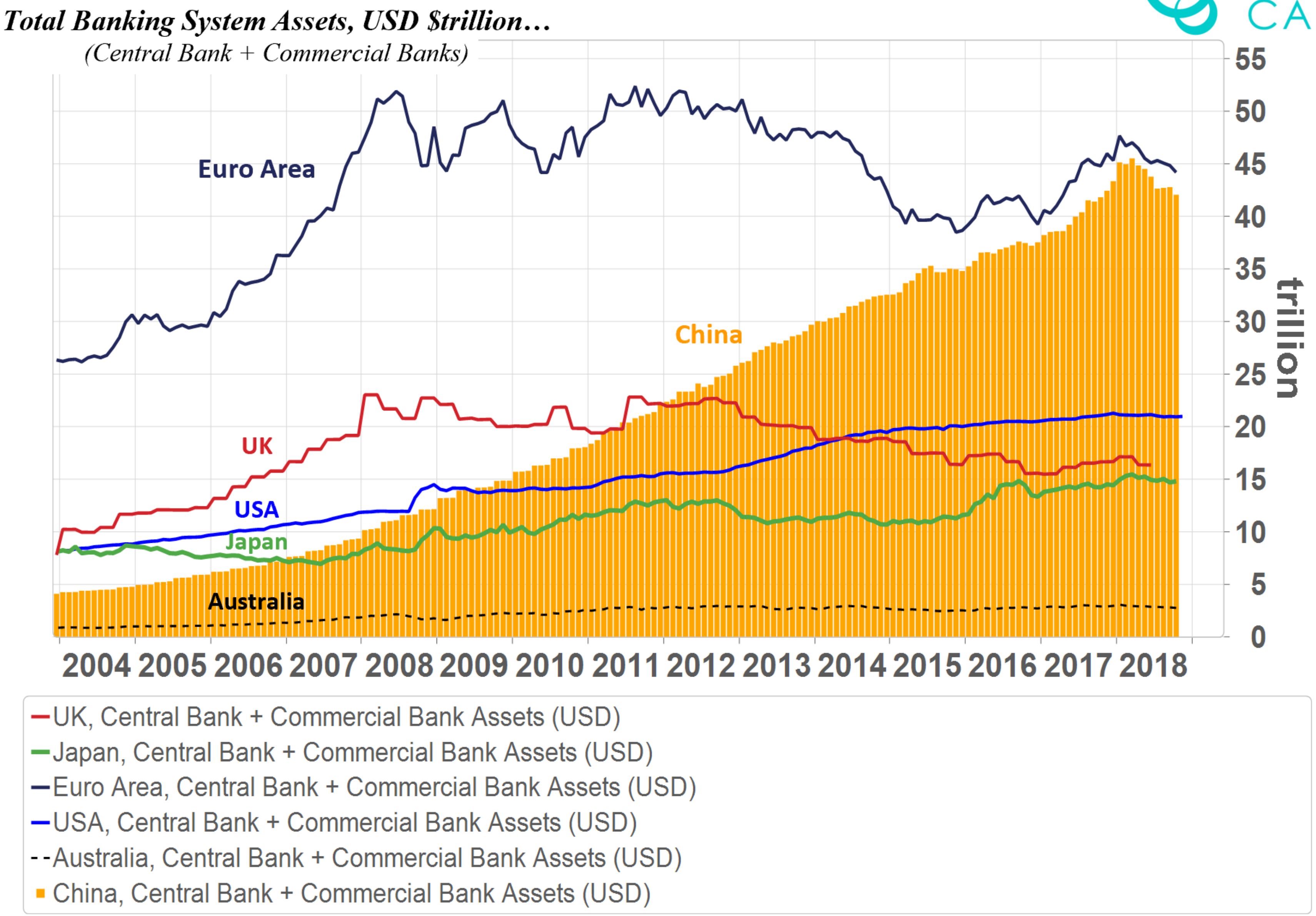


World Market Capitalisation of:

- Bond Markets: *circa $100-110 trillion*
- Equity Markets: *circa $70 trillion*

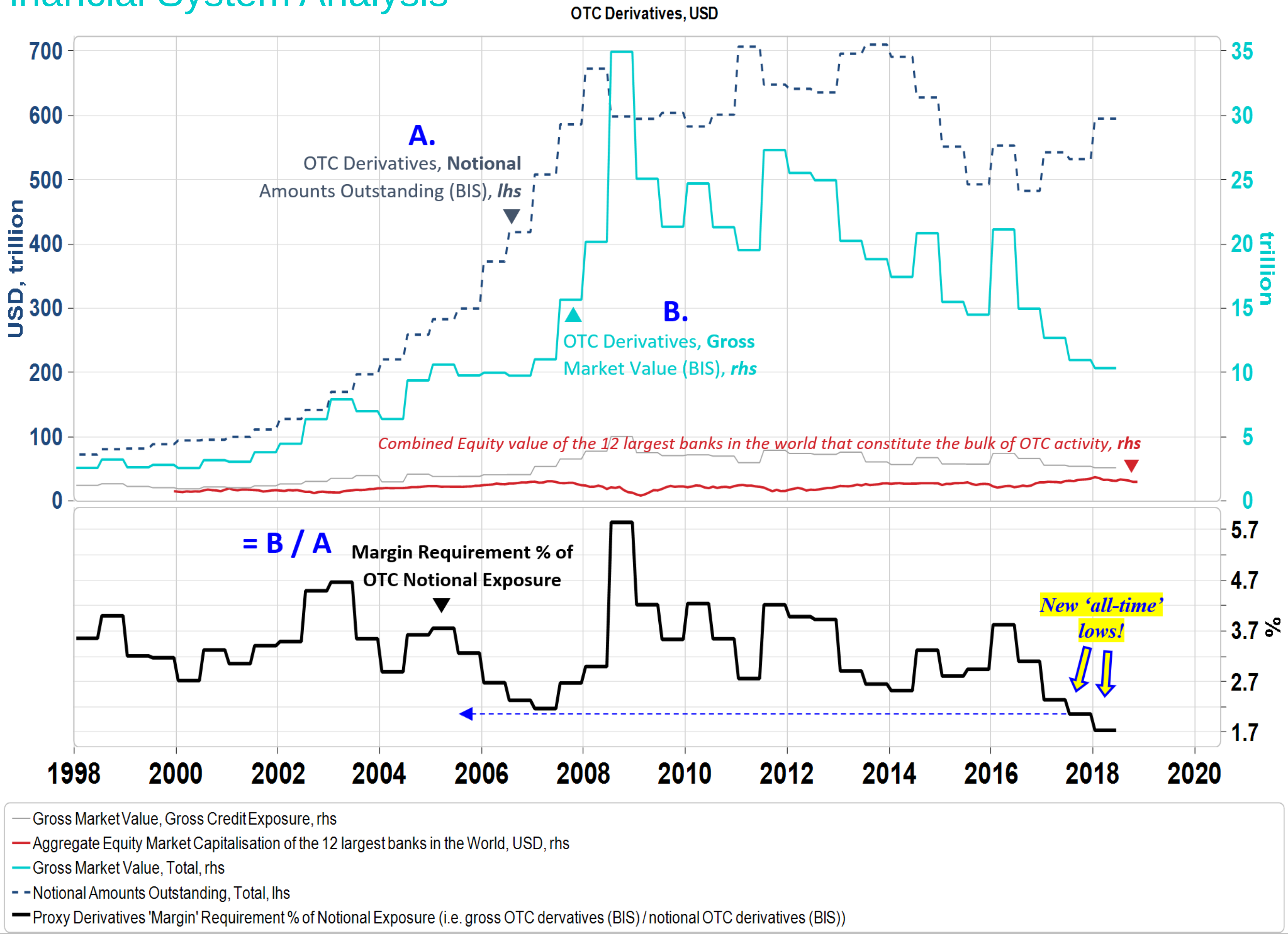
Financial Aggregates

Context…



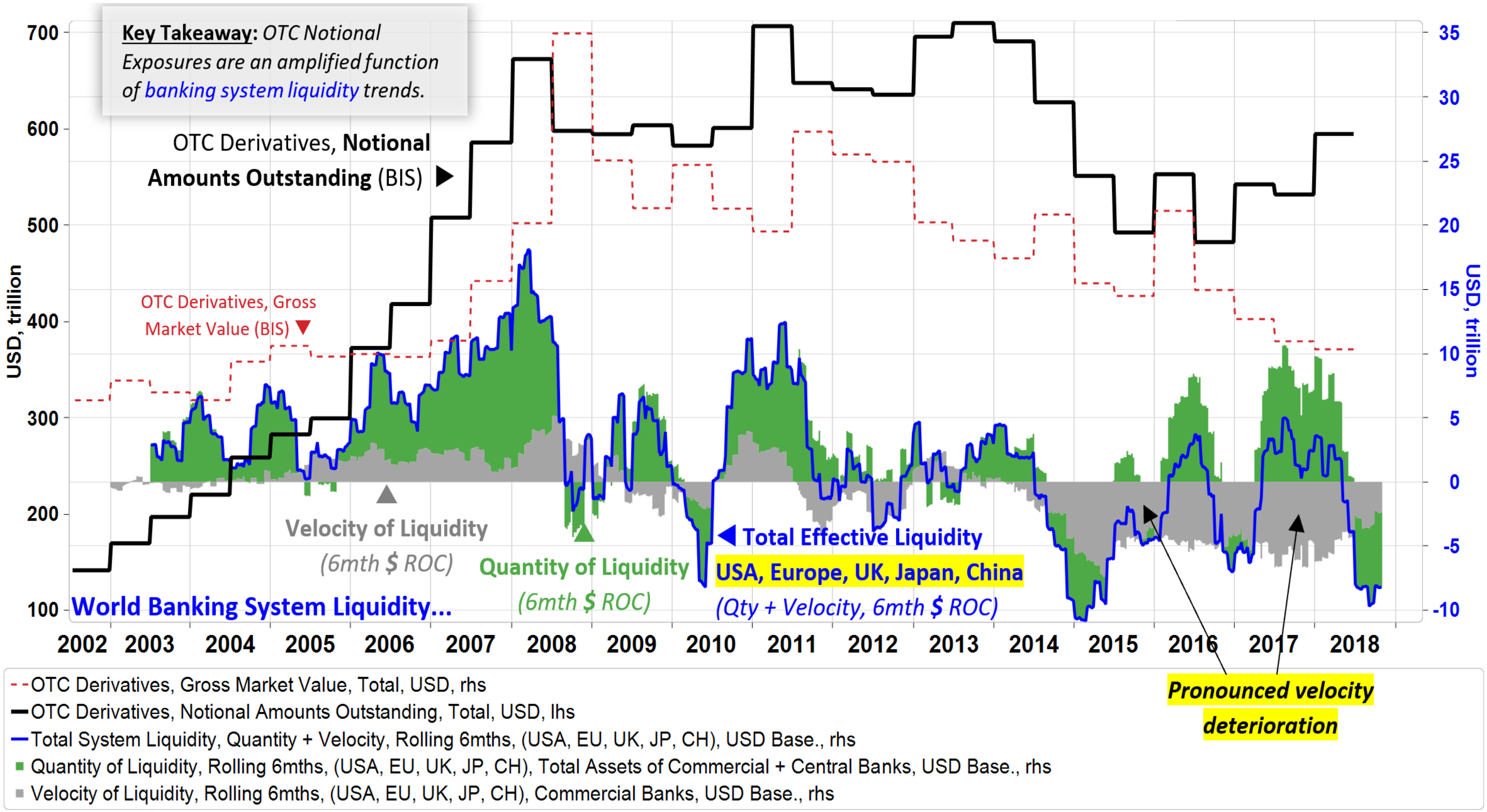
[Financial System ANALYSIS]

Financial System Analysis



From a 'systems' perspective, we can *approximate* the balance sheet capacity – ie. *loosely* referred to from here on as **'margin'** (comprising cash/collateral/capital) – that is exposed to market movements (risk) and is required to underpin the Notional Derivative load in the world.

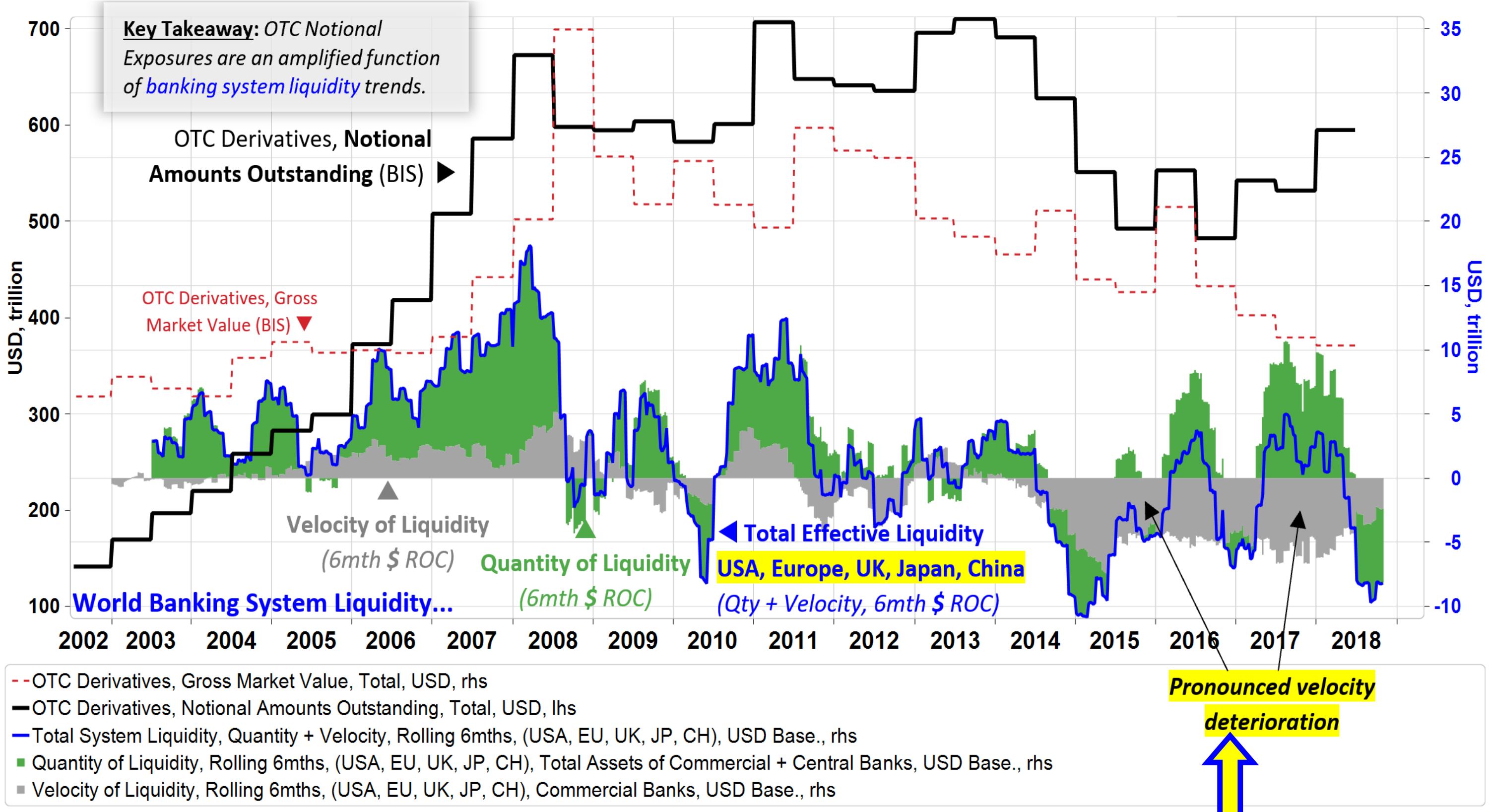
[Note: 'Yes', we are aware of things like multilateral netting, trade compression effects & the gradual migration of the OTC Derivative world towards centralised clearing etc – these are all important developments, but from our perspective we find they are unable to explain the bulk of the material dynamics influencing these aggregates… especially the patterning around the relationships of these aggregates to other parts of the broader system.]



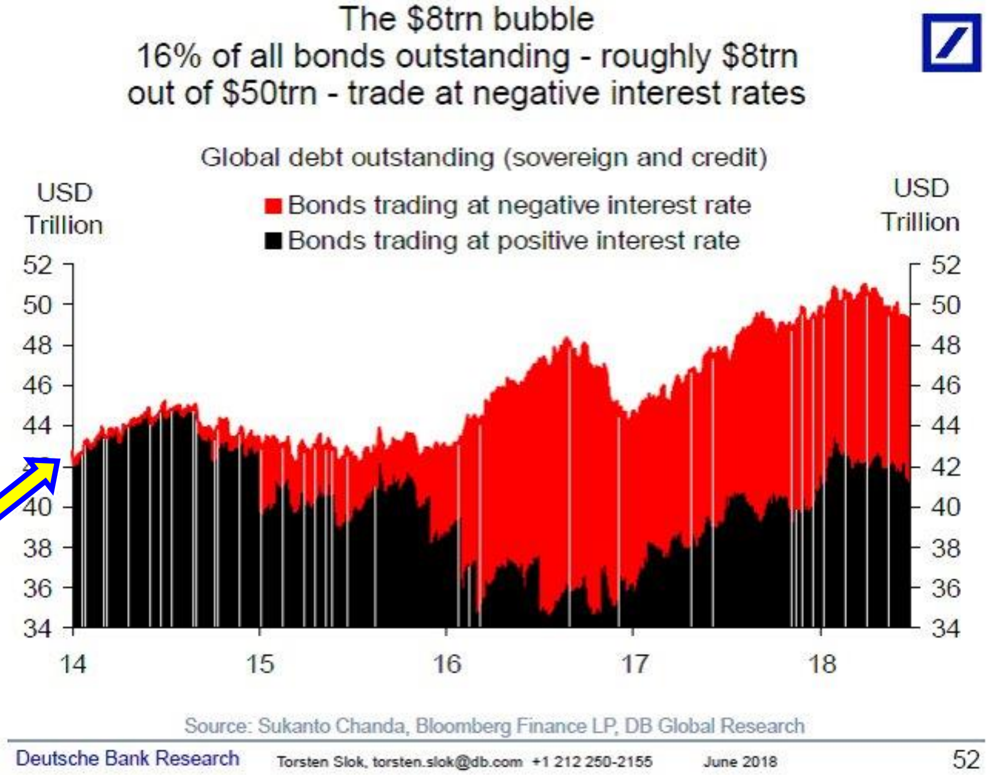
The value of notional OTC Derivative exposures is largely determined by the marginal liquidity creation of the world's central & commercial banking systems. *This can be seen in the chart to the left...*

Essentially, as bank-driven liquidity increases so too do global OTC parties increase their use of *OTC Notional* exposures (you can see this by comparing the *black* and *blue* lines in the chart).

The liquidity model *includes* central bank activity in the quantity values – this is important to note as it is principally the non-central bank *velocity* of liquidity (a form of a private system confidence measure) that explains the fall in the *OTC Notional* exposures from 2014 to present.

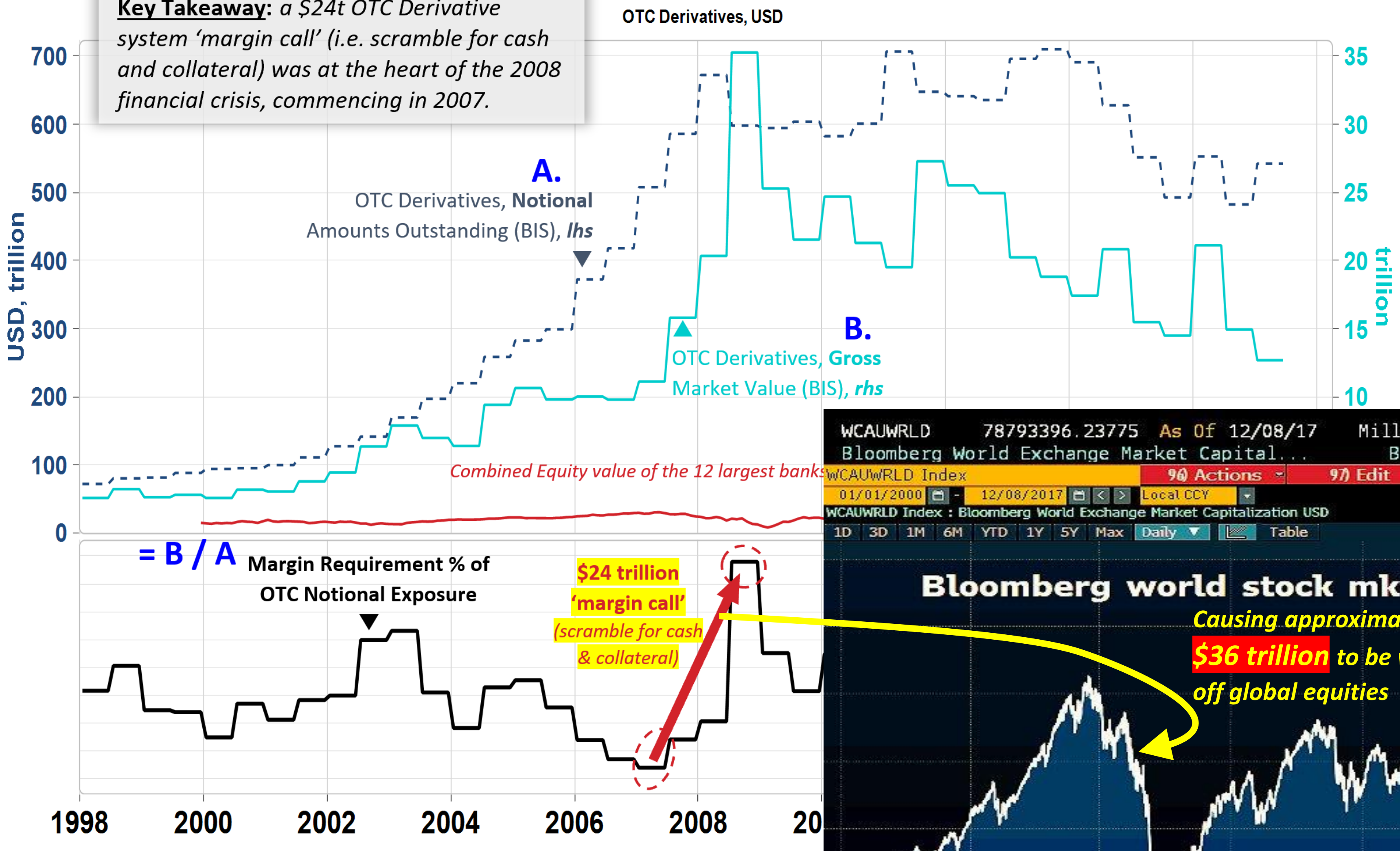


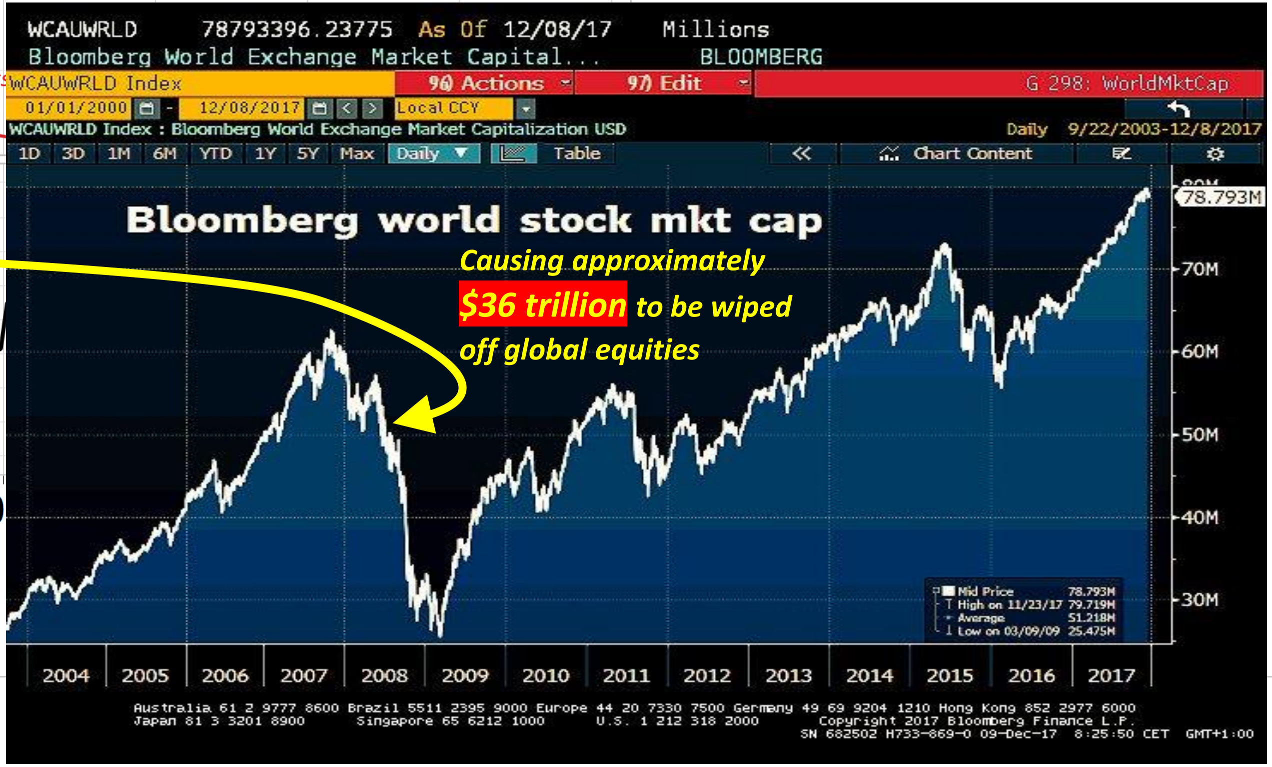
This also is not a coincidence… ***in 2014 our Banking System Velocity metrics decisively deteriorated***, so too did we start to see <u>negative yields start to appear in bond markets around the world</u>…



Financial System Analysis

Key Takeaway: *a $24t OTC Derivative system 'margin call' (i.e. scramble for cash and collateral) was at the heart of the 2008 financial crisis, commencing in 2007.*



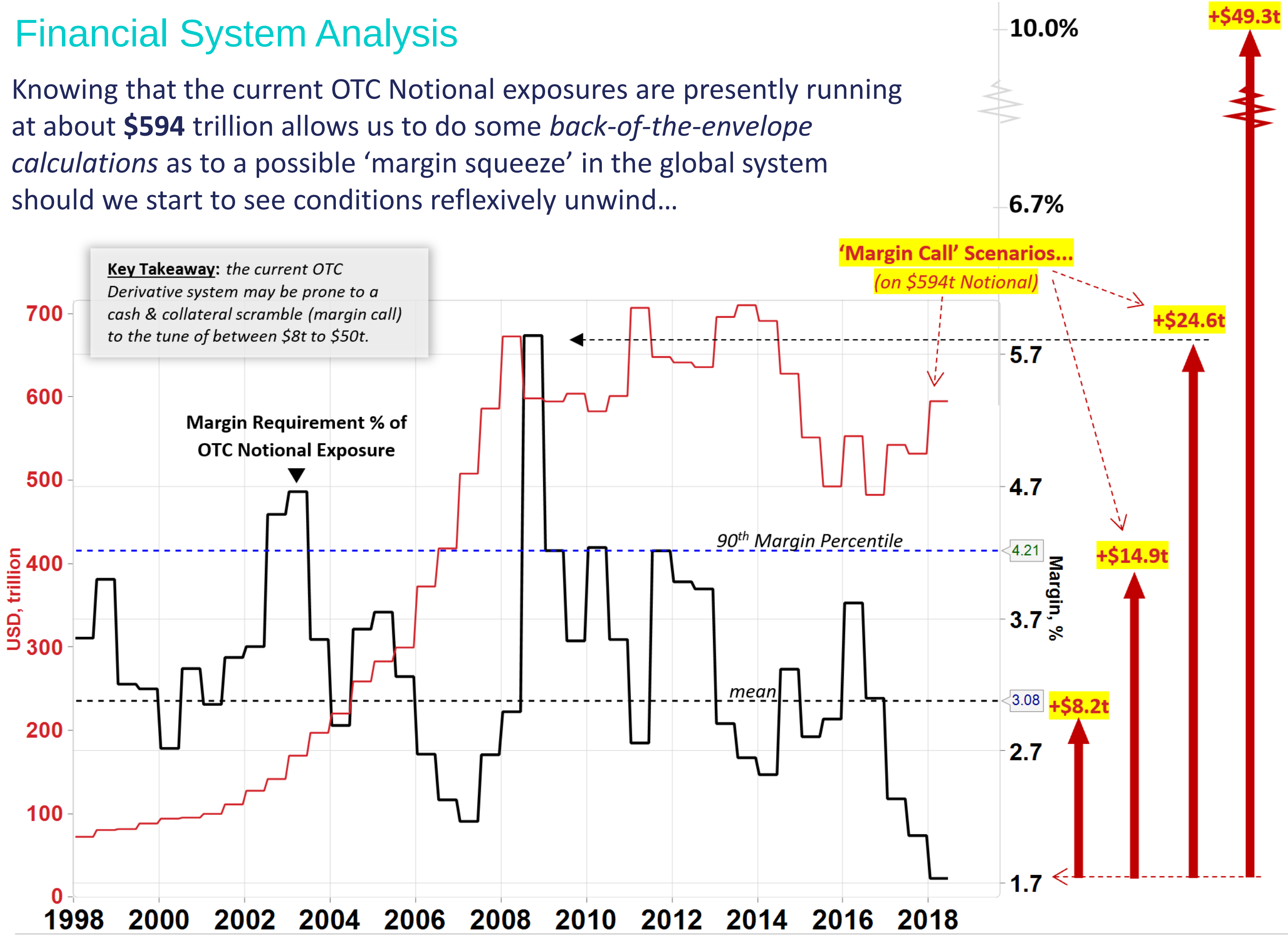


We can now start to get a sense for the $ magnitudes of what is happening here. We know the magnitudes of OTC Notional and Gross exposures, so we can literally calculate ***the $$ size of the system-wide 'margin call' for 2008...***

Financial System Analysis

Knowing that the current OTC Notional exposures are presently running at about **$594** trillion allows us to do some *back-of-the-envelope calculations* as to a possible 'margin squeeze' in the global system should we start to see conditions reflexively unwind…

Key Takeaway: *the current OTC Derivative system may be prone to a cash & collateral scramble (margin call) to the tune of between $8t to $50t.*



With the total global bond market capitalized at roughly $100t, global stocks capitalized at $70t, global GDP at $80t… all sitting upon the 'rocket fuel' of circa $247t in global debt (an increasing proportion of which being non-productive) with tens of $trillions (at least) in short-term funding structures that carry roll-over risks, and further tens of $trillions that are structurally short USDs… a $8t to $50t+ margin call (scramble for cash and collateral) in the global financial system has the serious potential to reflexively reinforce on itself.

Comparatively speaking, the circa $22+ trillion US Treasury market is miniscule and likely to be one of the biggest beneficiaries of such a margin squeeze should it unfold.

Central Banks would need to commence afresh new programs to cushion this blow, and they will be reactive (not proactive) to the margin call as it unfolds.

The Federal Reserve's balance sheet currently stands at circa $4t and they're likely to be caught wrong-footed, even if they were to double or triple their current balance sheet within the 12 months of the 'margin call', they would still not be able to overwhelm the demand for US Dollars/liquidity that the globalized financial system would have.

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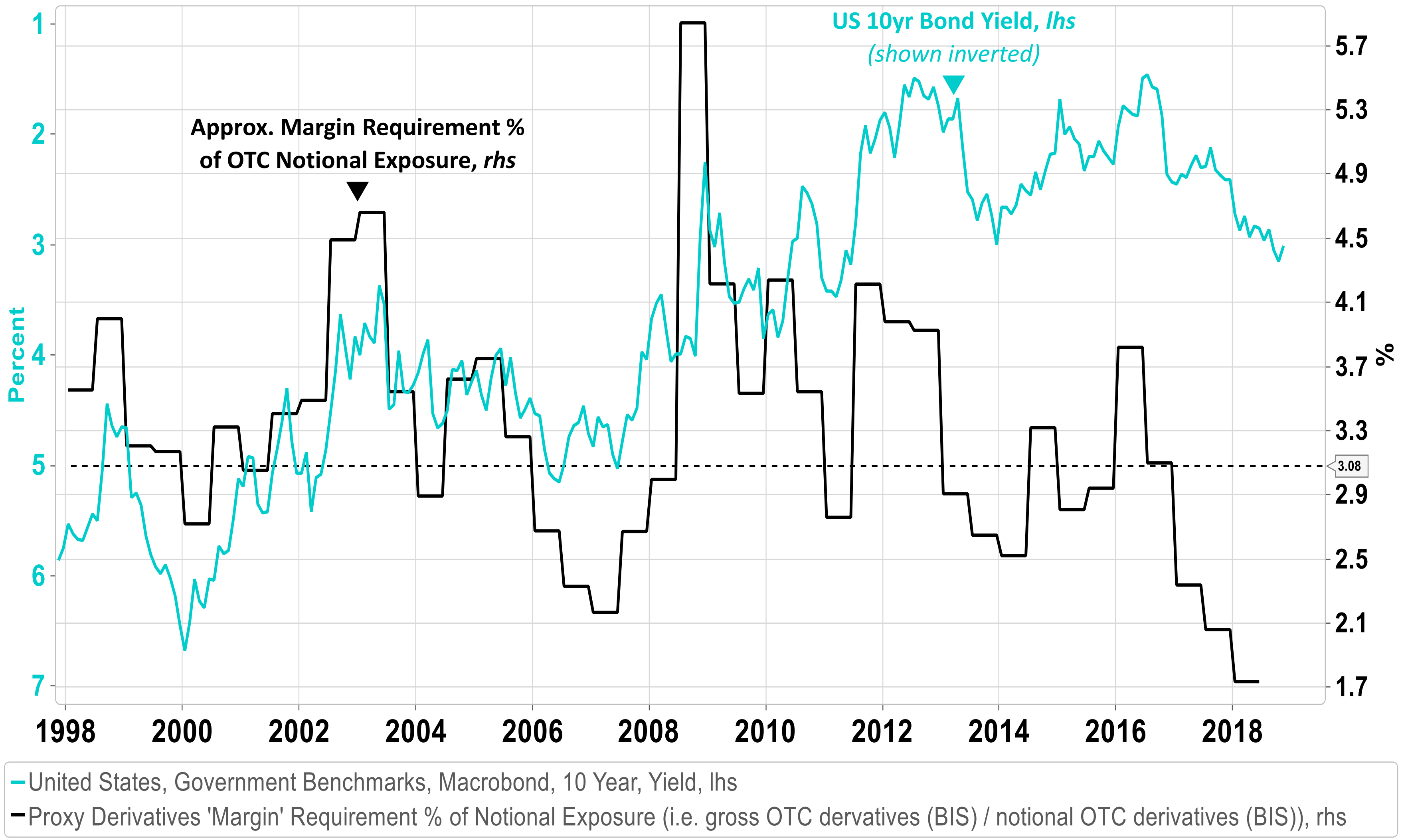

Approx. 47% of the $594 trillion in Derivatives are denominated in USD.

Margins (in this system-wide perspective) are essentially the 'cash and collateral' required to be allocated to support the notional OTC requirements.

US Treasury Bonds are essentially *'collateralized'* future USD currency... so there is no coincidence that US Treasuries are extremely correlated to the approx. margin requirements in the OTC derivatives world...

In the present regime, the fluctuations in this system-wide margin requirement constitute arguably one of the single biggest sources of demand for US Treasury Securities – a fact that is lost on many participants.

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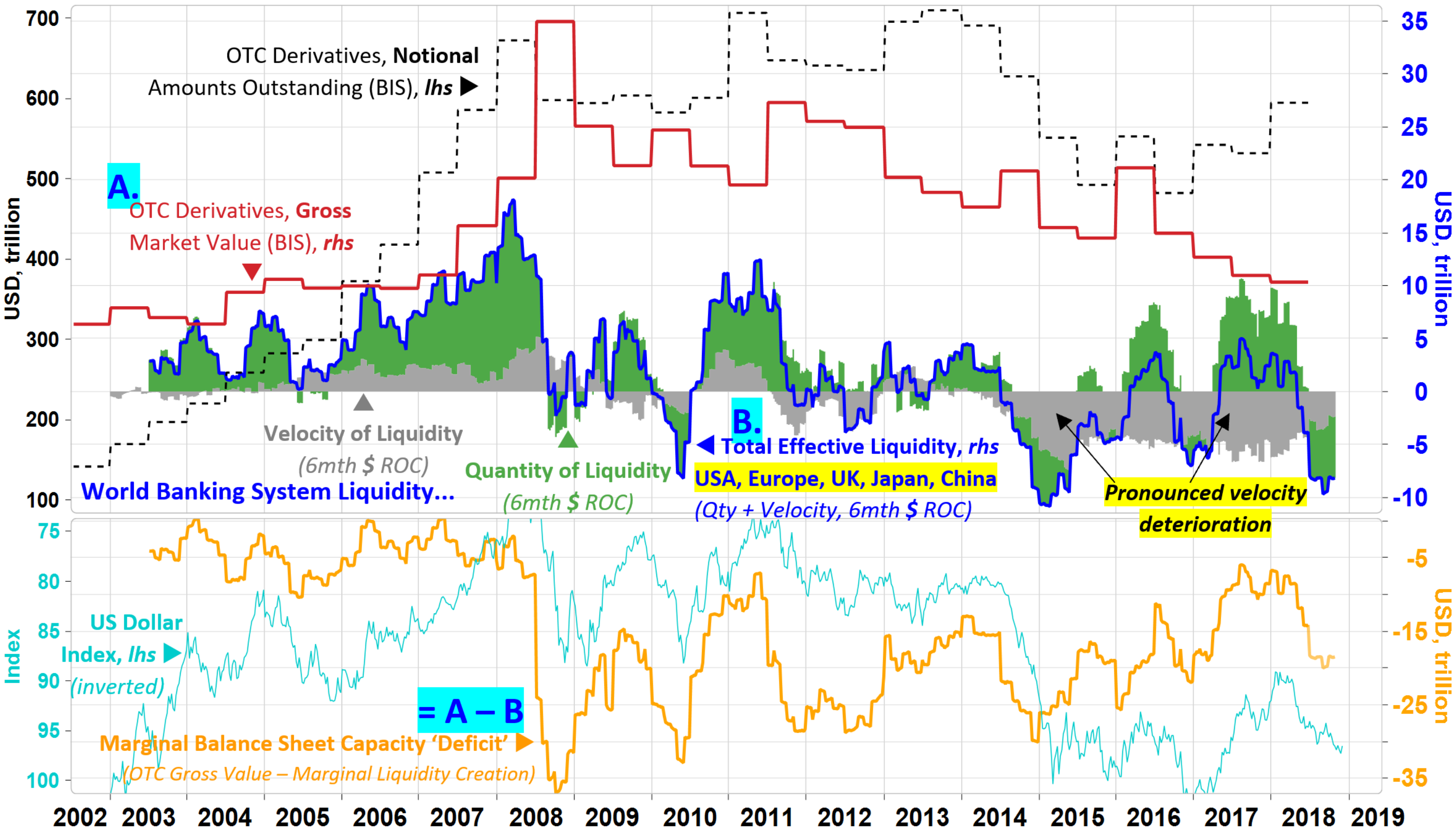
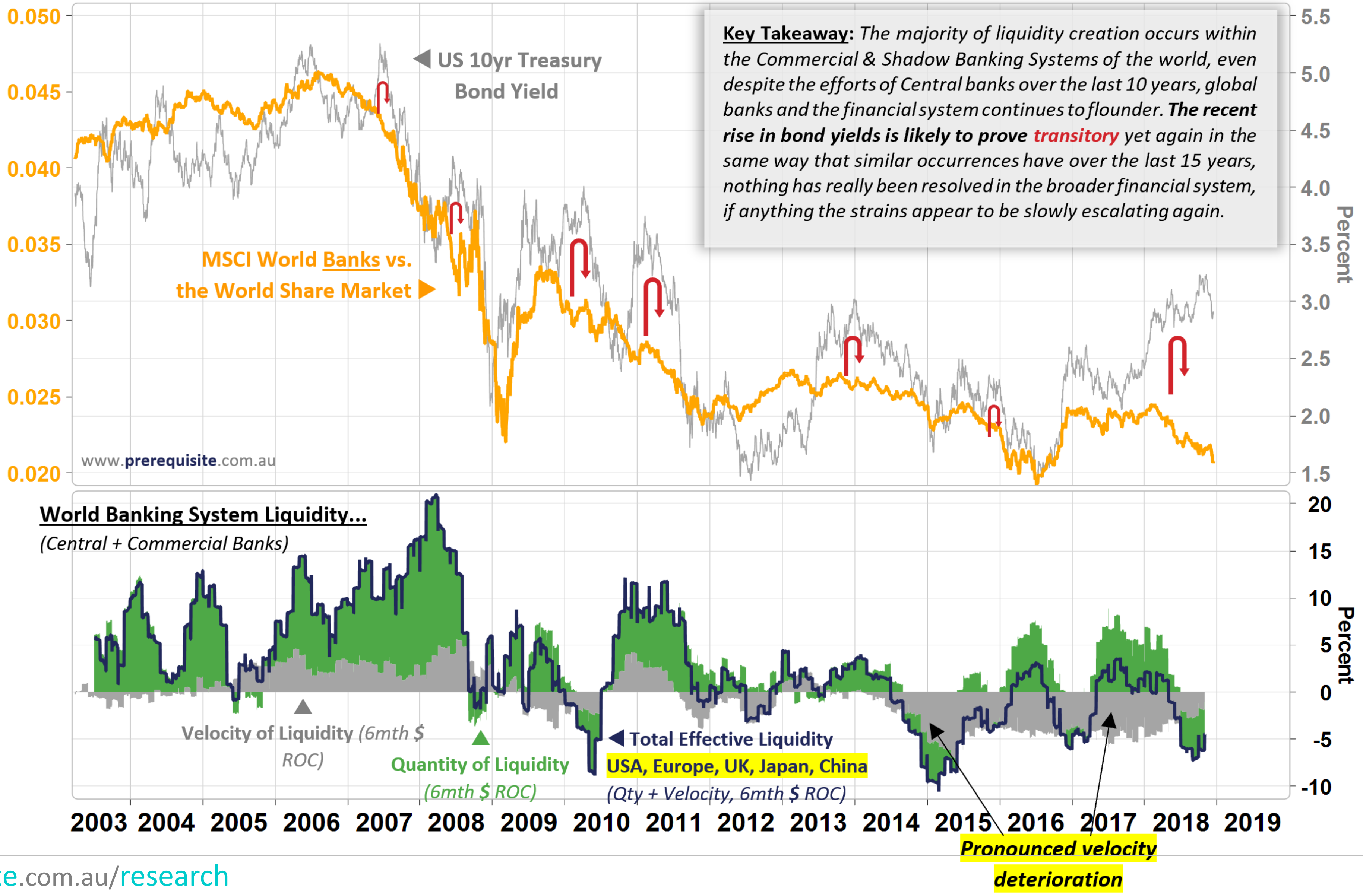


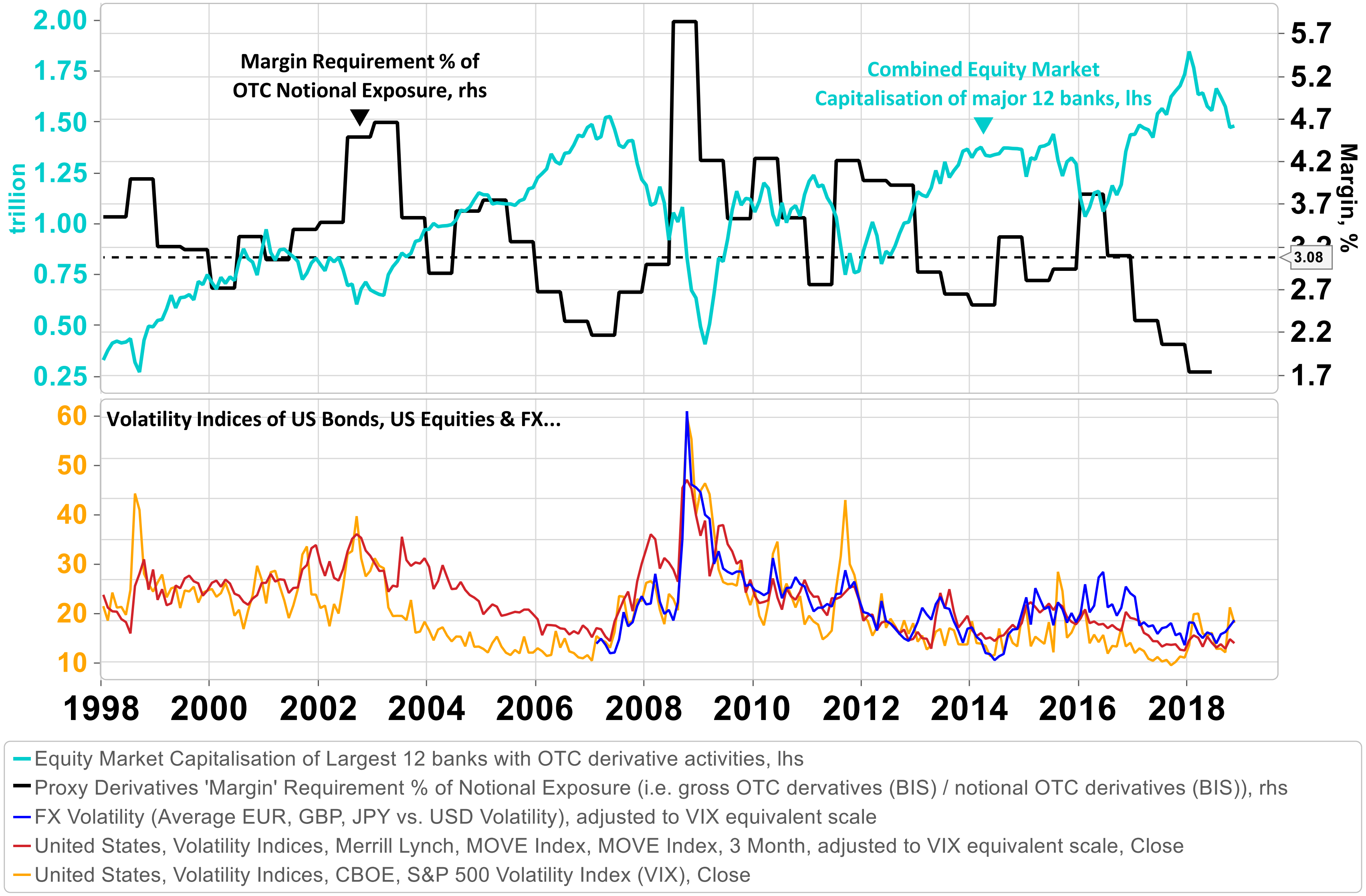
A further point that is important to note is that ***there has been a significant <u>balance sheet impairment situation</u> in the global banking system since 2007 that hasn't gone away,*** but rather just simply moderated somewhat with the more positive (but still dysfunctional) aspects of the most recent banking & liquidity sub-cycles.

You can see it in this chart where we compare **(A.)** the OTC Gross Market Values (i.e. the rough proxy of system wide $margins posted to sustain the OTC Notional Exposures) with **(B.)** the marginal liquidity creation/ destruction dynamics of the global banking system (inclusive of both central and commercial banks)…

The effective ***Balance Sheet Capacity 'deficit'*** (orange line in the bottom panel) is a bit of a *rough* form of analysis, mainly because the BIS data has only a 6 month frequency so it doesn't quite lead as much as it appears, but <u>it is still loosely indicative of the impaired situations in the global financial system</u>.

Financial System Analysis





It should come as no surprise that the market capitalization of the major global bank's equity tends to fluctuate 'inversely' with the *system-wide* margining requirements of the OTC Derivatives world.

It is also no coincidence that the margin required to support the Notional OTC Derivative exposures is highly correlated to the major asset market volatilities (as can be seen in the above chart) – especially in a world where 'risk' is typically defined by some form of a VAR model (clearly there's fallacy of composition issues here with the near universal adoption of volatility as a risk measure).

The February 2018 intra-month Equity Market VIX spike largely appears to have 'so far' only cleared out some of the excesses of the more direct short-VIX trade.

The volatilities here are utilising a monthly chart frequency, where 'overall' they still remained fairly compressed relative to historic experience.

[Market Analysis TOOLS]

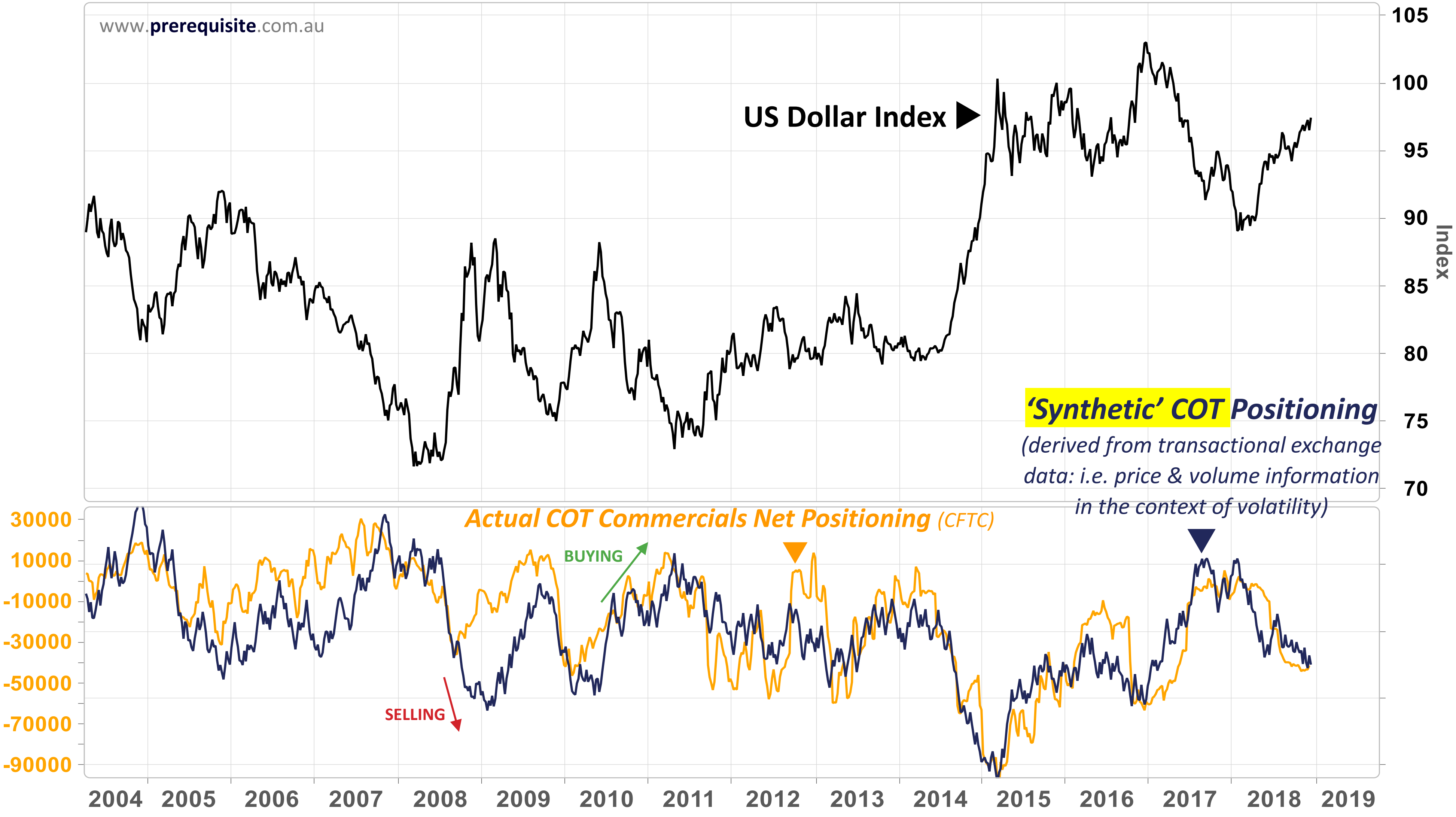
Guiding principles…

"Good analysis comes from good understanding. And good understanding is provided by a conceptual framework that helps you organize your thinking… A conceptual framework guides you in using information intelligently – to turn the information into knowledge. Concepts and frameworks are only important if they lead to analysis tools."

…Stephen H. Penman

"Without data you're just a person with an opinion."

…W. Edwards Deming



We've spent the last 17 years studying the behaviour of participants & capital… in recent years we have made several profound discoveries that mean we're able to *extract* the fundamental behaviour of different participant categories through transactional market data provided by any exchange for any security.

…meaning that we're able to 'see' the participant behaviour within almost any traded market in the world in real time (i.e. we're not limited to COT Reports or Sentiment 'Surveys' etc).

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"…focus on the movement of liquidity…
most people in the market are looking for
earnings and conventional measures.

It's liquidity that moves markets."

…Stanley Druckenmiller

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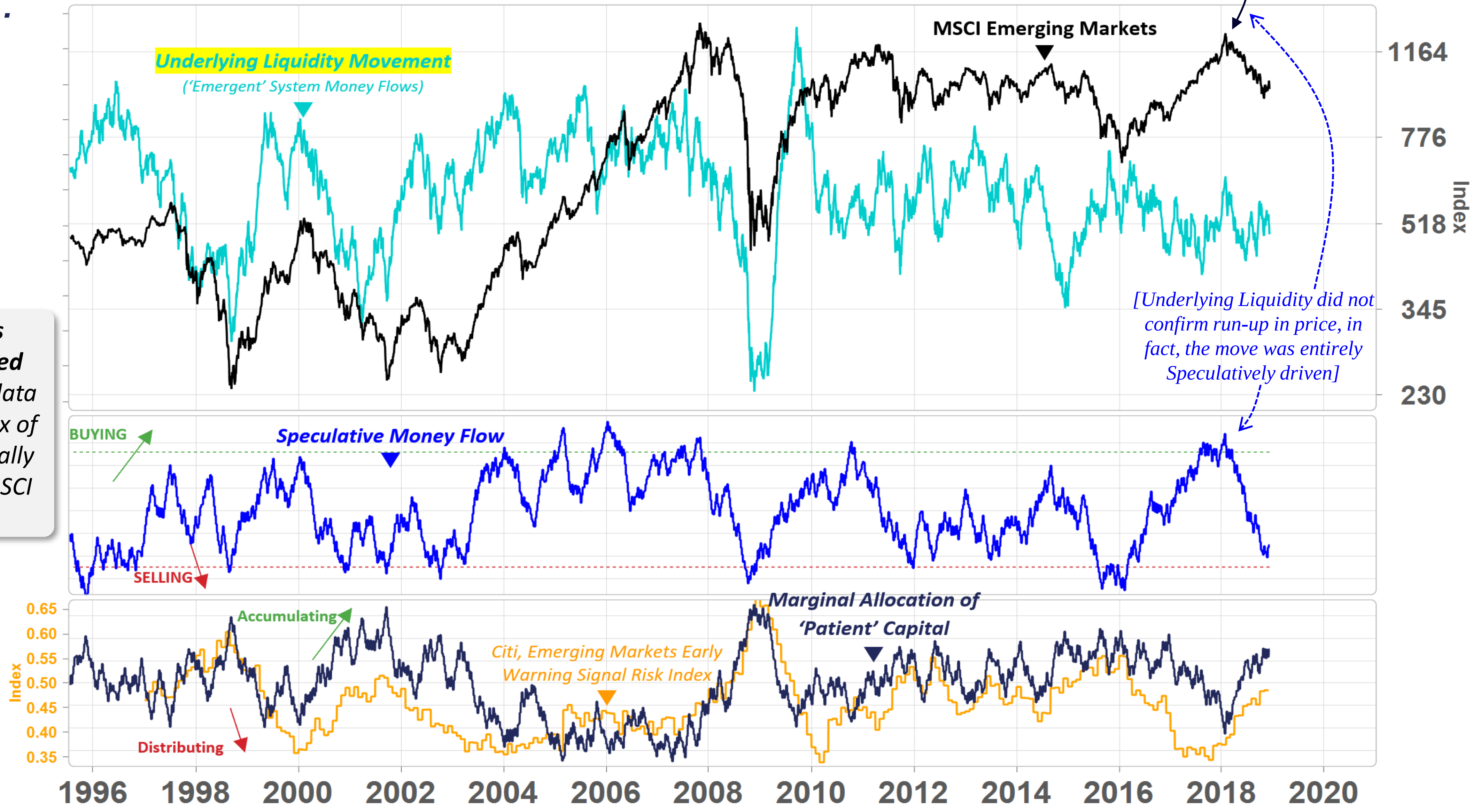
Example #1…

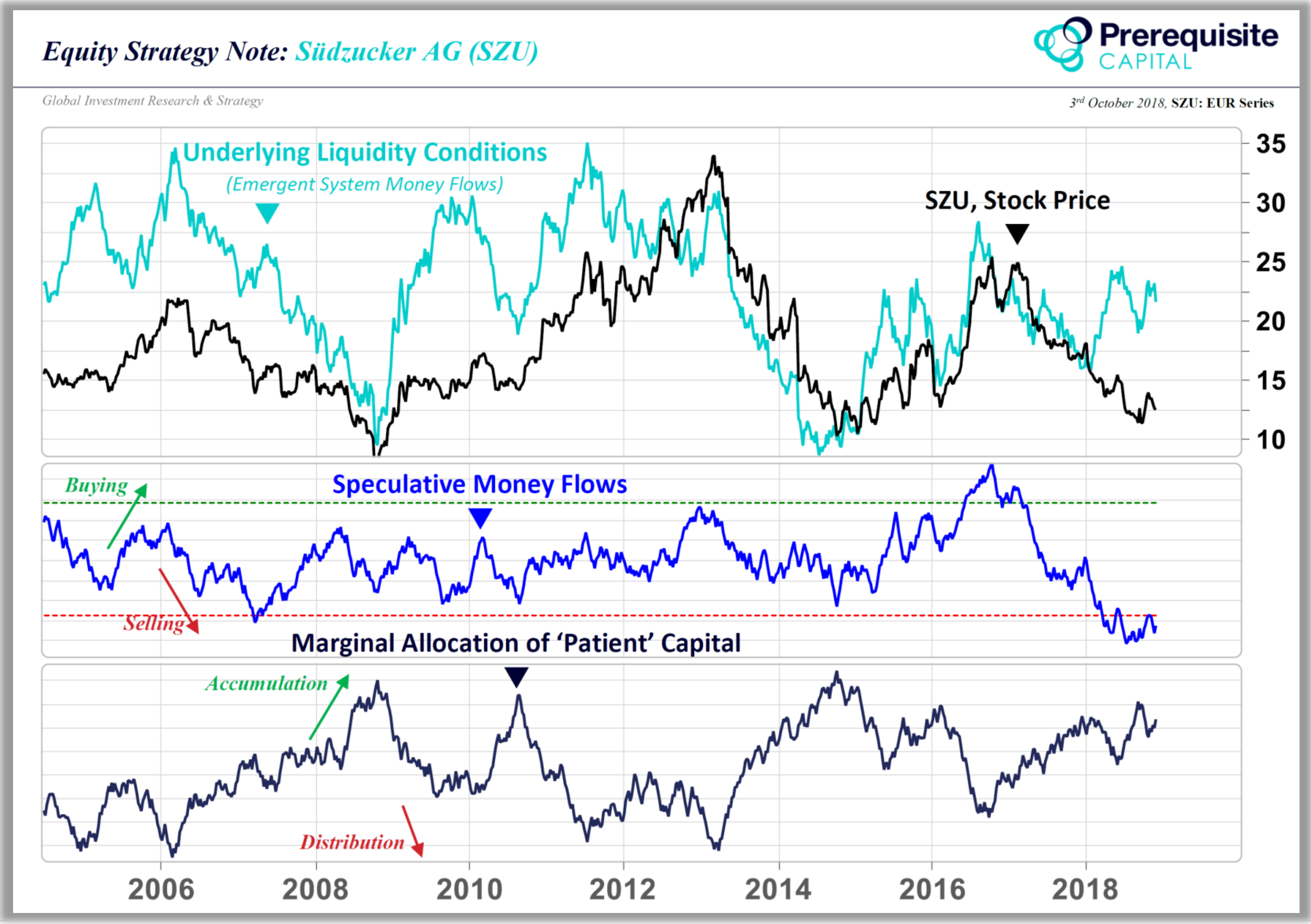
PCM Research, Feb-2018:
"Likely to be some sort of a significant top."

Liquidity & Flows synthetically derived *from transactional data for a composite index of major stocks materially underpinning the MSCI EM Index…*



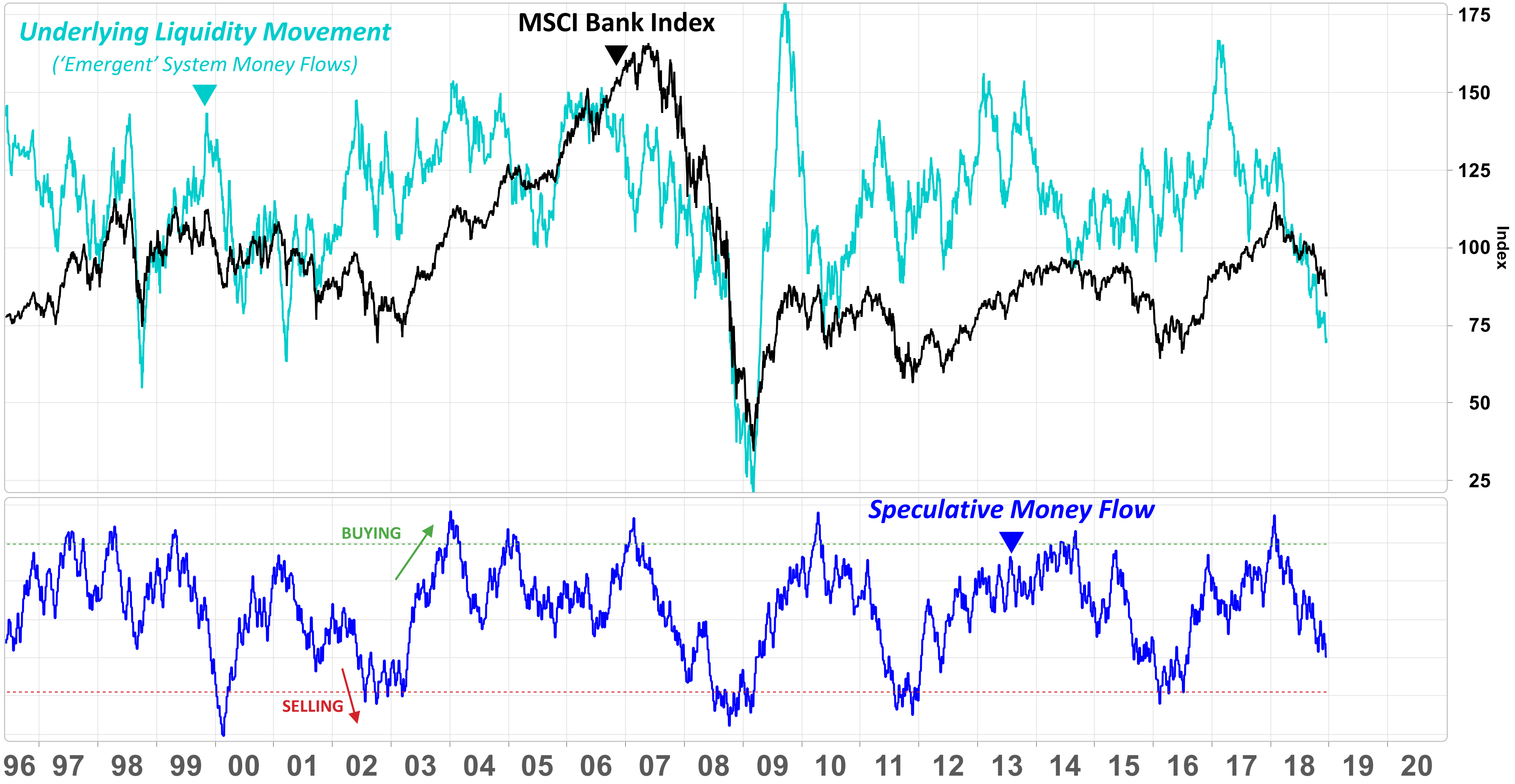
Example #2…

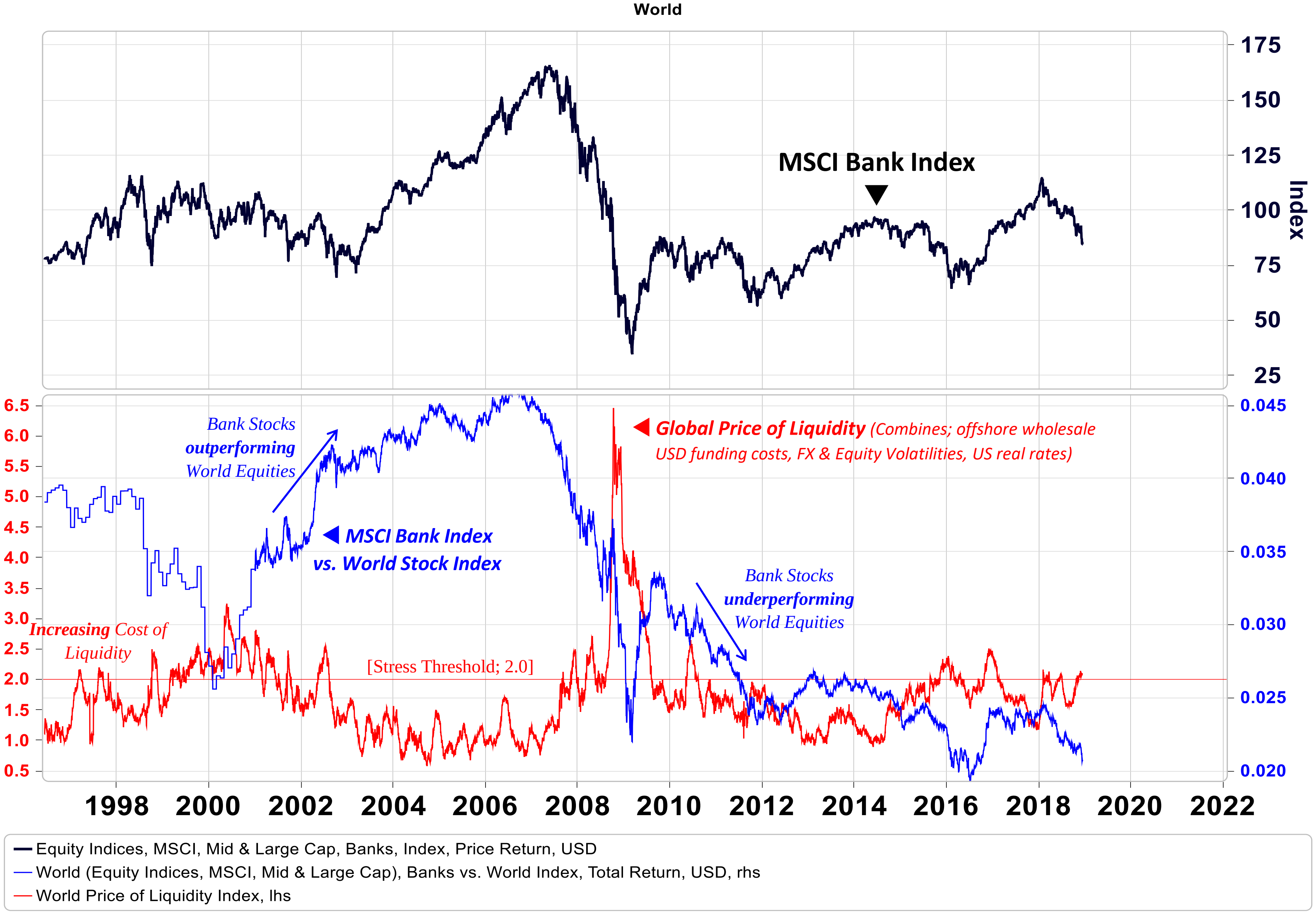
Liquidity & Flows synthetically derived *from transactional data is a powerful way to see what is happening 'beneath the surface' in the market of of any stock.*



Market Analysis Tools

As applied to global banks...




World
MSCI Bank Index
175
150
125
100
75
50
25
Index
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.045
0.040
0.035
0.030
0.025
0.020
Bank Stocks outperforming World Equities
MSCI Bank Index vs. World Stock Index
Global Price of Liquidity (Combines; offshore wholesale USD funding costs, FX & Equity Volatilities, US real rates)
Bank Stocks underperforming World Equities
Increasing Cost of Liquidity
[Stress Threshold; 2.0]
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
Equity Indices, MSCI, Mid & Large Cap, Banks, Index, Price Return, USD
World (Equity Indices, MSCI, Mid & Large Cap), Banks vs. World Index, Total Return, USD, rhs
World Price of Liquidity Index, lhs

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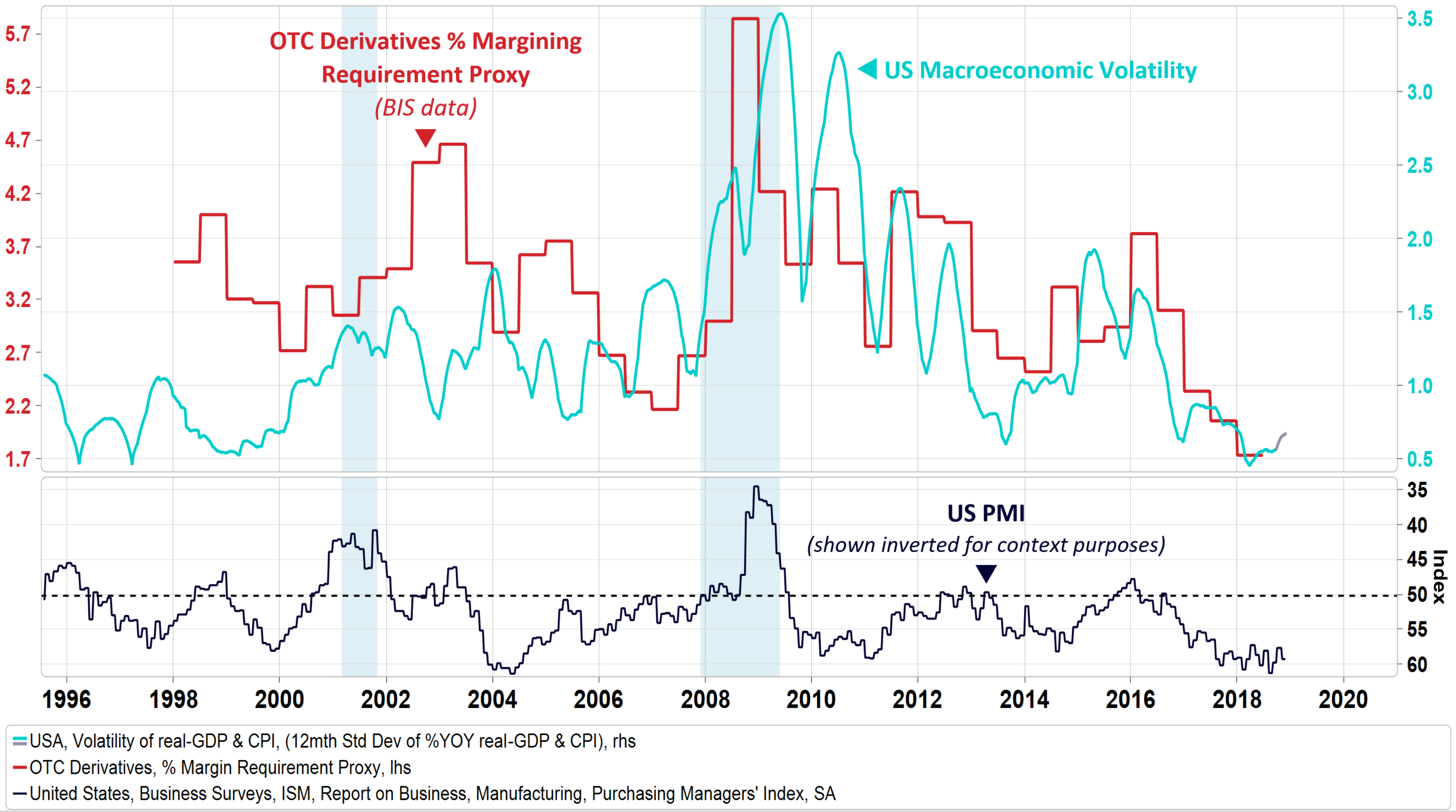
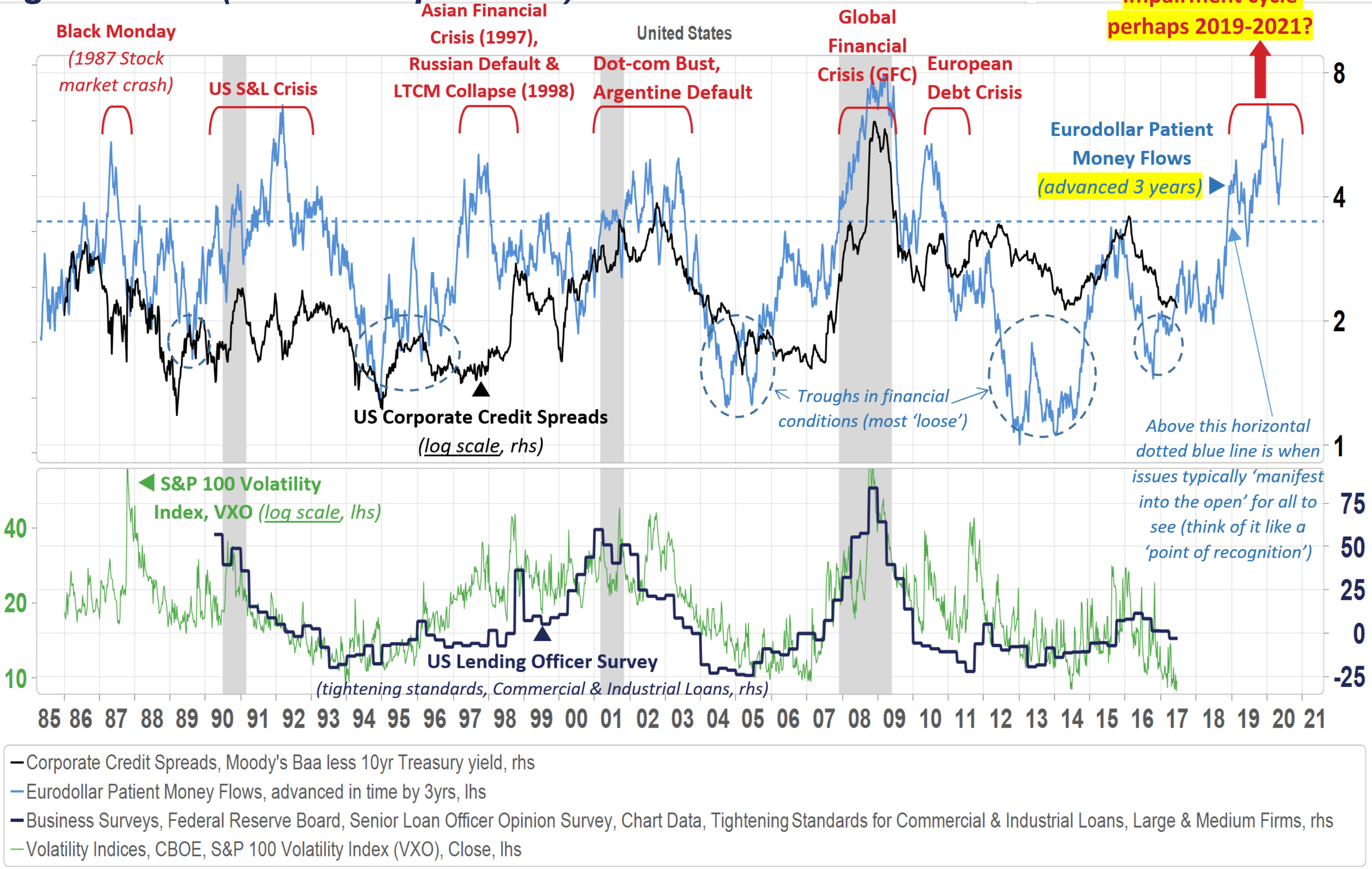


Leading Indicator (historic experience)…



The *'Eurodollar Patient Money Flows'* essentially measure the supposedly better-informed 'big-money' in global banking & liquidity management. What they collectively do in aggregate has almost a self-fulling nature about it, because <u>if they all decide that their balance sheets are too exposed relative to anticipated future conditions then they will start taking action to de-risk</u> (which ultimately will create a bid for Eurodollar derivatives/futures) and this sets into motion a global liquidity tightening process which as the dominoes fall over eventually tends to manifest in some form of crisis wherever the system is weakest approximately 3 years later.

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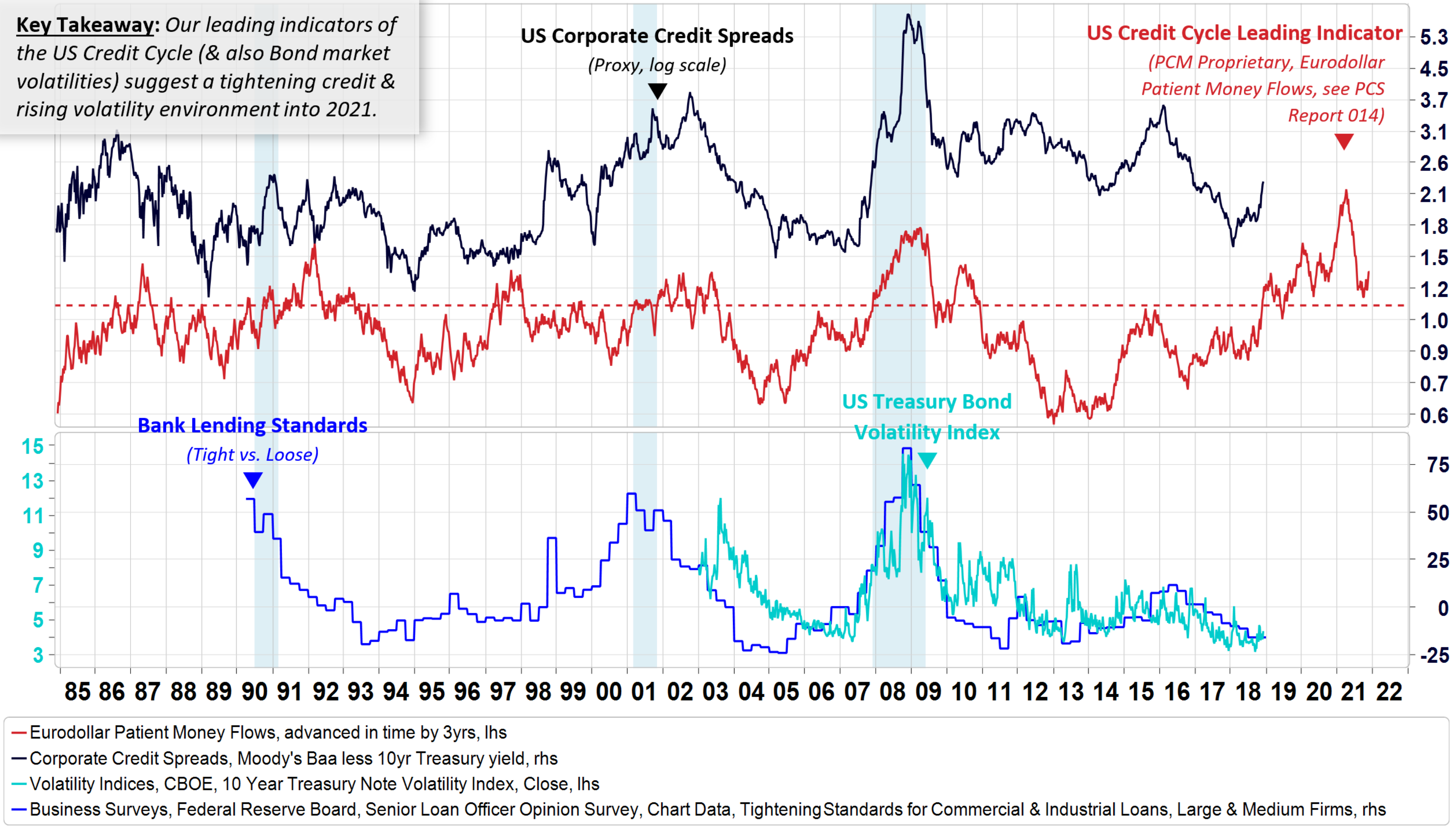
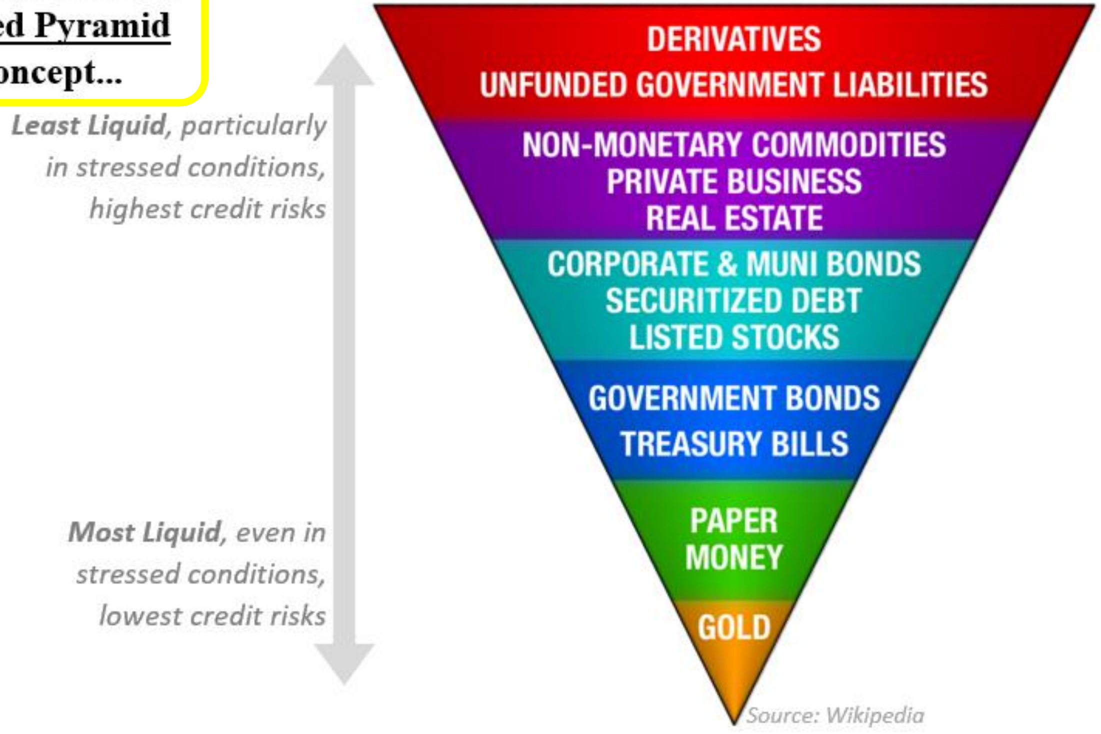
Leading Indicator (updated)…

<u>Key Takeaway</u>: *Our leading indicators of the US Credit Cycle (& also Bond market volatilities) suggest a tightening credit & rising volatility environment into 2021.*



First principles...

A modern-day *approximation* of Exter's Inverted Pyramid to illustrate the concept...



'Risk Assets'

- Procyclical characteristics
- Frequently has a structurally 'short volatility' profile
- Seeks to earn risk-premia
- Capital is a coward, fear will tend to drive capital to flow towards the Apex of the inverted pyramid.

'Apex Assets'

- 'Flight to safety' characteristics
- Frequently has a structurally 'long volatility' profile
- Whether it is Treasuries/USDs that are beneficiaries or Gold depends on the broader conditions and context

EXTER'S INVERTED PYRAMID, IN HIS OWN WORDS:

"My upside-down debt pyramid... the debt burden at some point becomes unsustainable because too many debtors borrow short and lend long term, or worse, put the money into bricks and mortar.

"This will be a deflationary collapse rather than an inflationary blow-off because creditors in the debt pyramid will move down the pyramid out of the most illiquid debtors at the top of the pyramid – junk bonds, failing banks, insurance companies... Creditors will try to get out of those weak debtors and go down the debt pyramid, to the very bottom: currency (dollar bills), even though they pay no interest. Next above currency are Treasury bills, issued by the Government and backed by the Federal Reserve, which supports the market through its open market operations. They are by far the largest component of Reserve Bank credit, so are really as safe as currency notes, plus they pay interest. Still, you can't buy anything with Treasury bills, you have to liquidate the bills to get money of some sort to buy something.

"The higher the debtors sit in the pyramid, the less liquid they are. At the top are all the least liquid debtors... This explains why we are headed for deflation. Creditors will move out of debtors high in the debt pyramid as many of those debtors fail through defaults and bankruptcies. That is very deflationary.

[On falling velocity] "This is a very important point. This increase in currency in circulation has gone under the mattress. It was not needed to make purchases... this currency was not demanded for commerce but for safety.

"The final step down is out of the debt pyramid altogether into gold... when they go to gold instead of currency or Treasury bills, the price of gold will take off. ...Gold is money, the best store of value money that man has ever found over thousands of years."

...John Exter, June 1991 ('Simplex Munditis', www.the-moneychanger.com)

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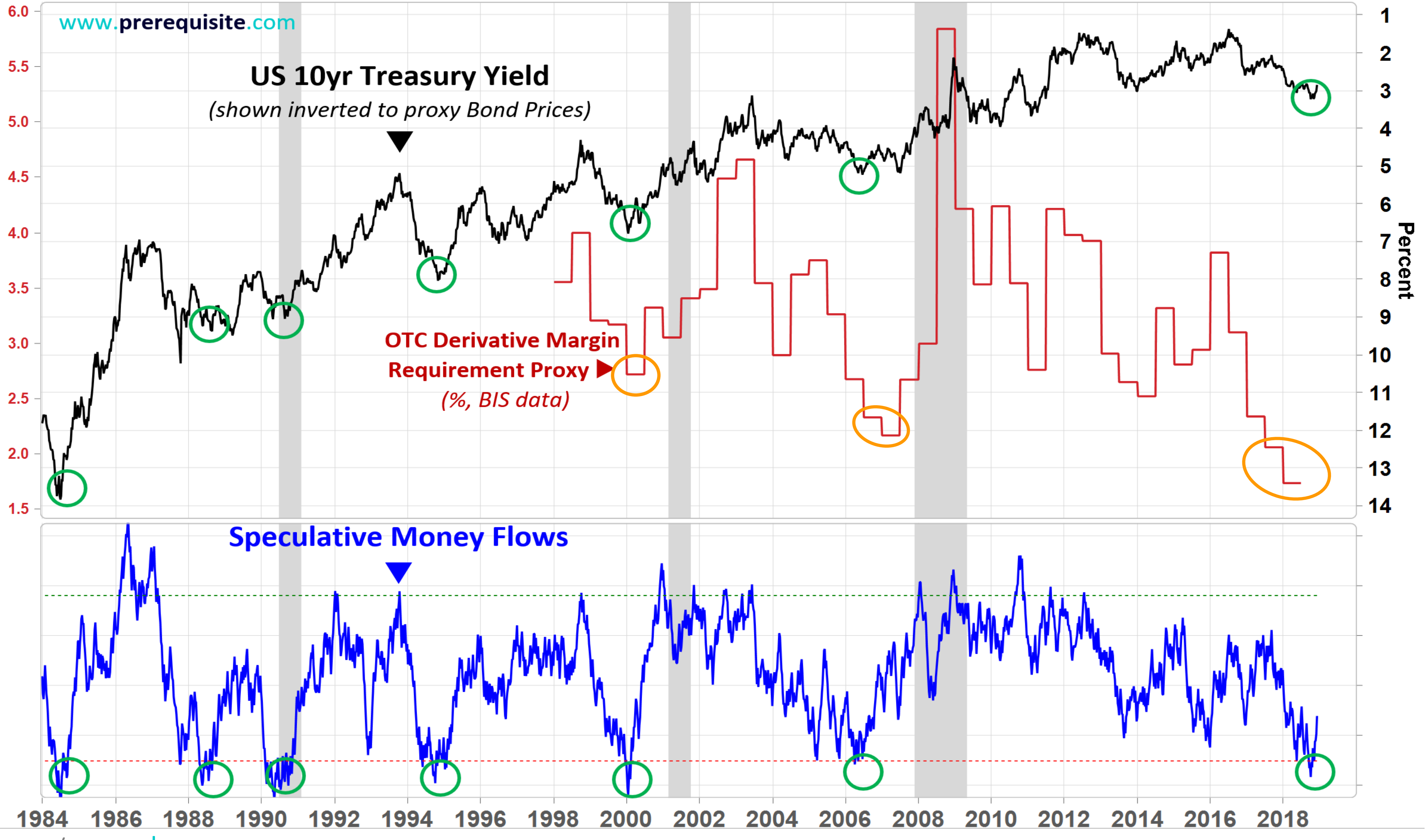
Opportunity?



"If everyone is thinking alike, then no one is thinking."
...Benjamin Franklin (1706-1790)

[Concluding CONSIDERATIONS]

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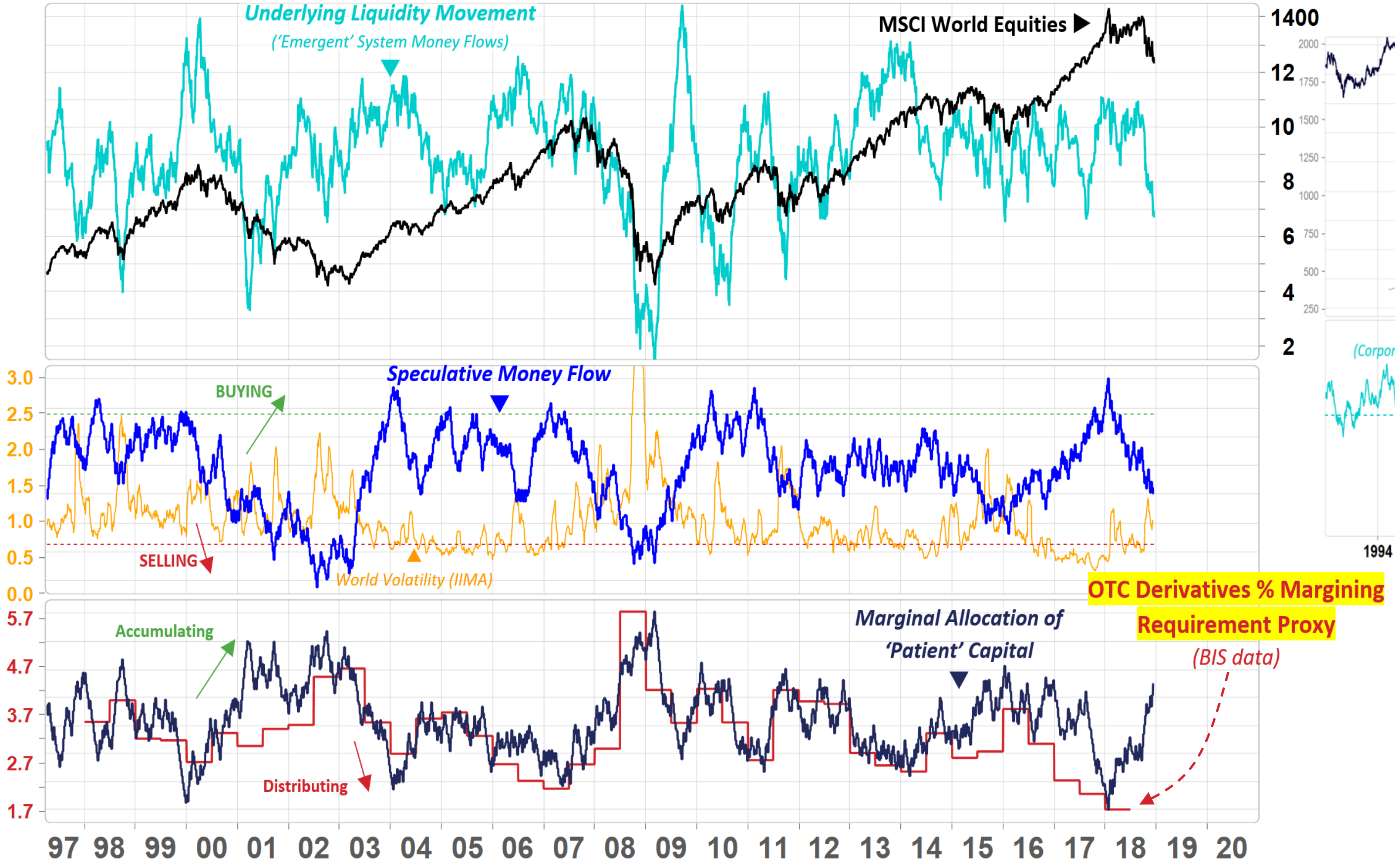
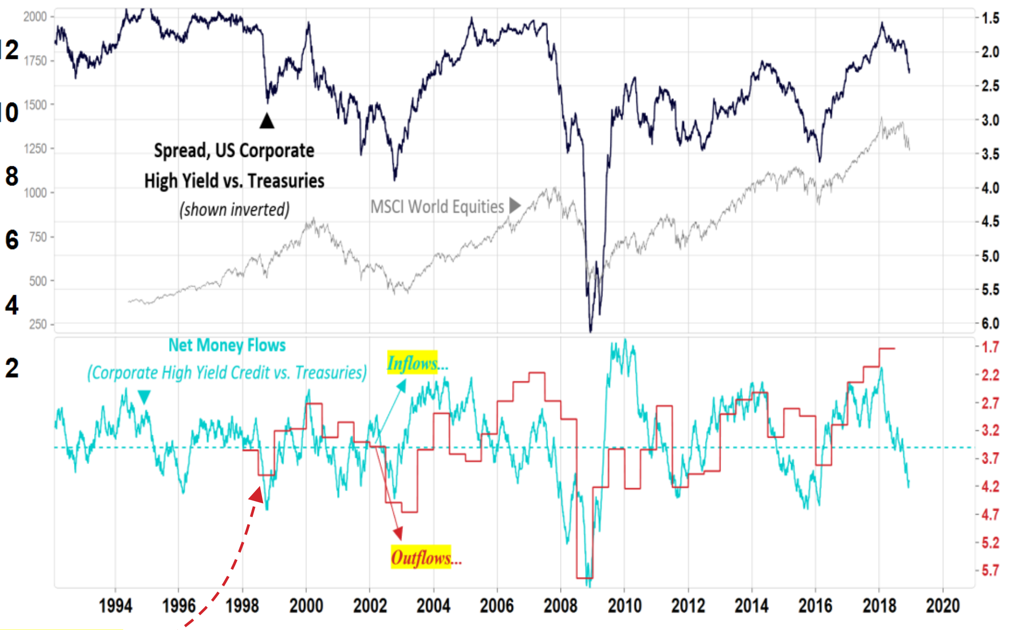
Unsurprisingly, world equity markets and also US credit spreads both suggest escalating OTC Margins from here.
The key question however, will a *reflexive* process trigger (like 2008) in this present sub-cycle of tightening or will it still be another sub-cycle or two before we trigger a reflexive event?

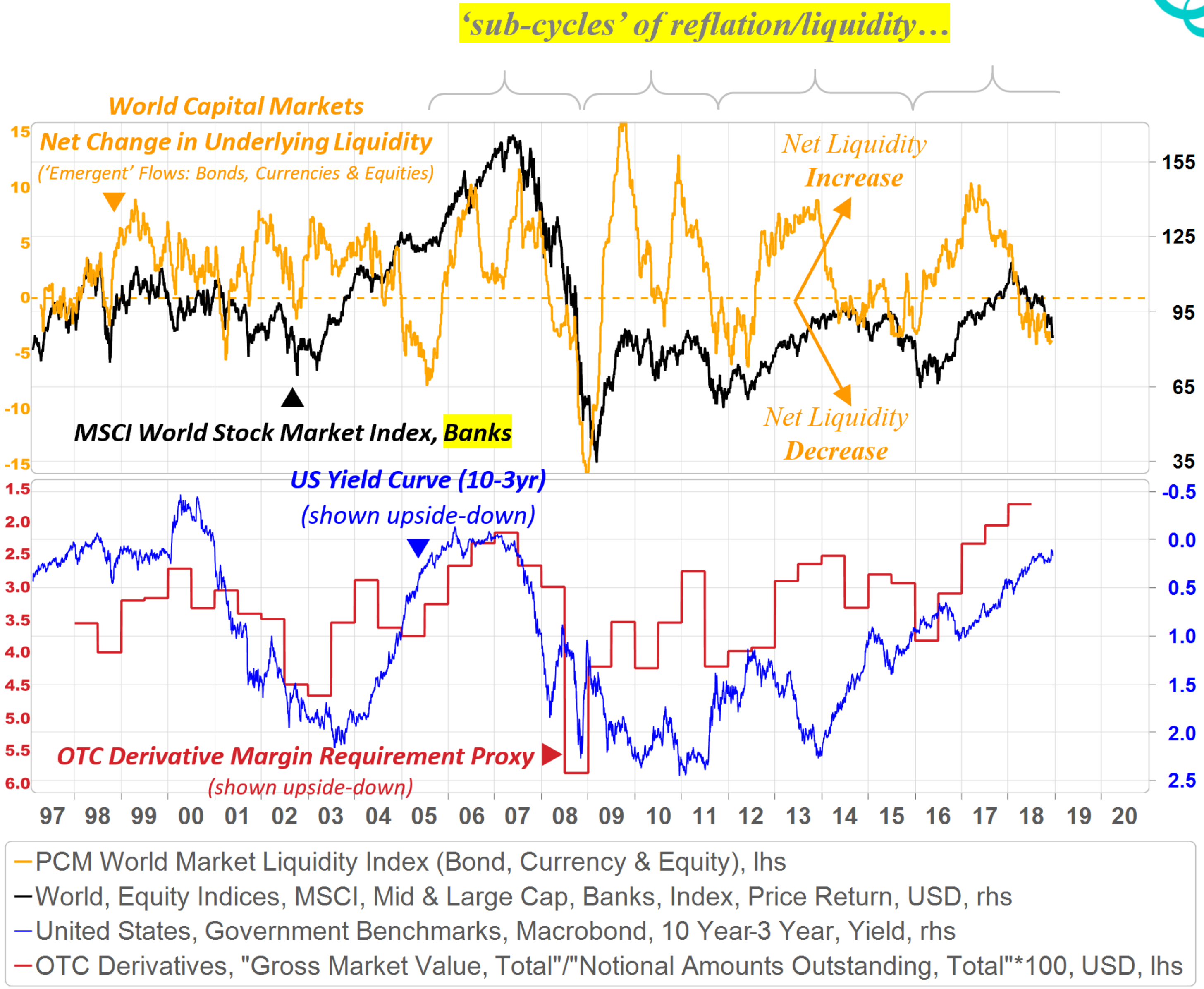




Over the last 12 years, we have seen four 'sub-cycles' of reflation & liquidity, <u>all within a broader disinflationary trend that is still likely to persist</u> *(see PCS 027 for detailed frameworks).*

Global Banks have become more and more dependent upon the sub-cycles of *World Capital Market Liquidity…*

Eventually authorities will likely ('reactively') turn a banking & debt/liquidity crisis into a currency problem, but we're not there yet (& still seem to be years away?). In the meantime we have an overall disinflationary-biased global system at risk of a severe deflationary shock in the years ahead.



…it will be critical to see how the present 'sub-cycle' of liquidity unfolds *(see chart to the left)* – presently we are seeing the negative liquidity conditions <u>still unconfirmed</u> by a steepening yield curve *(i.e. the blue line in the chart to the left isn't falling yet)*, which suggests that we may still yet have another (albeit compressed) 'sub-cycle' in liquidity to come before we are at heightened risk of a broader unwind.

Generally speaking, what portends the most danger is a negative liquidity condition in combination with a steepening yield curve. A reflexive breakdown is at heightened risk of occurring in such circumstances.

Concluding Considerations

"…the trigger for a crisis could be anything if the system as a whole is unstable. Moreover, the size of the trigger event need not bear any relation to the systemic outcome. The lesson is that policymakers should be focused less on identifying potential triggers than on identifying signs of potential instability. This implies that paying attention to macroeconomic 'imbalances' my pay bigger dividends than trying to assess financial instability through highly 'disaggregated' risk maps… If the economy is a complex, adaptive system, attention should be paid to any significant and sustained deviation of macroeconomic variables that deviate from historical norms. While comforting explanations can sometimes be found, such deviations often indicate the rising probability of a crisis and/or the costs of a potential crisis. In this regard, the Bank for International Settlements (BIS) has been a leader in identifying rising levels of credit and debt as harbingers of future problems. Closely related, they have also focussed attention on grows capital inflows as indicators of future instability, as well as other financial sector imbalances. Evidently, real side imbalances such as low saving rates prior to the crisis (US) and high investment rates (China) also deserve serious attention. …developments in property markets should also be monitored particularly closely given how often they have been at the root of subsequent problems." **…William White, 22nd April 2018, Recognising the Economy as a Complex, Adaptive System: Implications for Central Banks** *(published as Chapter 21 in "The Changing Fortunes of Central Banking", edited by Philipp Hartmann, Haizhou Huang and Dirk Schoenmaker. Cambridge University Press)*

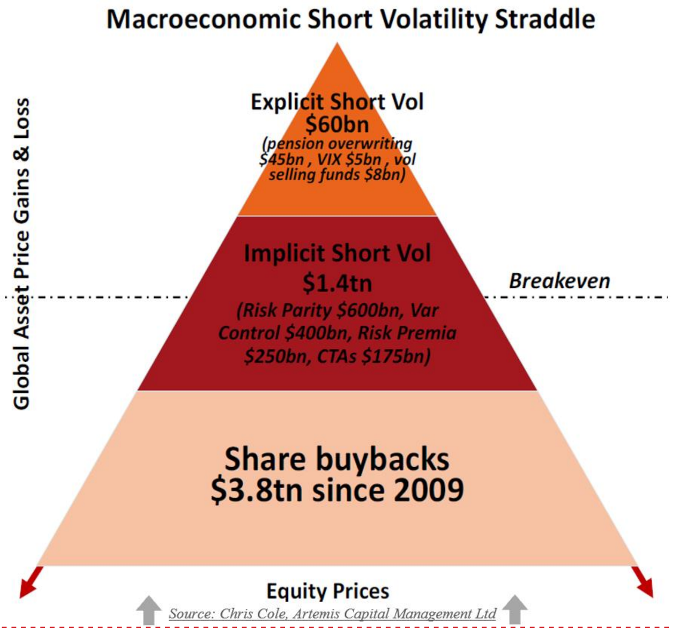
It's likely that in reading this report, you are probably realising that with these dynamics within the global banking system, that the true implicit *'short-volatility'* trade could actually be much, much larger than even the biggest estimates proffered to date.

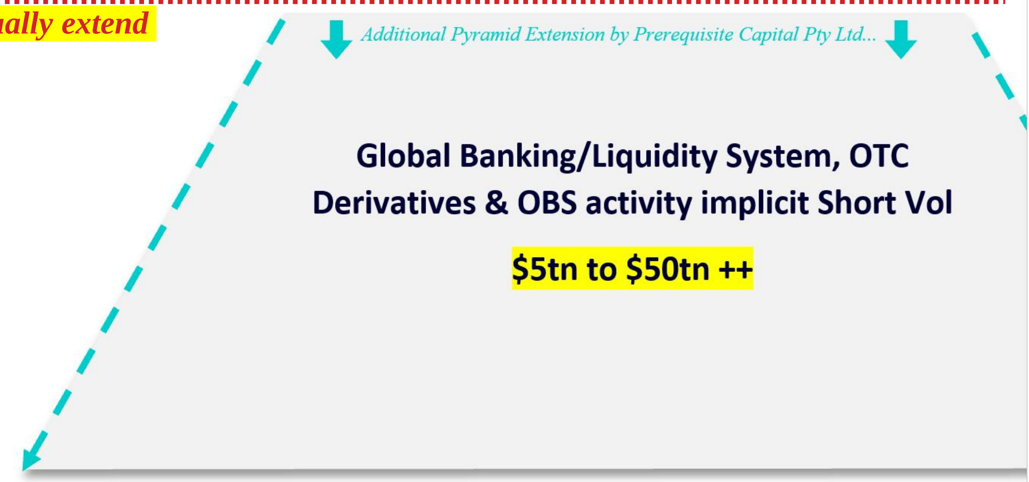
One of the best discussions of the 'short volatility' trade can be found in a publication of Mr. Chris Cole (of Artemis Capital Management Ltd, www.artemiscm.com)... namely, *'Reflexivity in the Shadows of Black Money 1987'* published Oct-2017. (We would also highly recommend that you read *'Volatility and the Allegory of the Prisoner's Dilemma'* published Oct-2015.)

Within Mr. Cole's excellent Oct-2017 publication, he estimates both direct and indirect 'short-volatility' trades globally aggregate *in excess of $2 trillion* – shown diagrammatically by the pyramid to the right…

We wonder if the pyramid should actually extend further…

???





“There is no security on this earth; there is only opportunity."

...General Douglas Macarthur (1880-1964)

*“Our grand business is not to see what lies dimly at a distance,
but to do what lies clearly at hand.”*

*“Do the duty which lies nearest to you,
the second duty will then become clearer.”*

“Nothing is more terrible than activity without insight.”

... Thomas Carlyle (1795-1881)

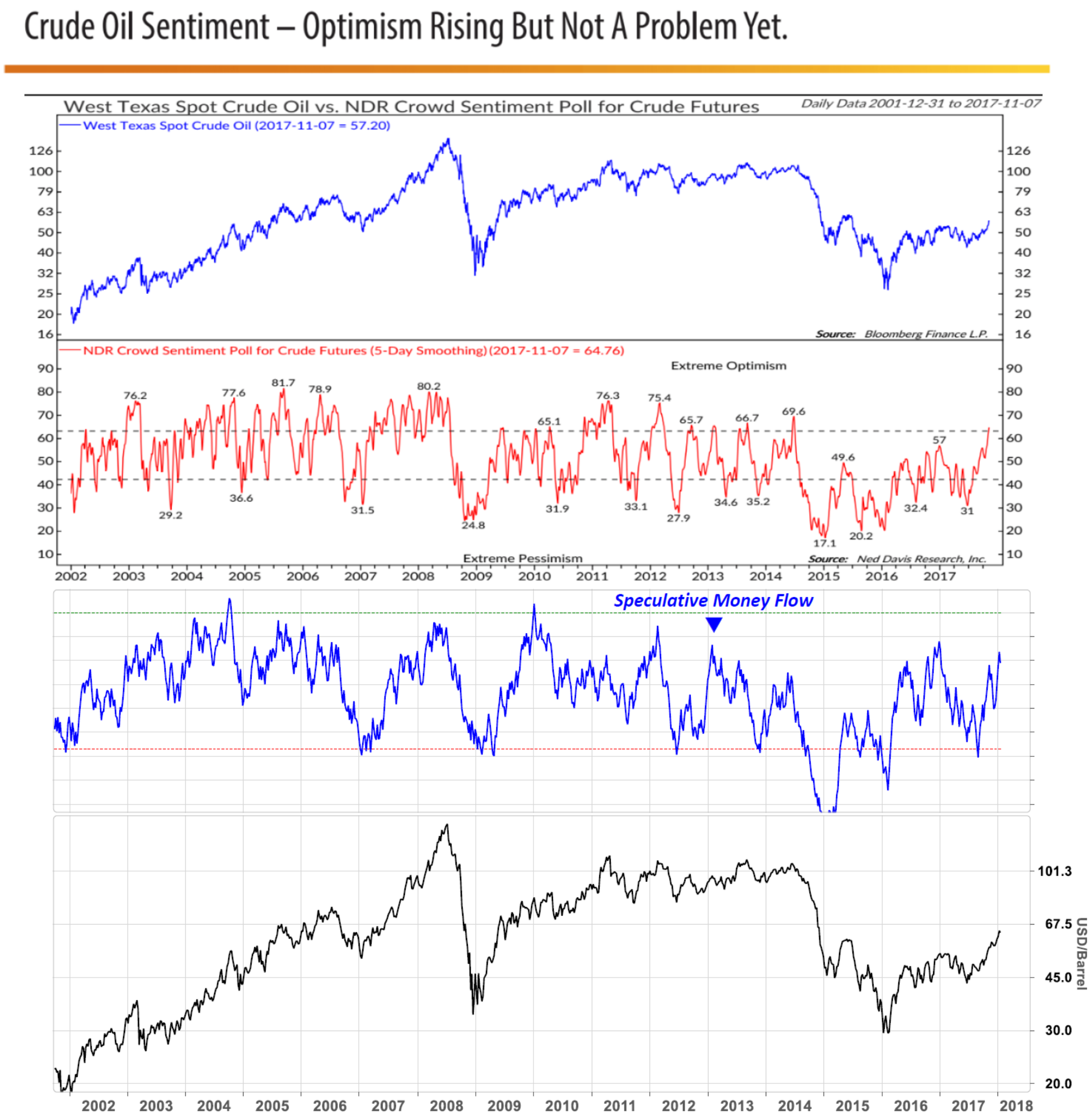
[APPENDICES]

Appendix ONE: *Prerequisite's Synthetic Behavioural Algorithms vs. Popular Sentiment Gauges*

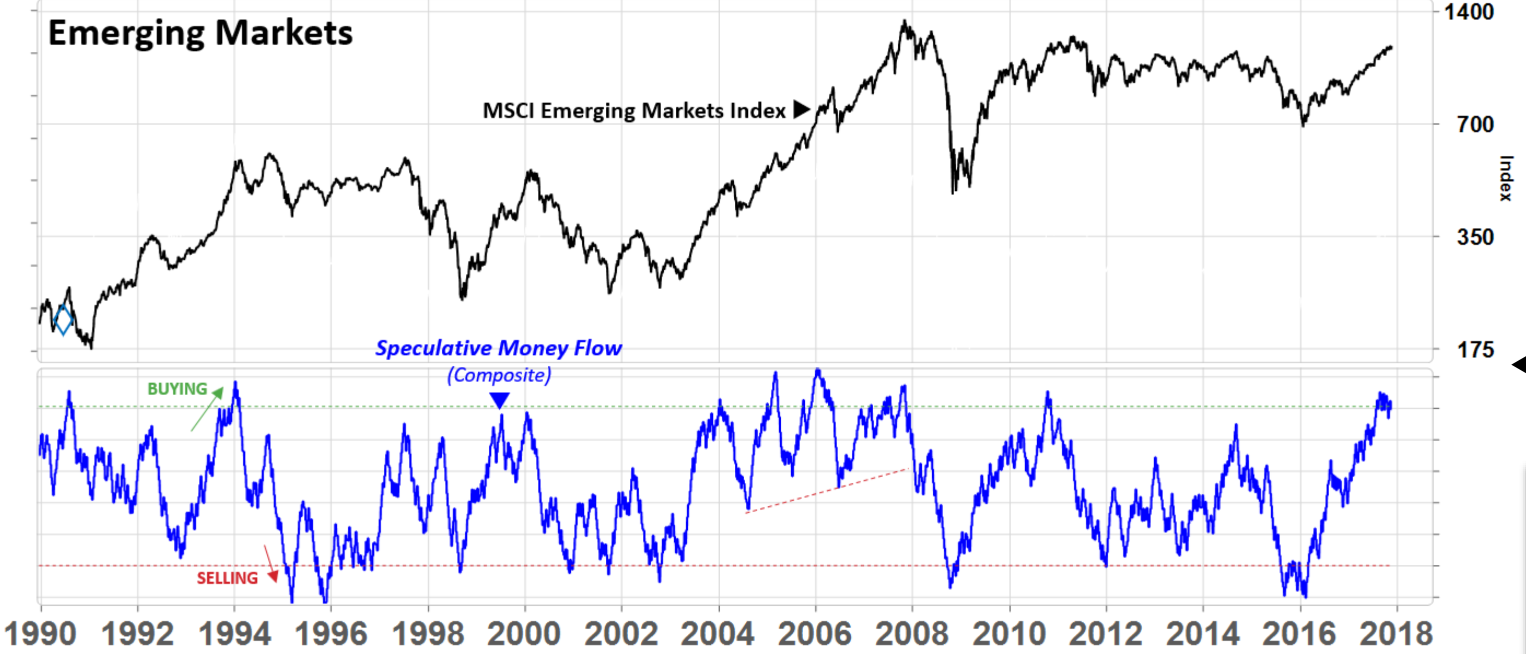
Prerequisite CAPITAL

Before we move on, just to provide some further validation of our tools for newer clients, here's an interesting overlay of our *'Patient Money Flow'* tool with the *Insider Buy/Sell Ratio* for the same sector…

In a similar manner, we have overlaid below a Sentiment gauge by *Ned Davis Research Inc* with our 'Speculative Money Flows' tool…



Appendix ONE: *Prerequisite's Synthetic Behavioural Algorithms vs. Popular Sentiment Gauges*



◀ *Prerequisite Speculative Money Flow Tool*
(much less 'noisy' than the Fund Manager Survey Below)

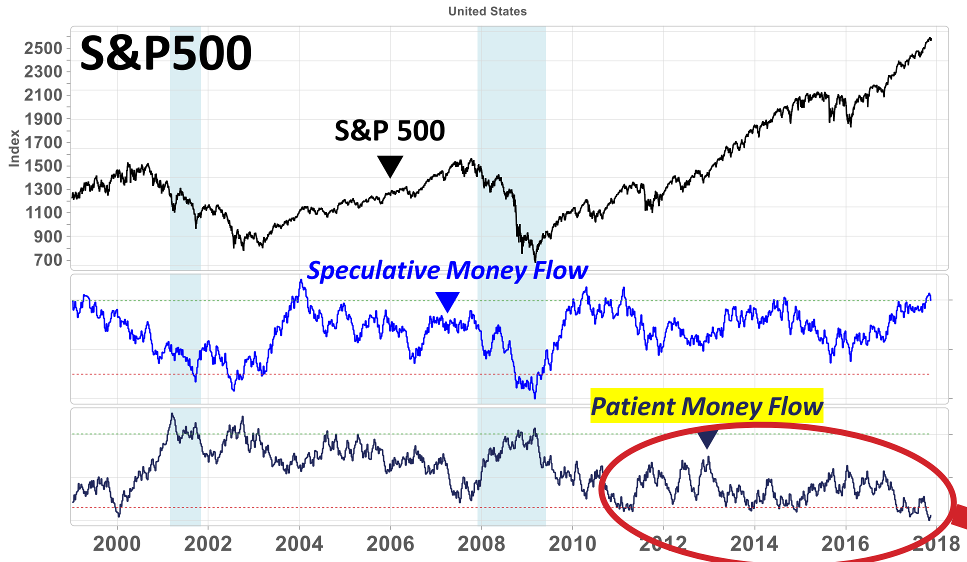
- Another example of our tools vs. popular surveys out there. In this instance it's not an 'apples with apples' comparative, but the practical utility of our tools are clear.

◀ *Global Fund Managers **'Underweight'** Emerging Market Equities*

◀ *Global Fund Managers **'Overweight'** Emerging Market Equities*

Appendix ONE: *Prerequisite's Synthetic Behavioural Algorithms vs. Popular Sentiment Gauges*

Prerequisite CAPITAL

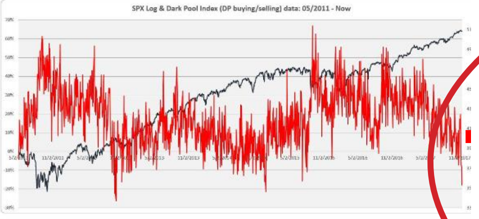


Because of the nature of how our Tools are constructed, ***they are able to capture the indicative behaviours of participants within the opaque 'Dark Pools' and even OTC Derivative markets***... Don't believe us? Check it out for yourself by comparing our "Patient Money Flow" tool with one of the more credible "Dark Pool" activity indexes shown *in the charts to the right* →

How can this possibly be??? One of our key breakthrough insights is that although there are an infinite myriad of participant 'types' in any given market (& many different exchanges for the same market), there are only a few underlying 'core motives' that underpin the actions and behaviours of these diverse groups... **it's at the level of 'motive' that you find the unity amidst the diversity of these participants. Motive is easier to see in transactional market data.**

Callum Thomas
@Callum_Thomas
Following

9. The dark side: here's what the big guys are doing in the dark pools... h/t @VegaVolgaVanna $SPX $SPY



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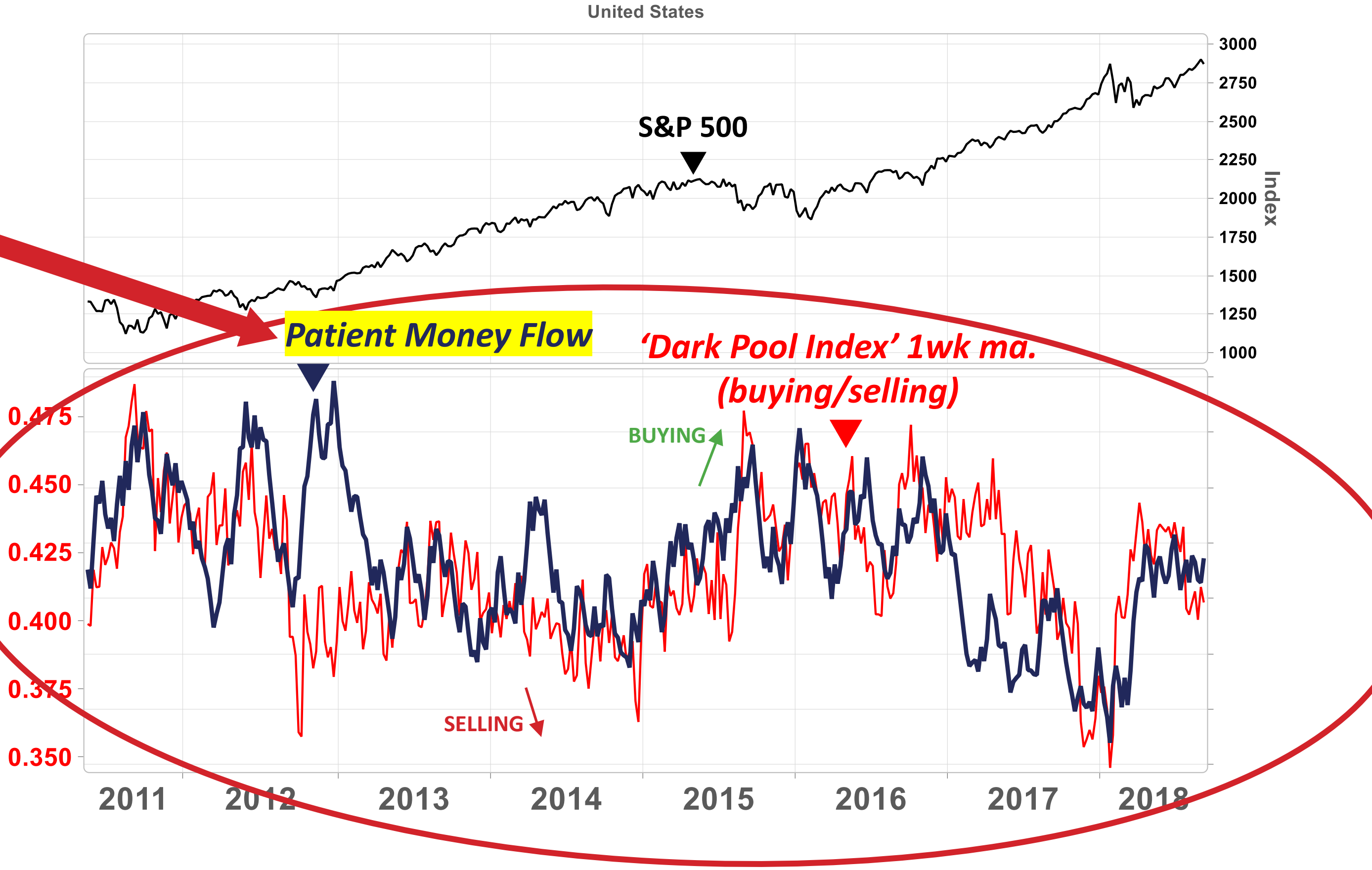
The **'Dark Pool Index'** is an aggregate measure of the buying and selling of S&P500 stocks in Dark Pools... For further information on this, please see here: https://squeezemetrics.com/monitor/benefits

(N.B. Prerequisite Capital is completely unrelated to the parties that undertake the construction of this Index, Prerequisite's Proprietary "Patient Money Flow" tool is constructed from unrelated data/sources and is able to be applied to any market)



Appendix TWO: More Information

Prerequisite CAPITAL

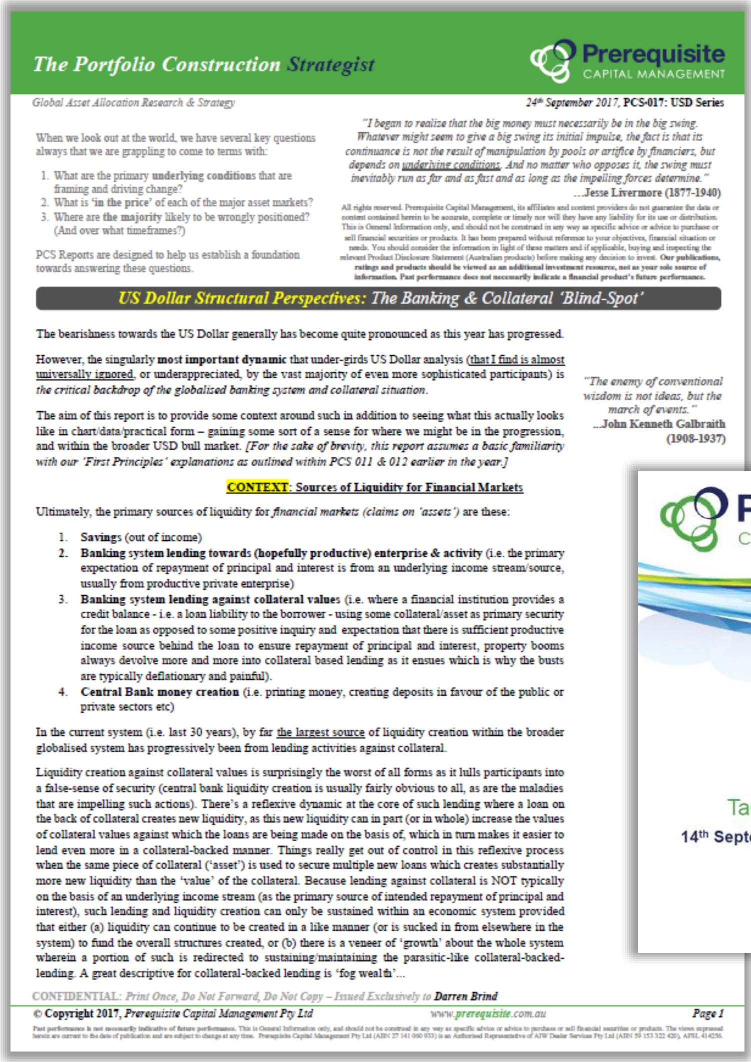
Prerequisite Research Services...

Every 4-6 weeks on average, we publish ***The Portfolio Construction Strategist*** *(known as our 'PCS Reports').*

These *PCS Reports* are anywhere from 6 to 65 pages long and are designed principally for *private investors* with a global focus who must make asset allocation, investment and currency decisions within their portfolios.

Our *PCS Reports* are educational, practical and timely... seeking to better understand both the opportunities and risks pertaining to equity, bond, currency and commodity markets around the world.

Within the *PCS Reports* we do our best to tackle the hard issues and to focus our efforts on the things that are not well understood by most sophisticated participants – i.e. the 'grey areas' in their thinking.



The Portfolio Construction Strategist

Prerequisite CAPITAL MANAGEMENT

Global Asset Allocation Research & Strategy

24th September 2017, **PCS-017: USD Series**

When we look out at the world, we have several key questions always that we are grappling to come to terms with:

1. What are the primary **underlying conditions** that are framing and driving change?
2. What is '**in the price**' of each of the major asset markets?
3. Where are **the majority** likely to be wrongly positioned? (And over what timeframes?)

PCS Reports are designed to help us establish a foundation towards answering these questions.

"I began to realize that the big money must necessarily be in the big swing. Whatever might seem to give a big swing its initial impulse, the fact is that its continuance is not the result of manipulation by pools or artifice by financiers, but depends on underlying conditions. And no matter who opposes it, the swing must inevitably run as far and as fast and as long as the impelling forces determine."

...Jesse Livermore (1877-1940)

US Dollar Structural Perspectives: The Banking & Collateral 'Blind-Spot'

The bearishness towards the US Dollar generally has become quite pronounced as this year has progressed.

However, the singularly **most important dynamic** that under-girds US Dollar analysis (that I find is almost universally ignored, or underappreciated, by the vast majority of even more sophisticated participants) is *the critical backdrop of the globalised banking system and collateral situation.*

The aim of this report is to provide some context around such in addition to seeing what this actually looks like in chart/data/practical form – gaining some sort of a sense for where we might be in the progression, and within the broader USD bull market. *[For the sake of brevity, this report assumes a basic familiarity with our 'First Principles' explanations as outlined within PCS 011 & 012 earlier in the year.]*

"The enemy of conventional wisdom is not ideas, but the march of events."

...John Kenneth Galbraith (1908-1937)

CONTEXT: Sources of Liquidity for Financial Markets

Ultimately, the primary sources of liquidity for *financial markets (claims on 'assets')* are these:

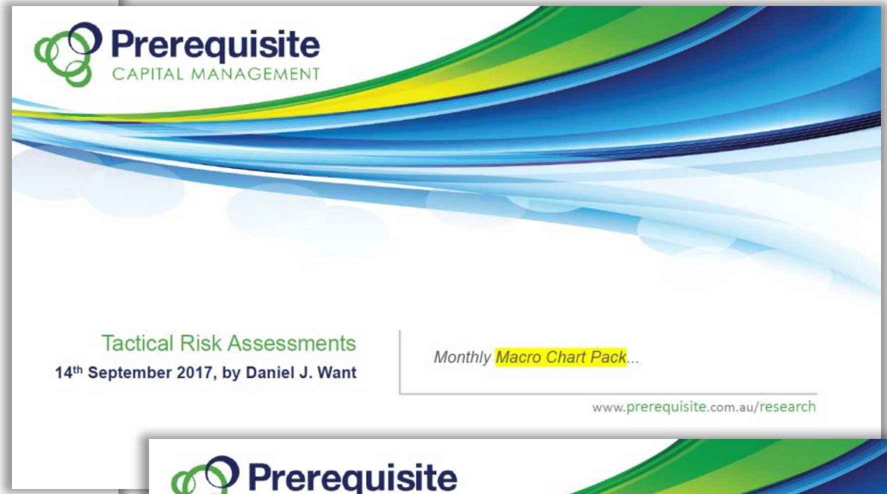
1. **Savings** (out of income)
2. **Banking system lending towards (hopefully productive) enterprise & activity** (i.e. the primary expectation of repayment of principal and interest is from an underlying income stream/source, usually from productive private enterprise)
3. **Banking system lending against collateral values** (i.e. where a financial institution provides a credit balance - i.e. a loan liability to the borrower - using some collateral/asset as primary security for the loan as opposed to some positive inquiry and expectation that there is sufficient productive income source behind the loan to ensure repayment of principal and interest, property booms always devolve more and more into collateral based lending as it ensues which is why the busts are typically deflationary and painful).
4. **Central Bank money creation** (i.e. printing money, creating deposits in favour of the public or private sectors etc)

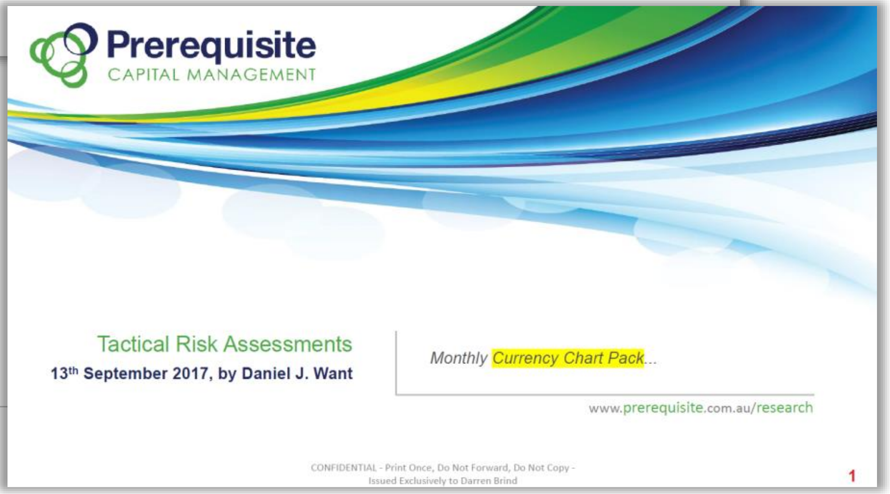
In the current system (i.e. last 30 years), by far the largest source of liquidity creation within the broader globalised system has progressively been from lending activities against collateral.

Liquidity creation against collateral values is surprisingly the worst of all forms as it lulls participants into a false-sense of security (central bank liquidity creation is usually fairly obvious to all, as are the maladies that are impelling such actions). There's a reflexive dynamic at the core of such lending where a loan on the back of collateral creates new liquidity, as this new liquidity can in part (or in whole) increase the values of collateral values against which the loans are being made on the basis of, which in turn makes it easier to lend even more in a collateral-backed manner. Things really get out of control in this reflexive process when the same piece of collateral ('asset') is used to secure multiple new loans which creates substantially more new liquidity than the 'value' of the collateral. Because lending against collateral is NOT typically on the basis of an underlying income stream (as the primary source of intended repayment of principal and interest), such lending and liquidity creation can only be sustained within an economic system provided that either (a) liquidity can continue to be created in a like manner (or is sucked in from elsewhere in the system) to fund the overall structures created, or (b) there is a veneer of 'growth' about the whole system wherein a portion of such is redirected to sustaining/maintaining the parasitic-like collateral-backed-lending. A great descriptive for collateral-backed lending is 'fog wealth'...

"An investment in knowledge pays the best interest"

...Benjamin Franklin (1706-1790)





To complement the PCS Reports, we publish on a <u>monthly</u> basis two **Chart Packs**

Prerequisite Research Services...

Prerequisite CAPITAL

We COMPLEMENT our client's own frameworks for navigating markets and understanding the world with insightful/data-driven/practical tools and perspectives on markets that they will not gain anywhere else.

	PCM Portfolio Investors°°	Tactical Risk Assessment Chart Packs: Macro & Currency	Tactical Risk Assessment Chart Packs: Macro & Bespoke	Asset Allocation & Global Markets	Comprehensive
PCS Publications (every 4-6 wks)	✓			✓	✓
*PCS Model Portfolio (USD) transparency**				✓*	✓*
[See **Slide 16** for contents] *Monthly Chart Pack - Major MACRO Markets*		✓	✓	✓	✓
[See **Slide 17** for contents] *Monthly Chart Pack - CURRENCY*		✓			✓
*Monthly Chart Pack - BESPOKE (up to 15 markets or stocks)^*			✓		✓
Phone call/teleconference with Daniel	✓	*1hr, every 4 months*	*1hr, every 4 months*	*1.5hrs, every 8 weeks*	*1.5hrs, every 8 weeks*
Limited email access to Daniel	✓	✓	✓	✓	✓
Pricing (USD, p.a.): Private Investors	*complementary*	Please contact us for further information.			
Pricing (USD, p.a.): Institutional					
Discount on Daniel's Speaking or Consulting fees [1]:	30%	10%	15%	20%	30%

**To approved private clients only (non-Australian Citizens).*

^Bespoke monthly chart pack: a client-specific customised selection of 15 markets or stocks, updated monthly, with an ability to change up to 4 securities every two months.

°°Australian Clients who have invested money into our Managed Portfolios via Linear or Netwealth, subject to account size minimums.

[1] Should a Research Client request the additional consulting services of Daniel or his presence at an event as a Speaker, Workshop Facilitator or Consultant... provided the event is organised or sponsored by the Prerequisite Research Client, Daniel will discount his consultation/speaking fees by the indicated amount (not attributable to travel or accomodation costs incidental to the event or consultation).

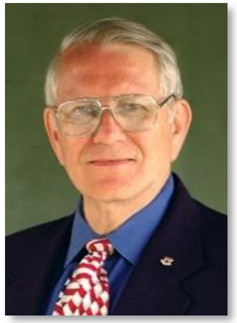
Pricing is designed to be absorbable for investors managing more than $0.5m USD

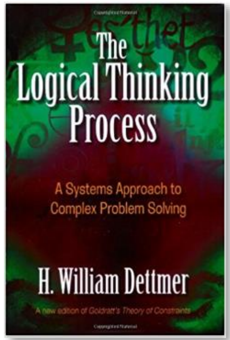
Testimonial: *World renowned expert on 'Systems Thinking'…*

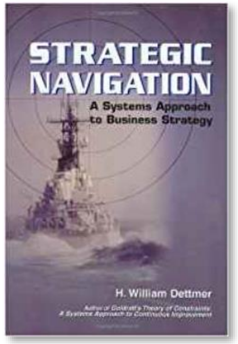
*"Daniel Want's talents and skills extend well beyond the financial world. He possesses an ability that all too few do in today's world—**a systems perspective**. In our world of international global business, the interdependencies among companies, markets, cultures and regulatory environments, the capacity to understand complex interactions and their effects requires an innate understanding of cause-and-effect. Daniel demonstrates that capacity daily. He is one of the most skilled at this I've ever seen.*

"My personal forte is not finance, international or otherwise. It's in the realm of analyzing and predicting the behavior of complex systems. I've made a career out of doing that in Fortune 500 companies, and I can instantly recognize systems thinkers when I see them. Daniel is the equal (or better) of any that I've encountered in any of those companies.

"His understanding of systems complements his integrity, self-discipline, and ethical foundation. The net result is an individual of the utmost capability, reliability and dependability—someone whose judgment can be relied upon in the most critical of circumstances. As a former pilot in the United States Air Force, I can truthfully say that I would be honored and comforted to go into combat with Daniel Want on my wing. I can think of no higher praise than that."







H. WILLIAM DETTMER
Senior Partner, Goal Systems International (USA)
www.goalsys.com
Author of the following books:

- "The Logical Thinking Process: *A Systems Approach to Complex Problem Solving*"
- "Strategic Navigation: *A Systems Approach to Business Strategy*"
- among many other books authored & co-authored.

Who is Bill Dettmer?

- A US Air Force officer and B52 bomber pilot for 23 years during the cold war. Experience in high-level military operations, logistics, strategic planning, operational planning, training, large-scale systems deployment, project management, and contracting. Delivered 20 facilities construction projects on time and under budget for foreign government. Successfully completed multi-national logistic support project 30 percent ahead of schedule and 25 percent under budget. Directed a medical services program treating 110,000 people in remote third-world locations in less than 14 months.
- Since retiring from the US Air Force in 1989, he has been much sought after internationally by Fortune 500 Companies in a consulting capacity, primarily as a corporate problem solver and strategist, but also for directing large-scale business process and highly-successful performance improvement projects. A partial list of his clients includes United Health Group, Raytheon Missile Systems, U.S. Air Force Software Technology Center, Seagate Technology, U.S. Navy Sea Systems Command, Tellabs, Lucent Technologies (both in Europe and the US), Western Digital Corporation, NEC America, Kauffman Products, Inc., Kendall Healthcare Products, Ericsson Cellular, Weyerhaeuser, Boeing, Lanxess GmbH (Germany), INESA and ICI/Inca Corporations (South America), Orrcon Ltd. (Australia), and Qualiplus, S.A. (Brazil).
- Author of a wide array of management books and recognised world leader in Theory of Constraints management methodologies and training.

Disclaimer

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