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RECENT DEVELOPMENTS IN REGULATION IN THE LIGHT OF THE GLOBAL FINANCIAL CRISIS: IMPLICATIONS FOR DEVELOPING COUNTRIES

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Introduction

This paper will describe and evaluate the main regulatory changes that have been carried out in response to the financial crisis via Basel 3, the US Dodd Frank Bill and other initiatives, with the goal of drawing policy implications for emerging market and middle income developing country financial regulators and policy-makers.

Prior to the financial crisis, the global financial system failed to fulfill its two main purposes: managing risk and efficiently allocating capital. Many emerging market banks did not have significant exposure to “toxic assets”, and were better able to withstand the financial market crisis than banks in industrialized countries. Some countries, such as Brazil, imposed restrictions on derivatives and naked short selling prior to the crisis, and instituted reserve requirements well in excess of Basel 2 minimums. (See UN, 2010.) Nonetheless, as markets continue to develop, financial institutions in middle income countries are becoming more exposed to the types of risks that hobbled the global financial system. Furthermore, in many middle income countries much of the assets of the financial system have traditionally gone into government paper rather than lending to the real economy, whereas access to credit to small and medium sized enterprises (SMEs) is necessary for sustained economic growth and development. The challenge for emerging market and middle income policymakers is to

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encourage lending to the real economy, while protecting the stability of the financial system in an increasingly globalized economy.

Policymakers need to increase the resilience of their banking system to domestic and external shocks, improve the functionality of the financial system as a means of intermediating credit to the private sector, especially SMEs, and prevent abusive lending practices (such as those in the subprime market in the US) as markets develop. In this paper, we highlight aspects of the recent regulatory changes that we consider to have priority for middle income countries, such as counter-cyclical regulations, strong capital requirements focused on the quality of capital, regulations of derivatives, and evaluation of banks' business models by regulators, as well as measures to increase credit to the real economy. We start with a discussion of lessons from a new business model used by many financial institutions in industrialized countries prior to the crisis, and then analyze lessons from Basel 3, the Dodd-Frank Act, the Consumer Protection Agency, and EU-initiatives.

Properly regulating domestic finance also requires complementary capital account regulation. Given that the paper is already ambitious in its coverage, we will, however, not explore this issue (but see for an excellent early survey of options, Stiglitz, Ocampo, and Spiegel, 2006). Similarly, we do not explore in detail the implications that the ongoing developed countries' sovereign debt crisis may have on future regulations, though these may be quite significant.

New business models of banks spreading financial instability- Evidence from the crisis

One critical element in the development of the financial crisis has been the new "originate-to-distribute" (OTD) business model of banking. OTD is based on intermediation of credit-risk rather than on the traditional bank model of holding credits on the banks' own balance sheets. In this model banks loans are warehoused on the bank's balance sheets, securitized, and then sold to investors. The theoretical justification for such securitization is that by combining assets into a pool, investors are better able to diversify risk, thus increasing the efficiency of capital markets and attracting new financing. In fact, securitization did draw substantial amounts of new funds into the US housing market. The problem was that the inflows eventually turned into a bubble, leading to the collapse of the entire global financial system when it burst.

Over time, the asset backed securities used in the OTD became increasingly complex, so much so that it was often difficult for investors – and rating agencies – to value the risk in many of the securities. Further, many of the securities had embedded leverage that increased systemic risk. For example, banks often guaranteed the securities to sweeten their appeal to investors, so that the banks were obligated to repossess the underlying assets in the event of defaults or credit downgrades, as was the case during the crisis. Banks thus used off-balance sheet vehicles and guarantees to amass a larger implicit exposure to mortgage assets than they had officially recorded, causing large damage to the balance sheet of these institutions (Citibank being the prime example).

One of the byproducts of the OTD model has been an increased reliance on short-term funding through the wholesale banking market to finance their warehoused loans and off-balance sheet obligations. Although banks have always tended to have maturity mismatches, in traditional banking, short-term liabilities are mostly in the form of bank deposits, which are considerably less volatile than the wholesale market (due to deposit insurance and other forms of protections).

The case of the British bank, Northern Rock, provides a good example of how the OTD model based on short term financing can threaten financial stability. The most famous bank run in the crisis, the case of Northern Rock might have appeared to be a typical bank run, with people forming queues in front of the bank to withdraw their money. But as Hyun Song Shin convincingly argues (2010), the real bank run had occurred days before in the wholesale banking market. Northern Rock's business model was to lend to the UK housing market and fund its loans through the international interbank market. It then securitized the mortgage loans and sold them to international investors. However, it became impossible for Northern Rock to sell its warehoused securitized loans during the crisis; it was also unable to refinance the loans through the interbank market. When liquidity in this market dried up, Northern Rock faced insurmountable problems, which contributed to a market panic, exacerbating the crisis.

Policy Implications

The OTD model has several implications for policymakers. First, regulators need to rethink how banks account for risks. Regulators could, for example, require that all transactions are put on the balance sheet of banks. This would improve both transparency (for investors, as

well as regulators) and avoid regulatory arbitrage (see D'Arista and Griffith-Jones, 2010). The issuance of covered bonds by banks, for example, allows banks to refinance in capital markets, while they retain all assets on their balance sheet. This form of refinancing has proven to be very resilient during the crisis. However, in practice, it might still be difficult for regulators to evaluate the risks of many of today's financial market products given their complexity, especially without complex risk systems. Additional measures are needed.

Second, there is a moral hazard problem implicit in the OTD-model. The fact that loans are issued to be securitized means that neither the bank nor the investor is focused on the credit quality of individual borrowers.² This distance between the ultimate creditors and borrowers has led to deteriorating credit monitoring and underwriting standards. In addition, securitization appears to have impeded the renegotiation of distressed loans. A study by the Federal Reserve Bank of Chicago (Agarwal, et. al., 2011) on US mortgages found that bank-held loans were 26 - 36% more likely to be renegotiated than securitized loans, and that modifications of bank-held loans was more efficient, with lower post-modification default rates.

A question that middle income countries may want to ask themselves is the extent to which they want to allow securitization of assets as a mechanism for financing. Nonetheless, some middle income countries, such as Brazil, have begun to build domestic securitization markets. To reduce increasing systemic risk to the financial system through this market, it is important that it be regulated with the goal of addressing the moral hazard issues discussed above. One such tool is to mandate that banks retain a portion of the loan portfolio on their books. For example, US regulators have tried to increase the "skin in the game" for banks that originate loans for securitization by imposing a 5% retention of the loan portfolio on these banks. Many analysts and economists believe that this level is too low to change incentives given the high profitability banks enjoy in the securitization-business. However, with a more realistic ownership percentage, the type of restriction could be a useful tool in countries with burgeoning securitization markets.

Limited securitization via governmental platforms that guarantee high quality standards (such

² Lenders are concerned with whether particular loans are appropriate to be bundled into a diversified portfolio for securitization. The buyers of the securities are often not equipped to analyze thousands of underlying loans. These investors are more concerned with the overall credit quality of the pool, including the extent of diversification and credit enhancements.

as the German True Sale Platform) can also be an option. In conjunction with these platforms, one requirement can be for the lenders to retain a high proportion of the loans made.

Overall, the OTD model, with its emphasis on securitization, led to increased leverage, maturity mismatches, and increased systemic risk. More broadly, the recent crisis unveiled that core capital charges were too low, simple leverage was too high and that the entire banking system was embedded in a pro-cyclical accounting and regulatory framework. The regulatory initiatives have sought to find answers to these different problems with mixed success. The measures they propose will be critically evaluated in the following.

Basel 3, the Dodd-Frank Act, the Consumer Protection Agency, and EU-initiatives

International Regulators acted with relative speed and were able to introduce major legislation within two years of the Lehman bankruptcy. However, many elements of these regulations are not implemented or finalized. Basel 3, which took only two years to be designed is the most wide-reaching agreement and will be presented first.

Basel 3

Basel 3 tries to cure several of the shortcomings revealed by the crisis. It aims at higher quality core capital, it limits off-balance sheet activities of banks via special purpose entities, and it seeks to institute new measures to prevent systemic short-term illiquidity (s. Griffith-Jones, Silver and Thiemann 2011, Meulle 2011).

Dealing with the first level of systemic risk, it approximately doubles core capital, while also time demanding higher quality core capital. In addition, a simple leverage measure of 1 to 30 is introduced.

“The minimum requirement for common equity, considered as the highest form of loss absorbing capital, will be raised from 2% to 4.5% after the application of stricter adjustments. The Tier 1 capital requirement, which includes common equity and other qualifying financial instruments, will increase from 4% to 6% over the same period, while the minimum total capital ratio remains unchanged at 8%. The amount of intangible and qualified assets that can be included in capital will be limited to 15%. This increase in the level of capital comes on top of an increase in the capital requirements for trading book exposures, counterparty credit risk, and exposures to other financial institutions” (Meulle 2011: 14).

These changes are not only relevant quantitatively, but also qualitatively; by deducting goodwill and other intangible assets from core capital, and forcing the banks to hold 85% of core capital as common equity (equity and retained earnings, s. *ibid*). The improved quality of core capital is particularly important in that the capital will be immediately available to banks in the event of a crisis. While core capital is high in middle income countries, the question of the quality of this core capital needs to be posed.

These changes will increase the capacity of banks to better withstand future shocks. Several authors have argued, however, that the established changes are too small to increase resilience of the system enough. Instead they suggest that core capital should be 25% of risk weighted assets (s. Admati et al 2010). Another recent study by the Bank of England (Miles et al 2011), using 200 years of data on a wide range of countries, identifies 50% of risk weighted assets as an appropriate level of capital adequacy given the historical frequency and severity of crises in these countries. This is significantly more than currently envisaged by Basel 3.

These arguments stem from a perspective of social costs and benefits on the broader economy. As recent historical work has shown (Reinhart and Rogoff 2009) banking crises impose severe and long lasting costs, including years of anemic growth and high unemployment, which by far outweigh the private gains made by bankers and rentiers before the financial crisis. In addition to these historically grounded arguments, arguments from economic theory further strengthen this perspective. According to the Modigliani-Miller Theorem, the cost of borrowing should fall with an increase in equity, making overall costs for the banks more manageable. Miles et al (2011) estimate from their data that an increase in equity leads to a substantial reduction in the risk premium to be paid on equity. However, it is important not to equate the profitability of the sector with the social benefits it provides to society. Indeed, as we have seen in the crisis high profitability can be a sign of high future social costs. Furthermore a decrease in the probability of crises to the overall system and the related social benefits far outweigh the reduction in profitability of banks.

Opponents have argued that forcing individual banks to increase capital would stigmatize the banks. This is why this measure needs to be applied to all banks at the same time. Opponents of this measure also argue that a credit crunch to the real economy might occur as banking inter-mediation might become too costly (e.g. recent remarks by Greenspan, as well as studies by the International Institute of Finance, which represents the position of large private banks).

However, Miles and his coauthors estimate that the costs of inter-mediation, when doubling the equity from its current levels in the UK, would only go up by 18 bps. While this rise in costs to credit is substantial, governments can use the increased tax income from bank equity to subsidize those debtors which from a social perspective are especially creditworthy. Furthermore, the whole point of the measure is to reduce leverage in the banking system, especially during boom periods. Thus countercyclical capital requirements, as discussed below, might be an effective tool.

An increase in the capital levels by a factor of at least two thus may be appropriate. A major means for achieving this goal is to require banks to retain earnings, and restrict bonuses or other high payments to their employees, for a sufficient amount of time, thereby slowly increasing the equity of banks.

The measures discussed above address micro-prudential concerns, but do not yet address the macro-prudential dimension. Furthermore, the big question remains as to the appropriate risk weighting of assets. Many of the institutions that were bailed out during the crisis looked well capitalized (s. Admati et al 2010: 59). This, however, is no protection if markets “start recognizing lifetime losses of risky assets all at once” (S&P 2011), leading to a loss of confidence and a drying up of funding liquidity. Therefore, besides increasing the core capital to risk weighted assets, the leverage ratio of banks needs to be reduced. As critics have pointed out, a leverage ratio of 1 to 30, as currently envisioned in Basel 3 requirements, would not have posed any problems to most of crisis-stricken banks before the crisis, as for example US investment banks, that later run into major problems, had that kind of leverage (s. Hellwig 2010). The consequence is a remaining greater vulnerability to a loss of confidence, or as Hellwig puts it: “If equity amounts to 2.5 % of the balance sheet, it also doesn’t take long for concerns about solvency to arise.” Canadian banks, which had significantly lower leverage ratios than US ones, did not run into problems. A lower leverage ratio than required by Basel 3 thus seems appropriate, especially when considering the systemic dimension of leverage. This is also particularly relevant for middle income countries. A highly leveraged banking system will be more vulnerable to shocks and could be forced to shrink its balance sheets significantly in times of crisis as a result of even relatively small losses.

A macro-prudential tool introduced by Basel 3 is a counter-cyclical buffer, within a range of 0% – 2.5% of common equity up and above general core capital requirements. The focus is on

excessive aggregate credit growth on a national level. The advantage of counter-cyclical loss provisioning is that it adjusts the expected loss from credit to the average of a business cycle, thereby fighting excessively optimistic predictions and building up buffers beyond core capital charges as protection against unexpected losses. Banks that do not meet the buffer will be subject to restrictions on capital distributions (dividends, share repurchases, and discretionary bonus payments to staff) until they do. Basel 3 advises the use of the credit to GDP gap as the leading indicator for the calculation of the counter-cyclical capital buffer.³ Repullo and Saurina point out (2011:7f), this measure lacks any relationship to business cycle indicators, and is thus not inherently anti-cyclical. The authors suggest that it even acts pro-cyclically in several industrialized countries (ibid: 13). Therefore national banking regulators need to assess the relationship of the business cycle indicators with the credit to GDP ratios, as well as consider the use of other indicators that relate credit growth to the business cycle (Repullo and Saurinas suggest the deviation of credit growth from the trend) and other measures, such as loan-loss provisioning.

Instead of extrapolating the recent past into the future, loan loss provisioning estimates average credit losses to banks' loan portfolios through the business cycle. They thereby force banks to withstand the temptation of "this time is different"-thinking in boom periods. In order to avoid regulatory capture (which can include intellectual capture, especially during boom periods), clear ex-ante rules, that cannot be changed, on the scale of a counter-cyclical buffer need to be defined. An important additional rule should be that counter-cyclical buffers should never be diminished in boom times; however, they could be increased, for example if credit growth is accelerating and/or there is a great deal of financial innovation (see again Griffith-Jones and Ocampo, op cit). A bi-annual statement that is explaining the view of the regulator on desirable credit growth might be a good additional institutional tool for achieving transparency.

Loan-loss provisioning has proven its worth during the crisis in the case of Spain and is also already used to a certain extent in some Latin American countries. As the current economic crisis unfolds in Spain, partially caused by an excessive mortgage growth, it seems that the charge for Spanish banks may have been too limited. Though Spanish statistical (counter-cyclical) provisions have helped strengthen the large Spanish banks; particularly problematic

³Meaning the deviation of the current credit to GDP ratio from its trend. If the current credit to GDP ratio is the average plus a fixed percentage, additional capital provisioning starts.

in Spain was that specific limits or regulations were not imposed on very rapid expansion of lending for mortgages. This however, does not disprove the idea of counter-cyclical loan loss provisioning, but on the contrary means that regulators should react more strongly to sectorial credit growth which moves sharply out of line. (s. Geneva report 2009, Griffith-Jones and Ocampo op cit: 9). One way to deal with these issues is to introduce “limits on loan-to-collateral value ratios and rules to adjust the values of collateral to reflect long-term market trends in asset values rather than cyclical variations.” (ibid: 4) In this way a self-feeding credit frenzy, fed by rising asset values can be partially contained. Financial regulators might also institute limits to credit growth in certain categories. It is also important to include off-balance sheet items in provisioning.

The newest, but at the same time least certain innovations in Basel 3 regard the regulation of liquidity. The Liquidity Coverage Ratio and the net stable funding ratio are direct responses to the problems of funding liquidity experienced during the crisis. Banks have to prove that they can fund themselves for one month (liquidity coverage ratio) and for one year.

“The liquidity coverage ratio identifies the amount of unencumbered, high quality liquid assets an institution holds that can be used to offset the net cash outflows it would encounter under an acute short-term stress scenario specified by supervisors... The net stable funding (NSF) ratio measures the amount of longer-term, stable sources of funding employed by an institution relative to the liquidity profiles of the assets funded and the potential for contingent calls on funding liquidity arising from off-balance sheet commitments and obligations. The standard requires a minimum amount of funding that is expected to be stable over a one year time horizon based on liquidity risk factors assigned to assets and off-balance sheet liquidity exposures. The NSF ratio is intended to promote longer-term structural funding”. (BCBS 2010: 3).

The liquidity coverage ratio is intended to make sure that no re-occurrence of the failure of banks is possible due to liquidity guarantees of banks granted to the shadow banking sector or other reasons. It aims at preventing banks from taking on liquidity risks they cannot shoulder, whereas the net stable funding ratio is aiming to decrease the likelihood of another bank run in the wholesale financial markets. One of their important innovation is to include off-balance sheet obligations of the banks. However, the extent to which these measures will increase the resilience of the financial system cannot yet be gauged, because they will only come into force in 2018 and in the meantime will be tested via impact studies and if necessary adjusted to not disturb the

markets too much. Thus, one might fear a potential softening of these rules during the phase of implementation.

In the meantime, one can say that the liquidity coverage ratio has successfully been applied in the Netherlands, where it originated in 2003, by averting the failure of Dutch banks in the financial crisis, even though these banks had major off-balance sheet obligations. This regulation on liquidity becomes especially urgent if there are trends in their banking sector towards wholesale financing in the financial markets (which is often short-term) and/or the take-up of off-balance sheet obligations, such as the granting of liquidity lines to securitization vehicles.

Regulators in middle income countries should seek to emulate regulations on liquidity, adapting them to their individual circumstances. More generally, the degree of mismatch of maturities seems an important indicator for the extent (both in terms of severity and speed) to which liquidity requirements should be implemented in middle income countries. Regulators want to make sure that if these two markets (wholesale and off-balance sheet) fall into distress it will not cause an immediate threat of banks failures. One can therefore say that those elements of regulation in the Basel Accord which most directly attack the weaknesses in the business models of banks revealed by the crisis are the least certain and the longest away in time. Therefore, banking regulators should seek to counter the threat of illiquidity by ensuring a more appropriate mix of funding which is more long-term oriented. (See also Warwick Commission Report, 2010, for an in-depth analysis of this issue.) If it is technically impossible to monitor the maturity mismatches of banks and thus their liquidity needs on a more fine grained level, banking regulators can, for example, increase the reserves banks need to hold at the central bank up and above what several developing countries already require (s. Griffith-Jones and Ocampo 2009: 15, Ocampo and Chiappe 2003: 93f).

There are many other measures that are currently proposed in the academic realm in order to capture better systemic risk, such as the idea of including systemic risk measures of banks into core capital requirements for banks, such as the CoVar (Adrian and Brunnermeier 2011). The idea is that banks should not only hold equity according to the riskiness of their assets but also according to the risks their failure poses to the entire financial system. In this vein, the Basel committee has recently identified 28 banks qualifying as global systemic banks, which will face additional capital requirements ranging from 1% to 2.5% of risk-weighted assets to

be met exclusively with common equity, the highest quality capital, the Basel committee said. These will be phased in from 2016 until 2019. (which again is very late, s. <http://www.marketwatch.com/story/28-banks-are-global-systemic-banks-basel-group-2011-07-19>).

For regulators in middle income countries, several lessons can be drawn from these measures. Basel 3 should make the banking system safer in the long run, however, in the short run (up until 2018) the changes will not yet be fully phased in, which means that the international financial system will remain unstable in the near future. Furthermore, the fact that the sovereign debt problems of Europe and the US, as well as their implications for those regions financial stability, are unresolved at the time of writing may pose new challenges to middle income countries and the stability of their banking systems. Therefore, regulators in middle income countries should:

- a. Seek to be actively involved in the creation of mechanisms to deal with the failure of large banking conglomerates engaged in cross-border banking in your country (the failure of Fortis, the Dutch-Belgian bank in 2008 is an example of what can go wrong in such a bankruptcy)
- b. Pro-actively investigate the changing business models of their banks in their own countries (very much including branches and subsidiaries of foreign banks), and their exposure to systemic failures of critical elements such as the inter-banking market. If banks take up too much risk, which is not yet properly regulated, it is important to regulate these banks from risks emanating from these markets in order to avoid large losses (s. Thiemann 2011 for such an analysis for the European banking market). As the UN Stiglitz Commission argued, for national regulators to carry out these and other regulations more effectively, it is desirable that foreign banks' presence in middle income countries is done via subsidiaries rather than branches.
- c. Several of the ideas underlying Basel 3, such as counter-cyclical buffers, liquidity ratios, increase in quantity and (especially) quality of core capital, should be integrated into national regulatory frameworks, adapted to local circumstances. There may be a case for middle income countries to accelerate implementation of Basel 3 suggestions to a schedule which is quicker than the slow one of Basel itself, in areas where this is particularly relevant to their financial systems (such as for example counter-cyclical regulation).
- d. Install ex-ante mechanisms to facilitate emergency measures such as the granting of

trade credit lines for the case that trade credit dries up again.

- e. Focus on measures to that encourage the banking sector to lend to the real economy, especially SMEs, while preserving financial sector stability, as discussed below.

The Dodd-Frank Act of 2010

The other major financial initiative in recent years has been the Dodd-Frank Act in the United States, which in its final shape has been more rigorous than initially feared by those concerned with financial stability, but still too weak in some respects (s. Griffith-Jones et al 2010). It aimed at prohibiting proprietary trading of banks (Volcker-rule), the implementation of resolution capacity in order to deal with the failure of large systemically important banks (living wills) and increasing transparency in the derivatives market by forcing most of the trades into central clearing houses. However, significant exceptions were introduced into the Dodd-Frank Act in these and other crucial aspects (eg Volcker rule and forcing all derivatives on the exchanges). Equally or more important, implementation is proving to be very slow and difficult, due to the large amount of implementation studies which are not yet finished, the lack of funding for the regulatory agencies, the increasing political backlash to regulation in a faltering economy, and political changes in the US. In the following matrix we will shortly contrast these measures as they were decided with their state of enactment.

The Dodd Frank bill was signed into law on July 21st 2010 by President Obama. One year after its passage, in total, 80% of regulatory deadlines have been missed. This means that most of the work is far from completed and it is very difficult to assess in how far it will make Wall Street more resilient. In the following we use a chart we have compiled a year ago (s. Griffith-Jones et al 2010: 25f), and expand it by looking at the state of current enactment.

Regulation of Wall Street	Desirable	Rhetoric of the administration	Reality	Enactment
Proprietary Trading of Banks (Volcker rule)	Needed in order to reduce interconnectedness of banks and the probability of default, banks need to stop speculating with comparatively cheap federally guaranteed deposits of their	“In recent years, too many financial firms have put taxpayer money at risk by operating hedge funds and private equity funds ... When banks benefit from the safety net that taxpayers provide	Rule has been adopted. However, the bill will allow banks to hold on to hedge fund and private equity funds equal to 3% of their tier 1 capital. Furthermore, there are problems for regulators to distinguish between proprietary trading and trading for clients,	Volcker Rule becomes effective on July 21 st 2014, with discretionary possibility for the regulator to extend it for three more years (2017). Investments in Illiquid funds can be extended for an additional 5 years (2022). Recent study of financial stability oversight board fails to make a clear distinction

	clients	... it is not appropriate for them to turn around and use that cheap money to trade for profit (Obama, January 21st 2010)	which almost certainly will allow loop holes.	between market making and proprietary trading, thus unresolved. First hedge funds and proprietary trading desks have left some banks.
Transparency and Margins in the Derivatives Market (called Swaps market in the Legislation)	Needed in order to increase systemic stability, as e.g. sellers of insurance (such as AIG) will have to hold capital in order to be able to service their insurance promises. Transparency will also improve understanding of market activity by regulators.	"I will propose strong trading and mandatory clearing requirements, higher capital standards for systemically important market participants, real-time reporting of derivatives trades to regulators and the public and laws which will ensure that all loopholes are closed." (Senator Blanche Lincoln, in a letter to Senator Cantwell et al.)	Transparency and margin requirements will be instituted for all derivatives which can be cleared through clearing houses. For those, for which no clearing houses can be established and those involving end-users will be exempted. The regulatory details of who and what will fall under these categories will be worked out.	The dispute between what can and cannot be regulated via Clearing Houses is not yet resolved. Big question mark over how far the rules will be enforceable in regulations other than the US. Fear of a race to the bottom with respect to Hong Kong and Singapore. (s. McCoach et al 2011)
Swap Trading by Banks (Lincoln amendment)	Should be banned, in order to reduce speculation and interconnectedness of banks and thereby reduce systemic risk.	"In my view, banks were never intended to perform these activities, which have been the single largest factor to these institutions growing so large that taxpayers had no choice but to bail them out in order to prevent total economic ruin." (Senator Lincoln, May 5 th 2010, press report)	Banks will be allowed to keep most of their derivatives desks (such as in foreign exchange). Banks will have to push out to subsidiaries trading of non-investment grade entities, commodities and credit-default swaps which are not cleared through an exchange	Applicable from June 2012, with a 2 year period of discretion for the regulator. Problematic is the large number of exemptions, as banks will be allowed to maintain interest rate swaps, foreign exchange swaps, bullion swaps and others.
Capital Ratios	Capital adequacy ratios need to be increased and definitions of capital tightened in order to make banks more stable in the	<i>In Pittsburgh, G-20 Leaders noted the unique risk posed by Systemically Important Financial Institutions (SIFs)</i>	Some forms of hybrid capital are deemed too risky to be used for capital provisioning. Bank Holding Companies will have to consolidate their capital ratios for their structure as a whole.	Some of the transitions periods are shorter than for Basel 3, so that US banks might face tougher regulation faster. Given that the US wants to adopt Basel 3, there might be some form of alignment of these too (Barnard and

	face of unexpected shocks.	<i>highlighting that in addition to proposals to increase capital adequacy, for banks in general, the FSB should "propose ... possible measures including more intensive supervision and specific additional capital, liquidity, and other prudential requirements."</i> (White House Press Secretary, June 27 th 2010=	Final regulation on how much new capital banks need to raise is pending (awaiting international agreements).	Avery 2011)
The problem of too big to fail	Banks should be reduced in size in order to stop cheaper borrowing for banks which are deemed too big to fail and thus to avoid the high fiscal costs of rescuing huge banks which are engaging in too risky businesses.	Never again will the American Taxpayer be held hostage by a bank that is "Too big to fail" (Obama, January 21 st 2010)	Wall Street regulation does not break-up big banks nor does it impose a penalty on being too big to fail. "Orderly liquidation" is supposed to solve this problem. Further regulation might be imposed by regulators after impact studies. Mergers which would lead to banks holding more than 10% of financial assets are prohibited.	Living Wills and the Orderly Liquidation Authority are about to be instituted and banks start to draw up living wills determining what to do in case of bankruptcy. However, banks are not paying into the orderly liquidation fund to finance the costs of future bankruptcies; (S. Wilmarth 2011). The complexity of wind downs and the danger of loss of confidence have led S&P to doubt that in the future, TBTF banks would not receive support. ⁴

All in all, the current phase of implementation of the Dodd-Frank Act is rather disappointing. While the Dodd-Frank Act does reduce some of the risk taking of large banks, the "too big to fail" issue seems not to be resolved, which increases the likelihood of these banks growing further and having devastating effect if one of them fails. Banking regulators in middle income countries should thus assume that the probability of future financial crises has not been substantially reduced given the fast pace of product innovation, as well as the unresolved nature of sovereign debt problems and the risk they pose to the financial system's stability (s. also S&P 2011 on this point).

⁴ "We believe that under certain circumstances and with selected systemically important financial institutions, future extraordinary government support is still possible."(S&P 2011)

On the question of derivatives regulation, while there is undeniably a move towards pushing more derivatives through clearing houses, two decisive questions remain. To what extent will this regulation be enforceable or accepted globally? And which derivatives will be excluded from the clearing houses? As long as these two questions are not decided, it is impossible to determine the impact it will have on the risks derivatives pose to the financial system. In this respect it seems useful to point out again that clearing derivatives through central clearing houses increases the knowledge of the regulator over the positions in the market. In addition, it transfers the problem of too interconnected to fail towards these clearing houses, which then need to be protected from failure. Derivatives regulations are needed for the financial regulator to assess risks posed by banks and to mitigate them if there is a banking failure. Furthermore, clearinghouses provide transparency to the market itself, which makes risk management easier.

The depth of the sovereign debt crisis, and the role played in it by derivatives, such as credit default swaps, as well as short selling, raises new regulatory challenges, yet unmet, which may have priority in future months. It is interesting that countries like Brazil had previous experience of short selling (including naked short selling) of government debt by financial institutions, which deepened their sovereign debt problems in the past (see Dodd and Griffith-Jones 2007). It is unfortunate that the developed countries were not more sympathetic to such problems in middle income countries; curbing such practices then would not only have helped middle income countries then, but could have restricted excessive pressures on developed countries' government debt or stock markets today. The banning of short selling of stocks by several European regulators again in August 2011 is an interesting development.

A very useful way of pushing derivatives contracts into clearing houses, potentially of interest also to regulators from middle income countries has been suggested by Lynn Stout. She analyzes the regulation of derivatives in the US before 1999, which made the distinction between bets on future price developments and hedges. If derivatives were identified as bets, they were not enforceable according to US law. This required the necessity for speculators to use central clearing houses, in which the parties to a deal agree to honor the deal under private law, even if unenforceable under public law (s. Stout 2011). In this way, speculators were forced into the central clearing house, a pressure which vanished once all wagers on the future became enforceable in US law. Such a regulation could be considered in middle income

countries. Of course it does not resolve the issue of cross-country competition for lax regulation on derivatives. In this respect, the forging of a global agreement on derivatives regulation seems in order, for which the support of middle income countries will also be needed.

Positive Institutional Innovations of the Dodd-Frank Act: The Consumer Protection Agency and the Systemic Risk Regulator

While much of the final implementation of the rules of the Dodd-Frank bill are still negotiated as we write, the Dodd-Frank Bill led to some institutional innovations, two of which we consider especially important for middle income countries. The first large scale measure enacted in the US is the creation of a consumer protection bureau. The agency seeks to counter abusive lending practices and protect consumers, which in part explains the massive resistance of the banking sector against it and its powers. Although the extent of its mandate it is still being debated in the US, a powerful regulator in the realm of consumer protection could be a useful mechanism for middle income countries on their way of increasing access to credit to their populations in a financially sustainable way. Consumer credit is growing rapidly there and this agency can serve to protect consumers from usurious lending practices (for such cases in Brazil and Chile, s. NY Times 23rd of July 2011).

Another interesting and positive institutional regulatory development in the US (and also in Europe), is the creation of a Systemic Risk regulator, which brings together different regulators in order to avoid silo-thinking and to connect different trends in different markets. Given that banking has become so interwoven with other parts of the financial system, such as the money market funds, developing instabilities in one part of the financial system can easily impact another. Again this may be a development that should be considered in middle income countries.

The response of the European Union

The EU has been seen as a laggard with regard to financial regulation compared to the US, a statement which loses some of its veracity given the recent stalemate in implementing the Dodd-Frank Act. The European Market Infrastructure Regulation (EMIR) is currently debated in the European parliament and the European Commission, in which the goal of pushing derivatives to be traded on platforms.

The Capital Adequacy Directives 1 to 3 have already become European law, making the biggest part of Basel 3 a reality from 2013 onwards, the last parts are currently being debated in the Capital Adequacy Directives 4. The three new European regulators (European Banking Authority, the European Securities Regulator and the European Insurance Regulator) will seek to enforce Basel 3 on a common ground, trying to make regulatory definitions of capital etc. unequivocal. This is an important development as thereby national discretion of regulators to support their banking system can be prevented. As such, these developments might be also a good example for a common framework of regulation in the Latin American and Asian jurisdictions.

Conclusions: How do these changes matter for middle income countries?

Middle income countries have been faced with strong capital inflows, at low cost. An important proportion of these funds, however, is driven by short term factors, which can be reversed (s. East Asian crisis, as well as Latin American crises). At the same time, consumption fueled credit growth seems to have taken hold in several middle income countries. Strong counter-cyclical measures by regulators in middle income countries seem appropriate, which could be coupled with stronger consumer protection regulation, which would protect burgeoning middle classes, as well as help build confidence in developing capital markets.

Regarding the impact of international financial regulation, at least in the short term, the fragility of the financial system will most likely not be reduced substantially. The sovereign debt crises in Europe and the problems with the US deficit of course create additional tensions. Financial regulators in middle income countries should employ elements of international financial regulation (e.g. counter-cyclical regulation, possible increases in quantity and quality of capital if these are required, introducing, where necessary the liquidity coverage ratio), which goes to the heart of the vulnerability of banks (assuming excessive risk in boom times, dependence on funding liquidity). Leverage measures should be introduced, though probably with a smaller ratio than is currently envisioned by Basel 3. Furthermore they should support the international push for transparency in derivatives market.

Given that the next large scale financial crisis seems possible, policymakers in middle income countries should get involved in emergency planning for bankruptcy of large scale conglomerates which operate in their nations in order to know what to do in case bankruptcy

occurs. They should encourage or require subsidiaries rather than branches as this gives them larger regulatory leverage over these banks. This is important, as otherwise countries which are not primarily affected by a financial crisis might experience a credit crunch if foreign banks quickly withdraw their money.

Financial regulators need to use their judgment on the business models of their banks in order to identify weak spots such as over-reliance on external liquidity, due to their mismatches between assets and liabilities. Such mismatches should be limited by regulation. They could also be discouraged by requiring banks to account for the maturity mismatch risks via extra capital charges (see Warwick Commission Report, *op cit*).

A measure which is not considered much in the financial regulation of the financial centers is the reintroduction of large reserve balances of the banks at the central banks. These would generate a buffer if banks run into a funding liquidity problems, thereby also reducing the likelihood of these problems occurring. At the same time, they could provide the central bank with a buffer it could use to intervene in funding markets during a liquidity dry up (s. d'Arista and Griffith Jones 2010: 145f).

Equally important, for middle income countries, is to avoid or restrict currency mismatches between banks' assets and liabilities; there is a long history of such currency mismatches leading to increased vulnerability of banks in middle income countries, both in Latin America and Asia, which has become an important factor in banking crises. The seriousness of these problems was again shown in large currency mismatches in Eastern Europe (for example Hungary), leading to very problematic effects in 2007 and 2008. Many developing middle income countries have tended to regulate banks' currency mismatches better than in the past, which has contributed to a strengthening of their banking systems. For example, in Uruguay regulators forbid granting loans to borrowers without income in these currencies or increasing the capital charges for banks for loans in foreign currencies (s. Griffith-Jones and Ocampo 2009: 19). One of the risks that policy makers need to be aware of, however, is that in restricting currency mismatches on bank balance sheets often results in a transfer of risk to firm balance sheets (s. Stiglitz et al 2006; UN 2010). In addition, new challenges have emerged, with more widespread use of derivatives, which make it more difficult for regulators to measure the exact currency mismatches; the fact that derivatives are being encouraged on the exchanges should help transparency and help measure more accurately net currency

mismatches. It seems important for middle income countries also to further improve measurement of total currency mismatches, including the impact of derivatives, and where necessary, to tighten regulation.

The strict regulation of the maturity mismatches of banks can also help. By encouraging and even forcing banks to have liabilities which approximately match the maturities of assets, external shocks will have less of an impact on the banking system. This can have the unwanted effect of reducing the long- term credit supply, or it can result in a transfer of risk from the bank's balance sheet to firms' balance sheets (s. Stiglitz et. al. 2006), but states can enact measures to counteract this. They can do so by encouraging long term savings or by increasing the role of public development banks, which can provide more long term finance.

Another lesson that can be drawn from Central and Eastern Europe is that the conventional wisdom that dominance of foreign banks contributes to banking stability in crises can be wrong. Indeed, the opposite became true in certain cases during the global financial crisis. The dominance of foreign banks in Central and Eastern Europe contributed to a credit crunch, when these banks tried to withdraw their funds from the periphery to the center (Raviv 2008: 298).

Policy suggestions summary

Amongst the key regulatory measures that middle income regulators may wish to consider, drawing on the experience of the global financial crisis, and recent regulatory reforms, internationally, in the US and Europe are:

- Regulators need to fight against self-feeding credit growth, especially based on asset price appreciation via counter-cyclical regulations (with capital and provision charges, limits to credit growth, increase loan to collateral ratios)
- Prevent large currency mismatches for households, companies and banks
- Increase quantity and quality of core capital charges substantially (possibly up to a factor of two, where this is required, but taking account of specific circumstances in middle income countries, including relatively high capital adequacy ratios) and reduce the simple leverage of banks.
- Require banks to account for the risks they take off-balance sheets, with appropriate levels of capital to back these risks; this requires close, hands-on supervision of the business models of banks and transactions of banks. A simpler and more transparent solution is to require banks

to put all transactions on the balance sheet

-Stricter bank regulation and supervision for banks which have large trading books and are involved in credit transfer mechanisms: they are more exposed to volatility

-Require derivatives to go through exchanges, as much as possible, e.g. by using the lack of legal enforceability on speculative derivatives as a strong incentive to do so.

-Restrict wholesale funding dependence of banks by forcing them to have back-up liquidity options (including reserves at the central bank), as well as liquidity requirements

-Engage in emergency planning for the failure of large international banks operating in the country. This will be eased if foreign banks are required to be subsidiaries, rather than branches

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