



**Bank
Financial
Group**

TD Economics

Special Report

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POLICY PRESCRIPTIONS IN THE AGE OF GLOBAL SYNCHRONICITY

Among the deficit countries the task of raising domestic saving is particularly urgent in the United States, given the magnitude of that country's reliance on external funds and the sharp decline in the private saving rate in the past several years. These factors, coupled with a net investment performance that is poor by historical standards and in comparison to other industrial countries, underscores the vulnerability of the U.S. economy to a possible reduction in the inflow of foreign saving.

- IMF World Economic Outlook - April 1989

The more things change, the more they stay the same. That's the lesson of the 20-year old quote above that could just have easily been written in the last year. Moreover, vulnerabilities rarely strike in the way we fear and often linger longer as fear before striking. But while the costs of doing nothing, as we have seen, can be severe, precaution comes at a cost, too. When it comes to preventing financial crises, that cost is often reducing the near-term availability and/or price of credit to individuals and businesses. This certainly means lower peaks for growth, but we hope shallower valleys, as well, if implemented successfully. In the current global environment, we have seen an unprecedented synchronicity of growth followed by an unparalleled synchronicity of woe. This synchronicity, however, has its origins in real – and in many cases positive – developments in the evolution of the global economy. This complicates the answer of what should be done to prevent this from ever happening again. This paper provides a framework for thinking about the nature of the global economy and synchronicity, and, in that light, provides a critical overview of the evolving policy prescription debate.

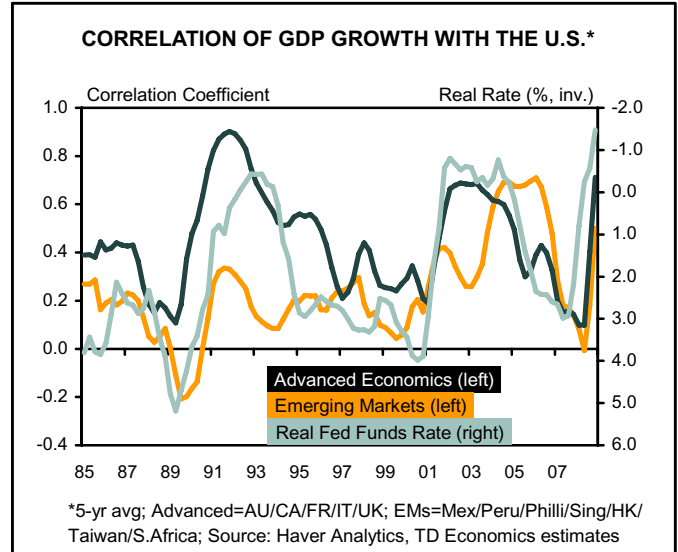
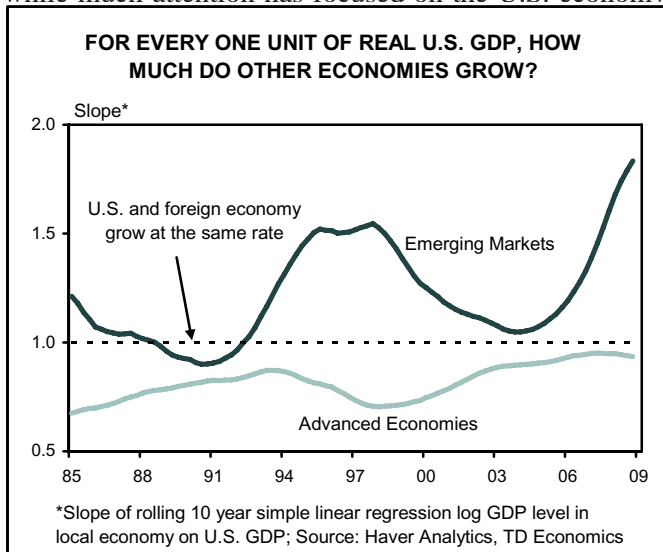
HIGHLIGHTS

- The most notable feature of the global recession has been its synchronized nature.
- This synchronization is ultimately driven by structural – and in many cases positive – developments for the global economy.
- These structural changes include globalized production chains, financial industry specialization, global imbalances, and inflation targeting.
- The debate on regulatory reform has focused on the “fallacy of composition” – a system based on ensuring the health of individual banks does not necessarily guarantee the health of the system.
- There is an analogous fallacy of composition when it comes to the global economy – the above structural changes improved individual economies but led to stark shifts in production, demand, and markets with the potential to drive bubbles and global systemic risk.
- China and India are better off for developing their manufacturing sectors, but this quickly shifted profits and savings around the world and impacted bond yields. Low and stable inflation and the ability to hedge risks certainly improves the ability to plan, but are policymakers with the same playbook potentially driving global supercycles?
- Policy prescriptions must account for these dynamics as they are unlikely to go away.
- Ultimately, any vulnerability risks being taken advantage of, so we should ensure that changes focus on the potential issues of the future, such as fiscal largesse, and not just the past.

Signs of synchronicity

The deterioration in global industrial production, global trade flows, and global equities during the current recession has been sharper and deeper to date than anything in the past, including the Great Depression.¹ Of the 25 largest economies in the world, that together account for over 80% of global production, only three managed to grow on a quarterly basis in the final quarter of 2008 – China, India, and Indonesia. And in the first quarter of 2009, only South Korea managed to join that list by barely eking out a positive figure, while the majority of the remaining 21 large economies saw the pace of economic contraction accelerate at the start of 2009. Although the depth of the economic recession has indeed been notable in several countries, we believe that the most important feature of the current global recession has been its synchronicity – never before has the global economy deteriorated so quickly and in such a unified fashion. We provide three metrics here which highlight and quantify this synchronicity over time:

The Ptolemaic Economy (strength of attraction): The first metric makes the perhaps somewhat overindulgent assumption that the world revolves around the U.S. and asks, for every one percent change in U.S. real GDP, what is the pace of change in foreign economies?² Over the last 25 years, emerging markets have almost always grown faster (or contracted faster) relative to the U.S. while advanced economies have always grown slower (or contracted slower). But, the growth (or contraction) of each relative to the U.S. has never been stronger than it is now. So, while much attention has focused on the U.S. economy,

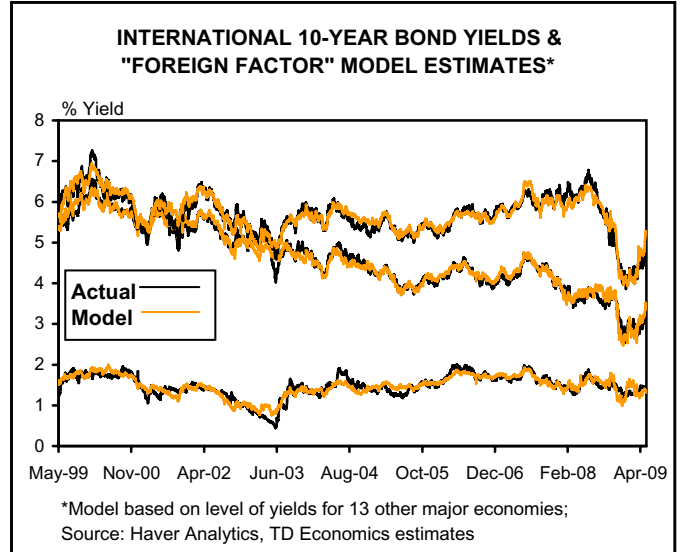


what has been exceptional is everyone else. Not only that, relative EM and advanced economic growth has tended to move in opposite directions, perhaps balancing out the finite global resources and capacity. Over the last five years, both saw a simultaneous strengthening of the relationship with U.S. GDP growth.

The Newtonian Economy (correlation of attraction): Turning to the simple question of motion, the next metric looks at the correlation of U.S. economic growth with that of other economies – when the U.S. economy expands or contracts, what is the propensity of other economies to do the same? By this account, there has been nothing exceptional about advanced economies. They always remain positively correlated with U.S. growth, but this ebbs and flows, with the strongest relationship in the period just prior and during U.S. recessions. For EMs, on the other hand, the relationship with U.S. growth tended to be weak. There was little correlation with U.S. recessions until the five-year period preceding 2004-2006 and this has now once again shot up. There is further evidence here that the U.S. economy and EMs became more intricately tied together in recent years than in the past. Even more beguiling is that the correlation of growth is itself very positively related to the level of U.S. interest rates. As the real U.S. Fed funds rate falls and presumably the U.S. economy slows, economies become even more correlated with the U.S. economy. Whether tied to the Fed, U.S. demand, carry trades, or capital flows, there is a strong global monetary cycle. For example, after the tech bust, the central banks in the U.K. and Australia cut interest rates by two percentage points and began raising rates rather soon while

the Fed slashed rates below 2% and kept them there for some time. But, this brought hot money flows into the latter and complicated monetary policy.

The Einstein Economy (speed of attraction): These economic-financial linkages become even more apparent when looking at our third metric of synchronization. In it, we forecast the level of 10-year bond yields in one country with absolutely no information whatsoever on that economy itself. We simply assume that bond yields in country X are a function of the current level of yields in 12 other advanced economies at that time.³ Lo and behold, these forecasts over the last decade come extremely close to the actual values for all of these economies. There are two possible explanations for this. Either economies

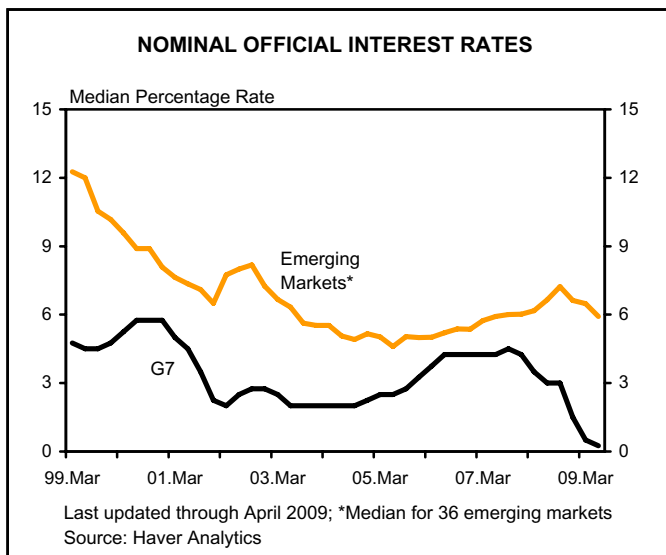
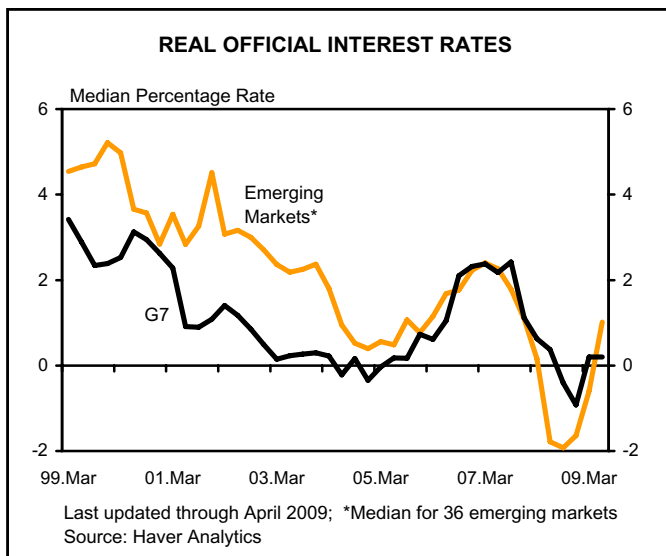


are directly tied together and financial prices merely reflect this, or financial markets are directly tied together and through their movements, integrate the global economy through synchronized interest rate cycles. Regardless, the end result is the same – for better or worse, and especially the latter, the global economy is shackled together. This goes beyond a Copernican revolution and moves straight to a relativistic revolution because everyone revolves around everyone else.

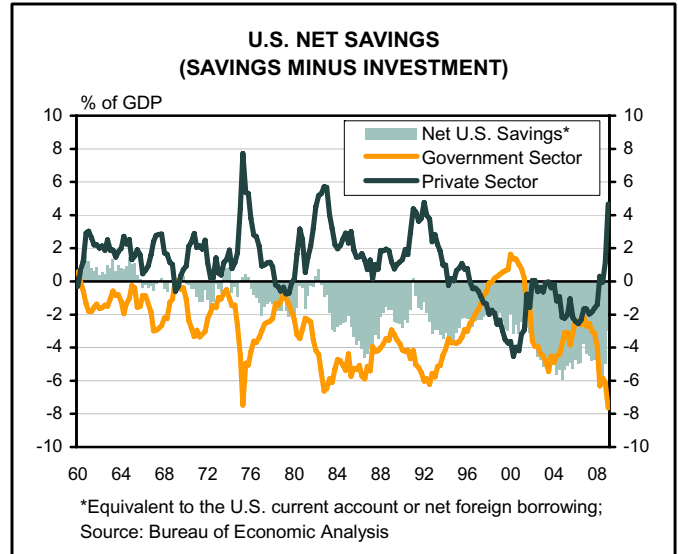
Structural changes which led to synchronicity

The existence of synchronicity does not itself explain the reasons for it. For this, we look at the current global recession. Ultimately, we see two triggers which precipitated the global economic collapse. First, in the fall of 2008, the collapse of nominal consumer spending in much of the advanced world filtered through in global production chains. While some of this reflected the capitulation of oil prices, the decline was more widespread than that and left large inventories to be worked off. Second, and in some way responsible for the first, the collapse of AIG and Lehman Brothers drove a severe loss of confidence that triggered a flight of capital out of EMs to cover losses and capital requirements elsewhere. This also fed through into a severe disruption in trade financing availability during the peak holiday shipping season.

But ultimately, we view these two events as the straw that broke the camel’s back. We see four real structural changes that have tied the global economy together and increasingly so over the last decade:



1. **Industrial production specialization:** Many EMs were brought into the global manufacturing process, and fueled nascent domestic growth and commodity price demand, but ultimately left exceptional EM GDP growth even more beholden to ongoing consumer spending in advanced nations. **This fed into increased global trade flows, as well as the stock of EM profits (i.e. the much vaunted savings glut).**
2. **Financial industry specialization:** This dispersed risk, but left each cog more beholden to the others than ever before and allowed the securitized products based on inflated assets to be dispersed into unrelated sectors and around the world. **This fed into increased global capital flows, especially when we account for all the use of offshore tax havens and SIVs.**
3. **Global imbalances:** Emerging markets, especially Asia, maintained undervalued exchange rates, which helped foment economic growth for EMs while building up international reserves to prevent “last-generation” financial crises (i.e. Tequila crisis, Russian government default, Asian flu). This, in turn, depressed long-term interest rates in advanced nations, fueling domestic asset investment and spending. **This fed a build up of global production capacity based on an unsustainable level of consumer demand.**
4. **Inflation Targeting:** So many central banks have moved to inflation targeting regimes as the holy grail of monetary policy. But we could argue we’ve focused so much attention on global imbalances and the Bretton Woods

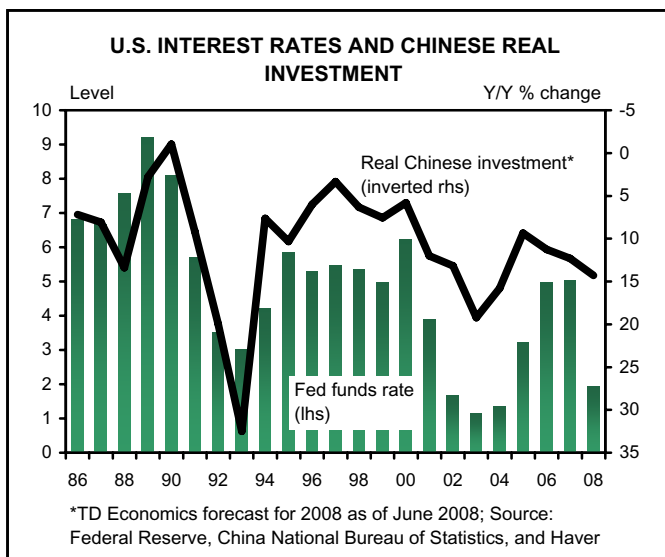


II system of de facto fixed exchange rate regimes that we failed to notice that we’ve arguably moved towards a global de facto fixed monetary policy regime, with so many economies running from the same play book. **This fed increasingly correlated economic growth and monetary policy cycles, especially for EMs.**

Policy prescriptions in the age of synchronicity

We should not lose sight of the fact, however, that the four structural changes outlined in the previous section provide benefits for individual economies and the system as a whole. Globalized manufacturing has lifted at least hundreds of millions out of poverty, reduced costs for consumers, and laid the groundwork for a potentially more diverse and robust global economy in the future. Global imbalances provided a means for speeding up this global convergence, as well as protecting those gains from what had become the typical EM financial crisis. And, ensuring low and stable inflation increases the ability of everyone to plan their spending and savings decisions, a goal which is further advanced with the ability to disperse and hedge risks – assuming we accurately know the risks we are hedging and inadvertently taking on.

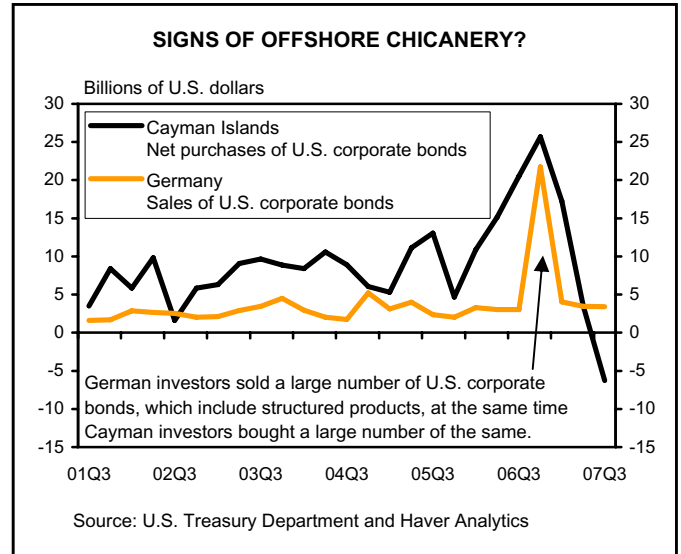
However, in the debate on the regulatory changes needed to avoid a similar crisis, there has arisen a concept known as the “fallacy of composition” – namely that a regulatory system based on ensuring the health of individual banks does not necessarily guarantee the health of the banking system as a whole. We would posit that there is an analogous fallacy of composition when it comes to



the global economy. Structural changes that improve the well being of individual economies can still lead to structural shifts in economic production, demand, and/or financial markets that have the potential to drive bubbles and global systemic risk. It's hard to argue China and India, among others, aren't better off for having developed their manufacturing sectors, but this drove a massive shift in savings around the world in a short period of time. Having low and stable inflation and the ability to hedge risks certainly improves the ability for an economy to plan, but is the world better off being on one massive supercycle when more and more policymakers are using the same economic playbook?

To deal with systemic risk within and between financial markets, there is now a stated need for "macroprudential regulations" – regulations that go beyond individual firms and focus on the health of the financial system and economy as a whole. A number of common themes have emerged, which we organize along seven areas in the annex at the end of this report. But any change must account for the "rules of the game" and realities of the global economy that we have highlighted above. Just as seat belts were not needed in the early days of the auto industry because cars simply could not go that fast and roads were devoid of traffic, systemic regulations were simply not a necessary invention with a less integrated global economy. A faster age requires safer cars, not scrapping them altogether. After all, we should keep in mind that had U.S. lenders made fewer subprime loans (either because of self-restraint or diminished demand for structured products by savvy investors who understood their inherent risks) and Western European lenders used fewer synthetic products and made fewer loans to Eastern European borrowers (particularly foreign currency loans), we would have likely avoided this global crisis.

But, the above four structural changes are likely to continue, and rather than limiting the full potential of the global economy, we must focus on appropriate capital and leverage ratios to ensure the maximum safety features are installed. We must have full transparency, at least between financial institutions and regulators and between credit rating agencies and investors, because ultimately you can't fight what you can't see or don't understand. And we must have central banks and regulators with the teeth to take the punch bowl away from hungry investors and firms just when the party is getting started. Regulations are not worth



the paper they are written on if they can't be enforced.

We should also remember that many of the issues we are trying to resolve, such as subprime, should have been addressed by individual countries or even companies. That they were not is as much the failure of individual common sense as it is of any systemic regulatory body. But U.S. subprime lending has implications for the macroeconomy that cannot be ignored and a country-centric approach is needed to address the issue. While Canada has been highlighted as having the safest banking sector in the world, 40-year mortgages with little to no initial equity that were temporarily available could have been dangerous and developed into a problem over time, as well.

History as a cautionary tale

In concluding, it is interesting to look at some of the solutions put forward during the EM financial crises in the prior decade and how few truly came to fruition:

- *GDP growth-indexed sovereign bonds*: It was thought this could help align the cyclicity of government debt service costs with the cyclicity of government finance by reducing government obligations during economic slowdowns.
- *Sovereign Debt Restructuring Mechanism*: It was thought this could streamline the process of sorting through creditor claims on governments in the event of a standstill and government default on its debt.
- *Large scale balance of payments lending from the IMF on prequalified basis*: This was the only of the above

solutions that was implemented, and this was just finally brought into existence a couple of months ago, with support going to countries like Mexico and Poland.

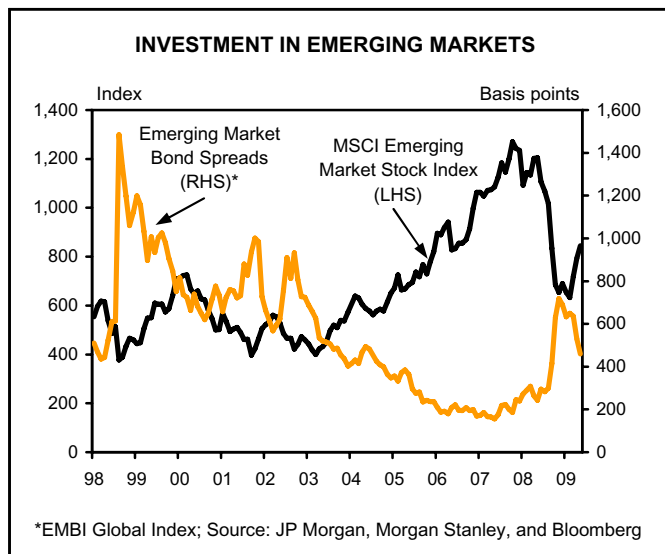
The primary reason that these measures ultimately were not put into place was that the world changed. There were no major EM crises after Argentina and Turkey earlier this decade until now, partly as a result of the massive accumulation of international reserve assets that has come to be associated with global imbalances. Of course, what this did do is lead EMs to take on international reserve assets in order to forestall local currency appreciation. But, once reserve accumulation was stopped, it would start the currency appreciating again and ultimately melt away the value of the reserve assets bought in the first place, ala China.

But this is the point isn't it? Any vulnerability risks being taken advantage of. Imbalances lead to problems and there are still imbalances out there that could undermine regulatory attempts. The best regulations can hope for is to mitigate yesterday's crisis, but imbalances may spark tomorrow's catastrophe.

Look at the massive fiscal deficits being taken on in some advanced economies right now – the U.S. and U.K. in particular – as a possible future vulnerability that must be addressed and not swept under the rug. For the U.S. debt position, while it is very cheap for the government to borrow now, by about 2013, TD Economics estimates suggest U.S. interest payments on the national debt will be between 3-4% of GDP, and exceed 4% of GDP by 2018.

The fiscal balance excluding interest payments must therefore be in a mirror surplus position simply to avoid increasing the U.S. debt burden over time due to capitalizing interest payments. The U.S. system has never shown much success in following fiscal discipline in the past due to the disparate political interests who hold sway over spending decisions so this does raise the risk of a U.S. debt downgrade a decade in the future.

Outside of this, in the more near-term, quantitative easing may be helping to alleviate the depth of the recession in countries such as the U.S. and the U.K., and we expect it will be removed in an appropriate and measured way as the economy recovers without stoking undue inflation. But accidents happen, and the potential costs of quantitative easing should not be taken lightly. Additionally, we should start thinking about what it might mean to the global financial architecture if/when U.S. consumers sustain a higher savings rate, as well as when baby boomer retirements lead to structural changes in asset demand, productivity, wages etc. Moreover, with EM importance likely to grow over time, we should expect some stock changes in the way the global system is organized, and we cannot always assume this will go smoothly. We must not become complacent about the risks. As we can see from the 20 year old quote at the start of this report, many of the risks we are living with today, like global imbalances, have been around for some time, and if simply ignored, eventually they do tend to come home to roost.



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Annex – Policy Recommendations

1. *Capital Requirements*: Raising capital requirements may cover things like structured products and collateralized debt obligations in addition to simply covering loan losses. Also, something must be done regarding the regulatory framework, or lack thereof, covering off-balance sheet items such as SPVs and SIVs. Most importantly, any changes must have the teeth needed to take the punch bowl away just when the party is getting going. But broadly speaking, did we really have insufficient capital or inadvisable leverage/lending/liabilities in the first place? You only need capital as a buffer for when the economy turns bad and loans sour. So are we happy with the positions banks had but just think they didn't have enough put aside for a rainy day? Would higher capital buffers have prevented the housing bubbles that formed around the world or provided simply more cushion for when the bubbles burst. With correlated economies come correlated risks and changes to capital requirements alone will not address the problem; however, it has been recommended that they will address two distinct problems:

Systemic/Counterparty Risk (the risk/cost of my default given others)

- a) *Systemic Insurance*: This suggestion would have financial institutions pay a fee based on their size as a sort of insurance premium to help defray the costs of a potential government intervention in the wake of a crisis. This seems to formalize and put a price on moral hazard – if you are going to admit that moral hazard exists, is it such a bad idea to try and charge for it and internalize the externality, rather than just deluding ourselves that we'd ever let anyone fail? As with any insurance, it runs the risk of creating more of the risky behavior we were trying to avoid (if you've insured the downside, what's there to lose)? Is an alternative that ensures everyone is small enough to fail any easier to achieve in the real world?
- b) *Conditional Value-at-Risk (CoVaR)*: The value-at-risk of financial institutions conditional on other institutions being in distress. This would allow regulators to quantify an institution's susceptibility to systemic risk, and through that, provide a benchmark for setting an appropriate capital re-

quirement.

Pro-cyclical capital (save in the good times to offset the bad)

- a) *Flexible capital requirements*: Just as foreign reserves cannot easily be used to invest in the domestic economy but must remain on standby to maintain a fixed exchange rate regime, fixed capital requirements for firms – i.e. the need to hold a minimum level of tier 1 and tier 2 capital under Basel II agreements – just ensures that there is some buffer between distress and insolvency. As long as there is a fixed requirement to hold a certain share of capital, then that capital cannot be used for other purposes, such as the provisioning for loan losses when times are bad. Allowing these capital requirement thresholds to vary across the economic cycle could increase the “rainy day” funds financial institutions are mandated to put away in sunny times, while allowing them to use the money available to be deployed in a rainy day. However, this remains tied to some degree to questions of appropriate scales and accurate forecasts of where we are in the cycle, something we often don't know until it is too late. So, tying capital levels to economic cycles may still be problematic
2. *Leverage Ratios*: Holding capital against potential losses can help insure against bankruptcy, but the question remains whether we should impose an outright limit on the amount of leverage a firm can take. This need not be a hard and fast limit. Stress testing and risk-weightings could be used, just as it is currently used to test and risk-weight capital, to similarly risk-weight the leveraged position of each financial institution. For example, leverage used to buy Treasuries could be less risky than leverage used to purchase subprime securities. Prior to the current crisis, the average leverage ratio for a U.S. investment bank was 40:1, which seems excessive given the failures seen in that sector. Meanwhile, the average leverage ratio among U.S. commercial banks was 26:1 and for an average Canadian bank was 18:1, so something closer to that range would seem a better place to target.
3. *Transparency*: You can't fight what you can't see. But how much transparency? We don't let companies know the health status of employees or potential employees

to prevent potential discrimination. Would too much transparency drive exactly the sort of failures we are trying to avoid by highlighting corporate vulnerabilities to markets before they can be addressed?

- a) *Products*: Improved transparency is needed not only in financial institution balance sheets but also in derivative instruments, structured products and other complicated debt securities (this includes more information regarding the underlying assets like real estate, credit cards, etc). This should allow regulators to monitor if any particular sector is overheating.
- b) *Entities*: While regulations focus on the products that need to be better regulated, we still must address the entities that need to be regulated. Hedge funds, pension funds, sovereign wealth funds, etc. must fall under the rubric of any regulatory regime because we cannot effectively regulate products if large and growing sectors of the financial system remain outside of effective oversight. For example, hedge funds do not fall under the mandate of OSFI regulations in Canada. Moreover, off-shore, out of sight, off balance sheet structures must be open to daylight.
- c) *Modalities*: Transparency need not just mean opening up to the public. Canadian banks have conducted far reaching stress tests well before the recent stress test exercise in the U.S. of 19 of the largest banks. However, the results of these tests are only as good as their inputs and assumptions. To say to a bank “GDP will fall by 2% and the unemployment rate will rise to 10%, now tell us what this will do to your balance sheet” is not so useful because many different plausible scenarios could give rise to this outcome. So there must be input from institutions on what the scenarios and details are. Perhaps, just as we use war games to ensure military preparedness, or use hackers to improve on computer security, we should think about an agency which devises scenarios specifically to exploit the vulnerabilities of financial institutions. It is the regulators job to essentially “break the bank.” Rather than asking if a scenario is enough, they create a scenario that is enough and work from there on backfilling the needed changes to address the vulnerabilities. This need not be a

public exercise, but it would require transparency between the regulators and financial institutions.

4. *Risk Management*: Combined with improved transparency, regulators should be able to monitor the degree of leverage taken by financial institutions broadly defined to include all players including insurance companies, reevaluate the risk of structured products and derivative instruments, and push banks to perform regular stress tests in order to establish whether their capital reserves are capable of withstanding another black swan event. Questions on executive compensation ultimately come down to risk management, as well. This is something that can be dealt with on a country by country basis as labor laws and financial structures differ markedly across nations. Ultimately, the question is ‘are actors compensated in a way that does not give them an incentive to take on excessive or near-sighted risks.’

But there is a difficult dilemma related to systemic risk. To minimize systemic risk, we would want a diverse set of business models and strategies, where the risk of failure of one institution is not related to any other. However, knowing this, an optimal strategy for each institution might be to mimic the near-term successes of others, knowing that should it lead to losses down the road, a failed industry will require official support, whereas one failed institution may not. It’s simply the modern equivalent of the U.S. Revolutionary War saying that “we must all hang together or else we will all hang separately.” But, regardless of the regulations, regulators must have discretionary teeth if they find out any particular sector is starting to overheat. Otherwise, their work is of questionable use.

5. *Credit Ratings*: Credit ratings never really evolved with financial innovation, so you had things like ABS, MBS, credit wraps, etc that found ways of masking themselves as safe products and proliferating the amount of risk being taken. There will either be a need to expand the available number of ratings or maybe create a new subsection that covers structured products. But the potential for an ongoing conflict of interest in the funding model for credit rating agencies when they are paid by issuers remains, with an ongoing incentive to provide better ratings than are warranted. This could be corrected if rating agencies were paid by clients look-

ing to buy the products instead; however, this would then raise free rider problems and the practical issue of how a credit rating agency would collect small fees from numerous sources.

Ultimately, just as the usefulness of nutritional information provided on groceries remains tied to how the consumer uses them, the usefulness of credit ratings will remain tied to how well investors use them. European changes approved in April provide for an easier ability of investors to verify the accuracy of assumptions and models used by the rating agencies over time. Additionally, they allow for differentiating structured products from others, and make some progress in separating advisory and rating functions and addressing the conflict of interest issues above.

6. *Future Role of Central Banks:* The principal immediate concern here is whether or not the interest rate is sufficient to aim monetary policy at specific problems. If it's not, and we would argue it certainly isn't, then current facilities many central banks have in place will become permanent additions to their monetary policy toolbox (such as being able to inject liquidity into specific sectors of the financial system). Outside of this less controversial area, we see two key areas where the likely or correct course of action is less clear.

a) *Asset bubbles:* The "Greenspan" approach of assuming the market knows best and using interest rates to clean up after a bubble has burst has been brought into question. Should central banks explicitly target asset prices, or "lean against the wind?" But as with pro-cyclical capital ratios, it is not clear whether monetary policy can target an appropriate level for asset prices, but perhaps being partly right here is enough. Home price measures that are already included in CPI inflation could be used to include these asset prices in the target, but in many cases, home price measures in inflation are themselves imputed and closely correlated with interest rates. This would make them rather circular to use to target an appropriate level for interest rates. And, thinking about liquidity more broadly, if we more closely controlled these prices, would asset bubbles simply move to some other unregulated sector of the economy?

b) *Regulators:* Central banks are already privy to sen-

sitive market information and as such, are the most likely to help administer some of the new regulations outlined above. But, if the world economy is so tied together, how can central banks have the teeth and authority to address global imbalances? There would still need to be some effective international agreements or organization that superseded national authority. Once again, these regulators and regulations must have teeth. We already have a copious amount of international organizations and statutes. What we lack is the authority to drive change.

7. *International financial architecture:* Switching to the SDR as a reserve currency distinct from the USD, this has the potential to spread reserve demand across major currencies. This could, in turn, reduce downward pressure on U.S. interest rates and address global imbalances. But, to be functional, this would require the IMF becoming something close to a global central bank, with the independent authority to issue and soak up SDR liquidity as the environment warranted and a likely more democratic IMF with a significantly strengthened EM voice.⁴ While this remains a long shot, China has in general made a number of strides in creating "facts on the ground" to move away from the dollar, including establishing yuan swaps, promoting a long-run plan to develop Shanghai as a global financial centre, and calling for SDR-denominated debt. Russia has recently agreed to purchase SDR-denominated notes from the IMF, which is also a preliminary step which would support an international currency regime divorced from the U.S. dollar.

Endnotes

- ¹ See Global Synchronicity at http://www.td.com/economics/special/rk0209_global.pdf as well as A Tale of Two Depressions by Barry Eichengreen and Kevin H. O'Rourke at <http://www.voxeu.org/index.php?q=node/3421>.
- ² We have previously discussed the important role played by U.S. demand in driving global production (see Global Economic Decoupling: Is the Global Cookie Jar Still Out of Reach at http://www.td.com/economics/special/rk0108_global.pdf) or in influencing global monetary policy and financial markets (see Tarnishing the Image of the Emerging Market Gilded Age at http://www.td.com/economics/special/rk1106_market.pdf).
- ³ This same methodology underlies the TD Securities cobweb model of global bond yields produced by TD Chief Economics and Bond Strategist Eric Lascelles.
- ⁴ See Real Work Remains to Repair the Global Economy at http://www.td.com/economics/special/rk0409_g20.pdf and Why China Wants to Dump the Dollar at http://www.td.com/economics/special/rk0309_china.pdf.

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