Basel I, II, III – we want it all at once

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Synopsis
The complexity of Basel II and III has reached China as well. In a revolutionary turn within seven years, the Chinese bank regulator has introduced capital adequacy as the tool of choice for supervision and ensured that banks in the process remain focused on implementing all the bits of the internationally developed Basel Accords. Will it make Chinese banks really more resilient?

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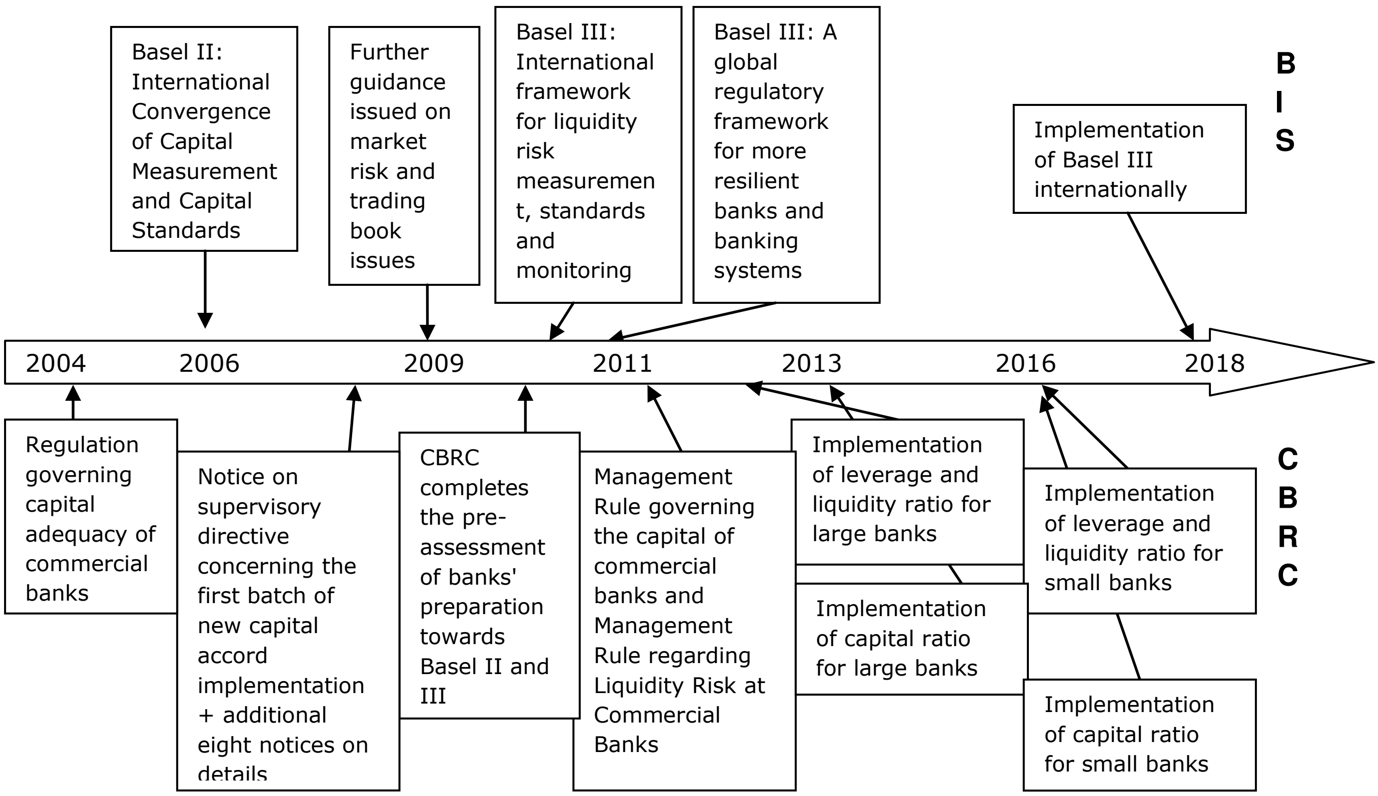
In the past Chinese banks were famously undercapitalised and their loan portfolio were of rather dubious quality. For example in 2003, on average the banking system showed an overall equity to asset ratio of just 3.25%. Rural credit cooperatives had produced even a negative ratio with -0.52%. Since then, the banks have had a lot of homework to do: from recapitalisation exercises to further improvements in internal controls and loan cleaning. So far as to result in capital adequacy ratios (CAR) for commercial banks of 10.2% by end-2011 (and even 12.7% for the total capital adequacy). Now all or almost all commercial banks are compliant with the Bank for International Settlements (BIS) required 8%.

To reach such levels, the regulators went out of their way to revolutionise the way banking and banking supervision in done in China.

Graph 1 Timeline of Basel Accords implementation internationally and in China



Source: own research

In the past, the central goal in the banking sector was the gathering of deposits. Therefore the loan-to-deposit ratio was the single most important performance indicator: it was the fundament for paying bonuses, for developing business targets and for judging branch business effectiveness. All relied heavily on this single figure because, in the absence of an efficient money market, asset growth could only be achieved through deposit growth. Furthermore, each branch had to be self-sufficient in terms of funding because deposit transfers between branches, across provinces were forbidden. Regulation and compliance were all based on the loan-to-deposit ratio (set at 75%).

As a consequence, capital and capital adequacy were not on the mind of neither bank managers nor bank regulators and capital constraints were unheard of. Such strong deposit growth disregarding asset quality and capital adequacy also favoured the building up of non-performing loans (NPLs).

Thus when the China Banking Regulatory Commission (CBRC) issued in February 2004 a regulation on capital adequacy for commercial banks (*Regulation governing capital adequacy of commercial banks*), it was seen as revolutionary by many observers. The central bank, People's Bank of China (PBOC), had previously published a minimum CAR of 8% (prescribed in the earlier *Commercial Banking Law*) but did not give any detailed calculation methods or definitions of its components, and adherence was not enforced. Furthermore, the new regulations took into account Basel I and Basel II rules as well as the prospects of Chinese banks soon facing foreign competition (through the entry to the World Trade Organisation (WTO) in 2007).

The transition from a quantitative growth (based on attracting deposits or on a funds constraint system) to a qualitative growth path (reflecting the quality of the assets held or a capital constraint system) formally took place until the end of 2006. At the same time the banks were required to increase levels of provisioning.

Even though the rules issued in 2004 took into account only some of the new developments in Basel II, the CBRC continued straight on its trajectory of yet stricter requirements. Over time it has in fact managed to become even more stringent than Basel III (Graph 1). These efforts have pushed Chinese banks in a fully new direction and lead their risk management to much higher quality – albeit starting from a really low base.

With its pillars 2 and 3 in addition to highly complex risk calculations, the capital accord dubbed Basel II was always going to have a strong impact on Chinese banks and their environment. This is mainly due to the fact that Basel II and the whole risk management framework are at a stark contrast to the Chinese banking reality. The challenges for China with Basel II range from capital and risk management to data and disclosure, as well as organisational structures, incentive compatibility (between banks and regulators), market-oriented supervision and the fostering of financial innovation.

Before the financial crisis erupted in 2008, the CBRC had clearly stated that it would first concentrate on implementing Basel I requirements and just use risk governance aspects of Basel II rules. With the crisis unfolding and the NPL build up following the stimulus package, CBRC took a very different stance. In fact, that "external pressure" was used as an excuse to write ever more strict rules. Regulators did not want to lose control of the country's banks as was happening in other G20 countries. Furthermore it was a good opportunity to show the world what China is capable of – an important asset when Chinese banks need to convince foreign regulators that they are fit enough to open branches outside their turfs. For regulators, the implementation of Basel II can potentially increase information and bank-level data availability for a better and more accurate view and understanding of banks' risks and potential losses. This in turn will enable them to react in a timelier manner.

Anyway, the banks had already started to prepare in 2006. For banks, implementation will certainly bring at first higher costs, but pressure to comply comes from the regulators, the competitors and the investors. A risk-sensitive approach to business can help draw a competitive advantage, and smooth entry in other foreign markets. A better risk management can also help increase investors' confidence.

Table 2 Current situation in China in terms of Basel II implementation

Area: macro level	**Current situation in China**
Baseline supervisory system	Broadly in line with the requirements of Basel II, but lack

	of regulators independence.
Legal-regulatory infrastructure	Issues include: embryonic development of the external rating industry, lack of recognition of creditors' rights and absence of bankruptcy proceedings.
Human resources	Modelling experience is building up from scratch.
Disclosure regime	Broadly in line with the standards of Basel II.
Corporate governance	In place, but not sufficiently used.
Accounting/provisioning practices	Most obstacles have been removed.
Availability of loss data	Banks are still collecting the data and will need at least up until 2013 – or experience a full economic cycle.

Source: own research.

Although Basel II is complex, costly, requires a high amount of historical data, gives much autonomy to banks and is calibrated to G-10 countries, implementing only the standardised approach (SA) across the Chinese banking industry means little difference to the (relatively) risk-insensitive Basel I. Most conditions required for the full implementation of the SA in China are not yet fully realised: credit rating agencies are woefully under-developed, externally rated borrowers are few and unlikely to turn to banks for financing, corporate bonds data is poor, and finally financial disclosure remains scant if not fraudulent.

While the SA does not seem feasible, challenges with IRB approaches definitely exist. Apart from the availability of data which is a challenge to all banks, the fact that banks have yet to experience a full economic cycle adds a layer of difficulty. In turn this makes stress testing and calibration difficult – just to name the most obvious challenges.

In October 2008, the CBRC issued the first notice concerning Basel II implementation in China (Notice on supervisory directive concerning the first batch of new capital accord implementation). The notice considers five parts regarding the measurement of regulatory capital and the regulatory and technical requirements for classification of risk exposures, internal ratings systems, specialised lending ratings, credit risk mitigation and operational risk management. The notice was followed, two months later, by a further pack of eight notices (came into law in 2011) concerning market risk measurement with the advanced approach, interest rate risk management on the banking book, liquidity risk management, information disclosure on the CAR, validation of the approach for operational risk, calculation of the CAR, securitisation exposures, and supervisory review of the CAR.

The notices in effect introduced the Basel II framework in full. Risk exposures in the banking book shall be divided into sovereign, financial institutions, corporates, retail, equity and other on- and off-balance exposures. Internal rating systems should cover the first three classes as well as retail but in the form of pools. The constituents of internal rating systems are their governance structure to ensure objectivity and reliability, technical standards to ensure the same treatment to similar exposures, work flows which ensure independence and fairness, risk parameters measurement reflecting characteristics into PD and LGD factors, and finally MIS and IT systems. Banks are required to conduct at least yearly reviews of their internal rating systems which are the responsibility of the BoD. Ratings shall cover both the borrower and the facility, should have at least seven non-default and one default grades, and can be through-the-cycle or point-in-time. Where information is scarce, ratings should be lower. Internal ratings are the judgment of the bank solely and external ratings shall be considered for information only. Models underlying the rating systems should also be reviewed and re-assessed regularly so as to reduce model risk. Such systems must have been in use for at least three years before being approved by the regulators. The ratings produced should constitute the basis for setting risk management policies, loan approval, capital allocation and governance.

Capital disclosure should reflect the bank's disclosure policies. The content should entail the components of the capital base, disclosure on the banks' individual asset portfolios (divided in the above risk classes at least), comments on the policies and objectives of risk management in each risk type (interest rate, market, liquidity, and so on.), credit risk measurement and provisioning as well as concentration in industries, areas, products, borrowers and so on, risk mitigating factors such as securitisation, collateral, and their respective calculations. For disclosure about capital, instruments and adequacy, the information should be disclosed every quarter, for exposures by risk types and various other relevant details half-yearly disclosure is sufficient.

Capital adequacy ratio calculations should cover all subsidiaries owned to more than 50%. The rules also detail how to treat other subsidiaries. The capital adequacy calculations will reflect internal ratings which cover at least 50% of all assets (80% after three years – but 90% within one single entity in the bank). A capital definition is provided again and some deductions to it are required for CAR calculations. The capital adequacy calculations are the same as put forward in the Basel II document.

As can be seen from the above, most of the requirements and content from the original Basel II Accord are found in Chinese regulations. In some aspects the regulators have adapted the regulations to fit more closely the Chinese situation and environment (for example reducing the number of risk exposures classes in the banking book). Its regulations are more detailed in so far as they require more build up of structures and processes to achieve Basel II standards (which should come as no surprise since Chinese banks have more to catch up and CBRC has a more hands-on approach).

With the financial crisis and after lengthy discussions, the BIS proposed additional indicators and measures for regulators to manage other risks which featured prominently during the crisis (that is apart from credit risk especially liquidity risks and capital quality). The BIS has proposed a new liquidity coverage ratio as well as a stable funding ratio. A further document highlights the quality of capital, calls for strengthened capital requirements, adds leverage ratios to the supervisory tools and advocates a counter-cyclical approach.

CBRC at first acknowledged the BIS publications and published a Chinese version, but did not publicly comment in detail on the proposals. Then in the second half of 2011, the banks were flooded with large proposals for new regulations (among which are the Trial Management Rule regarding Liquidity Risk at Commercial Banks and the Management Rule regarding the Capital of Commercial Banks which is for now in the form of an exposure draft). In effect, the requirements set forth are more stringent and implementation should be swifter than that proposed under the international Basel III document (Table 3).

Table 3 Comparison of Basel regulations

	Regulation governing capital adequacy of commercial banks **By CBRC, Feb. 2004**	***Management Rule governing the capital of commercial banks*** **By CBRC, Aug. 2011**	**Basel III Framework as proposed by the BIS in 2010 and 2011**
Scope of applicability	All commercial banks	All commercial banks (others should take reference), including cooperative banks and village and township banks On consolidated and single entity basis	All banks On consolidated and single entity basis
Capital definition	Capital is defined in two tiers and long-term subordinated debt shall not exceed 50% of core capital and tier 2 shall not exceed the amount of tier 1 capital.	Two tiers of capital with tier 1 making at least 75% of the total capital instruments with loss absorbability features not yet available in China Core tier 1= paid-in capital, capital surplus, earnings retained and standard loss provisions. Deductions include the (un)realised gains on valuation changes, on foreign exchange, minority interests, allowances for restructurings, the equity portion of convertible bonds. Tier 1 includes in addition minority interests. Tier 2 includes moreover a limited portion of the surplus of loan loss provisions (above the required minimum), parts of the (un)realised gains on valuation changes and allowances Deductions to the calculation of the CAR must include all intangibles, deferred net tax assets, gaps in loan loss provisions, treasury stocks and profits on asset securitisations	Decreased the number of capital tiers from 3 to 2 Focuses more on core elements of capital and capital quality, capital instruments must show loss absorbability features
Minimum capital requirement s	8% (core 4%) which was later progressively increased to 10.5% and 11.5% for small and large banks respectively	Minimum tier 1 core capital of 5%, tier 1 capital +1%, conservation buffer +2.5%, tier 2 +2%, counter-cyclical buffer +0-2.5%, surcharge for systematically important banks +1% Calculation of buffers and surcharge based on tier 1 core capital	Minimum tier 1 core capital of 4.5%, tier 1 capital +1%, conservation buffer +2.5%, tier 2 +2%, counter-cyclical buffer +0-2.5%, surcharge for systematically important banks +1-5%
Risk weights (RW) (includes only	Claims on the Chinese government are treated as if China was rated better than AA- (China as a sovereign is	Foreign debts take the external rating of the issuer as a basis Removed preferential treatment of central level SOEs (thus all enterprises at 100%)	-

differences and departures from Basel I and II)	currently rated by Standard & Poor's with A+/A-1+). Risk mitigants are recognised in the sense of Basel II. A further important step taken by the regulators is the removal of the preferential treatment of SOEs (but central level SOE kept a RW of 50%)	Domestic banks' RW changed from 20% to 25% RW for SMEs (max. exposure CNY5m) and retail lending lowered from 100% to 75% RW for mortgages on first homes at 45% and for second homes at 60% RW for asset management companies (AMC) 100% unless that AMC took over the bank's NPLs RW of 250% for equity exposure to FIs, RW of 1,250% for equity holdings in commercial enterprises (unless ordered by the state or passively held, then 400%) RW of 1,250% for immovable assets not held for own use Credit conversion factors for off-balance exposures: loan commitments 20% (50% over a year), credit cards 50%, notes issuance and revolving facilities linked to trade 20% (50% otherwise)	
Market risk	This applies only to banks with trading positions exceeding the lesser of 10% of the bank's on- and off-balance sheet assets or CNY8.5bln.	More stringent VaR calculations, applicable to all banks, must take into account central counterparties and credit valuation adjustment VaR calculation for a 10-day horizon with a confidence level of 99%	must take into account central counterparties and credit valuation adjustment
Operational risk	not taken into account in the new capital calculations, but is addressed in another document (more at an internal control level)	Can be taken into account following three approaches (indicator, standard or advanced)	
Categorisation of banks for supervisory purposes	categorised into three groups depending on the adequacy of their capital (CAR>=8%, CAR<8% and CAR<4%). For each group CBRC has a range of measures at its disposal ranging from requiring management improvements to complete suspension of activities.	Categorised into four groups depending on what level of compliance they show (group 1: compliant with all minimum capital requirements and pillar II; group 2: compliant with all minimum capital requirements; group 3: compliant with tier 1 and 2 capital requirements only; group 4: not compliant)	Left to the discretion of national regulators
Information	based on Basel II	Ad-hoc: when changes occur in capital (instruments)	

disclosure and supervisory review	requirements, the BoD or president of the bank is responsible for capital adequacy and senior management is responsible for its implementation. Supervisory review is undertaken through on-site review and off-site surveillance.	Quarterly: core tier1, tier 1 and tier 2 as well as related CAR Semi-annually: consolidation scope of CAR, credit risk exposure, NPLs, LLP, asset securitisations, credit risk portfolios, market risk, operational risk, equity investments, and interest rate risk Annually: any other information required in rules	
Provisioning requirements	Not explicitly mentioned, but China moved to the internationally used loan five categories in 2004 general provisions shall be raised for 1%, 2%, 25%, 50% and 100% for each of the five loan categories	Forward looking provisioning covering at least 150% of NPLs and 2.5% of all loans More dynamic approach depending on economic environment Bank-specific requirements can be added	
Liquidity risk	-	Net stable funding ratio Until end-2012 (small commercial banks end-2016) Current ratio min. 25% Liquidity coverage ratio min. 100% In addition requires proper governance structures, risk management policies and processes, regulation and information	Net stable funding ratio min. 100% Until end-2018 Liquidity coverage ratio min. 100%
Leverage ratio	-	4% Until end-2012 (small commercial banks end-2013)	3% Until 2016
Treatment of subordinated debts	Can be included in capital tier 2	starting from 1 July 2009 not to recognize cross-holdings of subordinated debts as capital for CAR calculations. Furthermore the notice requires the bank to cap long-term subordinated bonds issuance to 25% of the lender's core capital and that those lenders with a CAR below a 7% threshold (5% for those non-nationwide banks) should not be allowed to make use of subordinated debt to replenish capital.	
Implementation time line	2005 onwards	Until end-2013 (end-2016 for small commercial banks) Banks can submit a deferred implementation plan –	Phased approach until end-2018

		implementation can be delayed until end-2015 (end-2018 for small banks) at most Although this is an exposure draft, with final implementation being recently delayed for “practical reasons” by the new and more prudent head regulator, Shang Fulin	
Treatment of systematically important financial institutions (SIFIs)	-	Special supervision framework considering the levels of major risks, risk absorbance capacity, the management of subsidiaries as well as a further 13 indicators	
		Firewalls between banks and capital markets to be kept, limitations on highly leveraged transactions, issue bail-in bonds to absorb losses, stricter rules on commercial banking, wide ranging powers of inspectors, extended off-site supervision, more influence of corporate governance, contingency/recovery/resolution plans	

Within four years, CBRC has completely changed its approach (table 4) from a cherry picking model to a full and stricter implementation of Basel III extended to all commercial banks. Will that push the banks to the hedge of their capabilities?

Table 4 A changing phased approach

	Phased approach as of 2008	Phased approach as of 2011
"New Accord Banks"	ICBC, BOC, CCB, ABC, BoComm, China Development Bank (CDB), Merchants and SPDB	ICBC, BOC, CCB, ABC, BoComm, Merchants (SIFI banks)
Implementation schedule	starting in 2010, the other commercial banks from 2011 onwards	Starting 2012, even after accounting for approved delays, until at the latest 2018
Preferred approach	IRB	IRB
Application	Those applying for IRB status need to be approved by CBRC and comply with minimum requirements.	Applicants had until end-2011 to submit their implementation plan to CBRC
Asset coverage	from a starting point of 50% to 80% and higher.	
Further requirements	The banks need to collect the data, establish rating systems and risk measurement models with the appropriate processes and procedures	
Chosen path	established obligor rating systems and four were developing transaction ratings, and three were working on ratings for retail business	

At the end of 2011, the CBRC statistics for commercial banks, including the larger and smaller ones as well as city level and rural entities, and foreign banks, show that the banks in all produced a healthy capital adequacy ratio of 12.7% (and 10.2% for tier 1 capital). Furthermore their current ratio reached 43% well above the required 25%. Finally their loan loss provisions covered over 278% of all non-performing loans.

As it appears, the impact of more strict requirements will be more on the governance side, as far as the above ratios suggest. In fact much of the discussed asset securitisations and complex capital instruments never found their way in China, or at least only in very limited volumes.

Chinese banks started to establish risk management structures and rating systems only with the beginning of the new century. This late start was the consequence of years of policy lending, of capped interest rates, of historical burdens and of poor incentives to create sound banks. The newly established risk management units are now separated from sales departments and banks have centralised risk management and lending decisions against the resistance of previously fiercely independent bank managers. Banks have changed the incentive structures of relationship managers, started off-loading NPLs and finally have been able to share data through the PBOC credit registry. Despite the high hurdles that Chinese banks face, more and more are moving into risk management especially that of credit risk.

But all is not well, as the structures are not fully centralised: while the systems are common to all entities and levels of decisions within one group, the branches still retain a say in decisions through their local risk management units. These units sit awkwardly between two lines of responsibility, the first to their risk management counterparts in head quarters and the other to their local branch manager – as described in some of the largest banks' annual reports for 2009. Influence by local managers is thus still a reality and there is still no reporting lines separation between those managing risks and those doing business – thus the incentivisation of credit officers is challenged.

Other banks have chosen to centralise credit decisions in a few separate centres: for example Industrial Bank has centres in Beijing, Shanghai, Guangzhou and Fujian. In those cases, the branches have to submit credit applications to these centres. To ensure that its officers are made responsible for their decisions (often as or within a committee), Industrial Bank has also established a special committee investigating responsibilities. Its credit policies describe among others which industries should be focused on (along the lines of government policies). Other large banks such as China Minsheng Banking Corp still have to implement risk management systems to cover all of their activities, products, borrowers and risk types. China Minsheng Banking Corp has also drawn three lines of defence: business department, risk management and audit department.

Moreover the bank's boards of directors (BoD) are now to be responsible for designing a risk management strategy and implementing it. To this end they can use a number of committees, among which is a risk management committee. It is interesting to note however that in a number of banks, there is not only one risk management committee, but one for BoD and chairman, another one under the president, and possibly another one at the head quarters. Observers might rightly question if such arrangements are efficient and can really increase the level of barriers to ensure good and independent risk management. Additionally, no bank has until now implemented a separation between business and credit reporting lines (all report finally to the president of the bank).

As outside observer it is difficult to assess to what extent these credit rating systems are being used, how adequate they are and if they are being circumvented more than integrated into daily decisions. Furthermore while the professionalism of risk management departments will increase over time, it remains to be seen if the same happens with their independence and their responsibilities. Further to these, they also see more challenges. Credit and loss data are insufficient because a full economic cycle has yet to be experienced. A methodology measuring credit risk to support decision-making is lacking (still often based on collateral availability, and so on) and needs to be fully validated.

In line with the regulatory requirements, the banks are – while perfecting and strengthening their internal controls, credit monitoring and credit assessment systems – now establishing stress testing capabilities and taking steps to actively manage their capital (using economic capital, RORAC and EVA for example to allocate capital to different industries, borrowers, sub-portfolios, geographic areas and so on).

On the quantitative front, CBRC has conducted preliminary assessments similar to quantitative impact assessments of the BIS exercises abroad to gauge the potential impact of Basel II implementation on capital adequacy levels. Prior to the assessments, CBRC thought that capital adequacy levels would rise, but it appeared to be the contrary. Results for ICBC for example showed that the bank could actually lend more than under Basel I because it was more than adequately capitalized and its risk weights were better differentiated across exposures.

Because most banks show CAR which are already above the required 10.5% or 11.5% for smaller and larger banks respectively, the need for capital replenishment in the short term is rather limited. However the new capital requirements are not the only ones that will slow down growth at Chinese banks (table 5). With mounting fears over local government debts, real estate bubbles, trust lending and economic slowdown, the regulators have implemented further restrictions. Local government platforms will need to be adequately accounted for with appropriate risk weights and management controls, real estate exposures are welcome only for first homes and trust products need to be moved on balance sheet. Facing a harsher environment, both liquidity and growth will be dampened. Moreover the banks could face a wave of fresh NPLs related in one way or another to the stimulus of 2008.

Table 5 Recapitalisation costs (in CNY bn, based on banks' financials for 2010)

	Four largest commercial banks	Further 13 large commercial banks	**Sum**
Equity, actual	2,741	1,039	3,780
Loan loss reserves, actual	602	206	807
Sum of NPL, Special mention loans, those overdue for under 90 days and those restructured (actual)	1,333	275	1,608
Recovery rate of NPLs	*Assumed at 20%*		
Would result in loan losses of	1,066	220	1,286
Capital surplus (deficit)	***2,277***	***1,024***	***3,301***
Total loans (gross), actual	23,077	10,498	33,575
To reach a CAR of 12% would require in capital	2,769	1,260	4,029
less: existing surplus capital	2,277	1,024	3,301
Recapitalisation cost (surplus for growth)	***493***	***240***	***733***

In addition to recapitalisation costs to defray the costs of higher NPLs, the banks will also have larger risk weighted assets to take into account (trust loans are required to be taken on-balance), which would probably mean a further capital hole of CNY1.2trn to cover these trust loans with sufficient capital. Together for the largest 17 banks (together covering 63% of the banking assets in China), rough calculations would imply an overall capital need of almost CNY2trn. But these back-of-the-envelope calculations fail to include liquidity, market and operational risks as well as take into account the profitability of banks (their profits are largely protected by the central bank's base rates differentials).

Not only is the capital available going to increase, but costs are also on the increase: the costs of implementation are certainly high (at least CNY50m per small bank), but the costs of refinancing for banks will also increase, especially for those with poor standing and ratings. But more importantly the question is less quantitative and should be more qualitative: banks should refrain from exchanging credit risk against model risk.

Apart from the quantitative impact as analysed above, the implementation of the Basel II accord will also have a qualitative impact on Chinese banks. Implementation will certainly refocus the rewards and incentives of officers and managers and delimit more clearly their responsibilities. Internal organisational structures are likely to be remodelled to comply towards a separation of reporting lines between risk management and operational departments. Information disclosure and transparency will encourage more stakeholders to review the banks' activities and publications. The banks and the regulators will hold a wealth of data from which they can not only gauge risks but increase the level of financial intermediation. All these are likely to lead to a stronger credit culture and more proactive and dynamic risk management.

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