

Basel II and Its Impact on Property Market in HKSAR

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Abstract

The Basel Accord is developed by the bank for International Settlements (BIS) as soft law for international banking governance. A new Basel Accord, the Basel II Accord was agreed by all the members of the Basel Committee on Banking Supervision (the Committee) in 2005. Under the Basel II Accord, the capital adequacy ratio remains as a core component. However, the risk weights for classified risks have been changed. As far as property market is concerned, the risk weight for residential mortgage is lower than before, but the risk weight for commercial real estate become much stricter than before. These changes would unavoidably influence the lending attitude and lending capacity of banking institutions. Therefore, property market will be influenced. Considering the property markets in different jurisdictions have their own special characteristics, this paper will focus on the impact of Basel II in Hong Kong. Furthermore, the impact will be discussed from the macro and micro perspectives.

Keyword: Basel II, capital adequacy ratio, property lending

Introduction

The Basel Accord ("Basel I") was developed by the bank for International Settlements (BIS) as soft law for international banking governance in 1988.¹ It focused on the capital adequacy requirement, providing that banking institutions should maintain the minimum capital adequacy ratio. Basel I unified the definition of capital adequacy ratio, i.e. the ratio of capital to risk-weighted assets. However, the calculation method of capital adequacy requirement is developing. Basel I as the first effort to converge capital requirement, just applied the simplest method. As the financial activities are extending and thus the risks facing by banking institutions are increasing, the method provided by Basel I cannot satisfy the requirements of the banking practice. Consequently, the Basel Committee on Banking Supervision ("the Committee") decided to revise Basel I, and after four-year consultation, the final revised capital accord ("Basel II") was issued in 2004.²

¹Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards*, July 1988

²Basel Committee on Banking Supervision (2005), *International Convergence of Capital Measurement and Capital Standards (A Revised Framework)*. Available at <http://www.bis.org/publ/bcbs118.pdf>

As the prominent financial intermediaries, banking institutions play an important role in the economic. The availability of bank lending for one sector is related directly to the development of this sector. The method of capital adequacy ratio should change the preference of banking institutions and thus influence the availability of bank lending. As far as property market is concerned, bank lending is the main funding source. The lending attitude of banking institutions would affect the development of property market directly. The following parts will introduce Basel II firstly, and then analyze the impact of Basel II on property market. In view of the special characteristics of property market in different jurisdictions, this article will stress this impact in Hong Kong Special Administrative Region of China (“the HKSAR”).

1. Basel II

The minimum capital measurement takes the capital-to-asset ratio as the measurement, and the asset is the risk-weighted one rather than the simple sum of all assets of banking institutions. CAR should be calculated by the following formula³:

$$\text{CAR} = \frac{\text{Capital}}{\text{Weighted risk Assets}}$$

Basel I mainly provided three factors: (1) CAR should be above 8%, (2) what the capital should include, and (3) which risk weight should be allocated for each asset class. As the successor of Basel I, Basel II retains two factors of Basel I, i.e. the minimum capital adequacy ratio and the definition of capital. Nevertheless, Basel II changed calculation method for capital adequacy ratio, and especially introduced three pillars approach in order to align minimum capital requirement of banks more closely to the risks they face. Three pillars approach include (1) minimum capital requirements (“Pillar I”), (2) supervisory review process (“Pillar II”), and (3) market discipline (“Pillar III”).

In all rules of the Basel II, the treatment of credit risk will affect the real estate directly. Based on this, the calculation of credit risk will be stressed in the following parts. Contrasting to Basel I, there are two significant changes in calculation of capital adequacy ratio for credit risk in Basel II, i.e. (1) diversification of calculation methods, and (2) the introduction of the credit rating. Basel II provides that Standardized approach and Internal Rating-based approach (“IRB approach”) should be available. Not all the assets classifications under two approaches are related to the property market. The parts highlighted in italic in table 1 may affect the property market, which will be discussed in the following parts.

³ Done by author according to *International Convergence of Capital Measurement and Capital Standards*, July 1988

Standardized approach is the amendment of previous calculation method provided by Basel I. The risk weights for every assets classification are provided by Basel II. Claims secured by residential property shall be allocated 35% risk weight⁴, 100% risk weight shall be applied for claims secured by commercial real estate⁵. The risk weights for corporate loans are varying from 20% to 150% according to the different credit rating (Table 2).

IRB approach for non-securitization risk includes the foundation IRB approach and the advanced IRB approach. Both of them rely on four parameters: the probability of default (PD), loss given default (LGD), the exposure at default (EAD) and effective maturity (M).⁶ the foundation IRB approach requires bank institutions estimate PD, and use supervisory estimates for the other three parameters. Under the advanced IRB approach, banks may provide their own estimates of PD, LGD and EAD and must provide their own estimates of M.⁷

Corporate exposures⁸ and retail exposures⁹ under IRB approach may affect the property market. Basel II provides the formulas for both of them (Formula 1 and Formula 2). The foundation IRB approach and the advanced IRB approach are available for corporate exposure, but there is no difference between the foundation IRB and advanced IRB approach for retail exposure. Banks must estimate PD, LGD and EAD by themselves.¹⁰

Among three sub-classes of retail exposures, only the residential mortgage would affect the property market. Different from the residential mortgage under standardized approach, the residential mortgage as the sub-class of retail exposure under IRB approach, refers to not only the lending fully secured by residential mortgage, but also the lending partly secured by residential mortgage.¹¹

The calculation for corporate exposures is complicated. Basel II provides that banks will be permitted to separately distinguish exposures to small- and medium-sized entities (SME)¹²

⁴ Basel Committee on Banking Supervision: *International Convergence of Capital Measurement and Capital Standards: A Revised Framework (Comprehensive Version)*, Part 2, Section II A 8

⁵ *Id.* Part 2, Section II A 9

⁶ *Id.*, Part 2, Section III A

⁷ *Id.*, Part 2, Section III B 2

⁸ Corporate exposure is defined as a debt obligation of a corporation, partnership, or proprietorship. See *Id.*, Part 2 Section III B 1 (i)

⁹ Retail exposure should meet the following criteria: (1) exposures to individuals, (2) residential mortgage loans, (3) loans extended to small business if the total exposure of the banking group to a small business borrower (on a consolidated basis where applicable) is less than €1 million, and (4) supervisors have flexibility in the practical application of such thresholds. See *Id.*, Part 2 Section III B 1 (iv)

¹⁰ *Id.*, Part 2 Section III B 2 (ii)

¹¹ *Id.*, Part 2 Section II A 8 and Part 2 Section III D 1 (i)

¹² SME borrowers mean corporate exposures where the reported sales for the consolidated group of which the firm is a part is less than €50 million. See *Id.* Part 2 Section III C 1 (ii)

borrowers from large entities. For SME, a firm-size adjustment (i.e. $0.04 \times (1 - (S - 5) / 45)$) is made to the corporate risk weight formula.¹³ That is to say, under the same conditions, the risk weight for SME will lower than for large entities.

Furthermore, five sub-classes of specialized lending (SL)¹⁴ are identified within corporate exposure, i.e. project finance, object finance, commodities finance, income-producing real estate and high-volatility commercial real estate. Among these sub-classes, income-producing real estate and high-volatility commercial real estate are related closely to property lending.

— *Income-producing real estate (IPRE) refers to a method of providing funding to real estate (such as office buildings to let, retail space, multi-family residential buildings, industrial or warehouse space, and hotels) where the prospects for repayment and recovery on the exposure depend primarily on the cash flows generated by the asset. The primary source of these cash flows would generally be lease or rental payments or the sale of the asset. The borrower may be, but is not required to be, an SPE, an operating company focused on real estate construction or holdings, or an operating company with sources of revenue other than real estate. The distinguishing characteristic of IPRE versus other corporate exposures that are collateralised by real estate is the strong positive correlation between the prospects for repayment of the exposure and the prospects for recovery in the event of default, with both depending primarily on the cash flows generated by a property.*¹⁵

— *High-volatility commercial real estate (HVCRE) lending is the financing of commercial real estate that exhibits a higher loss rate volatility (i.e. higher asset correlation) compared to other types of SL. HVCRE includes:*

- *commercial real estate exposures secured by properties of types that are categorised by the national supervisor as sharing higher volatilities in portfolio default rates;*
- *loans financing any of the land acquisition, development and construction (ADC) phases for properties of those types in such jurisdictions; and*

¹³ *Id.* Part 2 Section III C 1 (ii)

¹⁴ Basel II provides that the SL possesses all the following characteristics, either in legal form or economic substance: (1) the exposure is typically to an entity (often a special purpose entity) which was created specifically to finance and/or operate physical assets, (2) the borrowing entity has little or no other material assets or activities, and therefore little or no independent capacity to repay the obligation, apart from the income that it receives from the asset(s) being financed, (3) the terms of the obligation give the lender a substantial degree of control over the asset(s) and the income that it generates, and (4) as a result of the preceding factors, the primary source of repayment of the obligation is the income generated by the asset(s). See *Id.* Part 2 Section III B 1 (i)

¹⁵ *Id.*, Part 2 Section III B 1 (i)

- *loans financing ADC of any other properties where the source of repayment at origination of the exposure is either the future uncertain sale of the property or cash flows whose source of repayment is substantially uncertain (e.g. the property has not yet been leased to the occupancy rate prevailing in that geographic market for that type of commercial real estate), unless the borrower has substantial equity at risk.*¹⁶

The calculation method for SL is similar to that for corporate exposure, but one difference is that if banks do not meet the requirements for estimation of PD under the corporate foundation approach for their SL assets, they should apply the “supervisory slotting criteria approach” to SL assets.¹⁷ The supervisory slotting criteria approach requires that banks should rate SL assets according to the slotting criteria provided by Basel II, and each supervisory category has the corresponding risk weight for unexpected losses (Table 3 and Table 4).

2. Implementation of Basel II in the HKSAR

The HKSAR always takes active attitude to Basel II. In order to keep the status as international financial center, the HKSAR decided to implement Basel II from January 1, 2007. Hong Kong Monetary Authority (“the HKMA”), as the banking regulatory authority, is responsible for implementation. In August 2004, the HKMA issued *Proposals for the Implementation of the New Capital Adequacy Standards (“Basel II”) in Hong Kong*¹⁸ as the beginning of implementation. In 2005, the Legislative Council amended the Banking Ordinance (“the BO”). It provides for the HKMA to make rules prescribing the manner of calculation of the Capital Adequacy Ratio of Authorized Institutions (“AIs”).¹⁹ Accordingly, the HKMA issued Banking (Capital) Rules (“Capital Rules”)²⁰ and Banking (Disclosure) Rules (“Disclosure Rules”)²¹ in October 2006.

Capital Rules are made referring to Basel II. All the approaches of Basel II are available for AIs. The calculations for each asset class are similar to Basel II. Specially, given the demand of small AIs, Capital Rules specially provides the Basic approach, which is primarily intended for AIs with small, simple and straightforward operations, thus addressing smaller AIs’ concerns over the complexity and cost of implementation of Basel II. The on-balance sheet exposures under Basic approach are classified sovereign exposures, public sector entity exposures, multilateral development bank exposures, bank exposures, cash items, residential mortgage loans, and other exposures.²² The risk weights for every exposure does not depend on the external rating, but are provided by Capital Rules.

¹⁶ *Id.*, Part 2 Section III B 1 (i)

¹⁷ *Id.*, Part 2 Section III C 1 (iii)

¹⁸ http://www.info.gov.hk/hkma/eng/basel2/Consultation_04.pdf

¹⁹ <http://www.legco.gov.hk/yr04-05/english/bills/b0503041.pdf>

²⁰ <http://www.info.gov.hk/hkma/eng/basel2/index.htm>

²¹ <http://www.info.gov.hk/hkma/eng/basel2/index.htm>

²² *Banking (Capital) Rules*, Section 108

3. Impact of Basel II on Property Market

Undoubtedly, property market would be affected by the implementation of Basel II, and this impact may be more serious than that on other sectors. That is because there is a close relationship between property market and banking sector. The impact of Basel II mainly derives from the differences of Basel I and Basel II. As far as property market is concerned, the impact is derived from the changes of risk weights of property lending. When the risk weights for property lending increase, the loans for property market would be decrease, and the decrease in risk weight may also caused the increase of property lending. However, Basel II is not just to increase or decrease the risk weights for all property lending simply. For some kinds of property lending, their risk weights may increase, but for the others, their risk weights decrease.

In order to analyze this impact, the micro-level and macro-level would be discussed in the following parts. In the micro-level, the participants of property market, i.e. developers, individual as the purchasers would be analyzed individually.

3.1 Developers

Generally speaking, developer is registered as the corporate. So the impact of Basel II on developers focused on the change of risk weights for corporate. In Basel I, the loans for corporate were allocated 100%.²³ The diversification of risk weight under Basel II should extend the gap among the developers. IRB approach requires the estimation of four parameters, which make it difficult to expect the change of risk weight. Thus, this section will focus on the impact under standardized approach.

Standardized approach provides that the risk weights for corporate are varying from 20% to 150% (20%, 50%, 100% and 150%).²⁴ Supposing that banking institutions lend 100M HK\$ to one developers and other conditions are not considered, if the developers is rated AAA to AA-, banking institutions should keep 1.6m HK\$ of capital in order to satisfy the capital adequacy requirement. However, if the developer is rated below BB-, banking institutions must maintain capital equal to 12m HK\$, which is more than seven times of capital in the first situation.

Under the same amount of capital, banking institutions may avoid the higher risk weight assets and are reluctant to lend to developers with low credit rating. Thus, from the provisions of Basel II, there is a chance for developers that they may borrow from banking institutions more easily than before, but this is just for few developers. For most developers, Basel II should worsen the conditions in essence.

²³ Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards*, July 1988

²⁴ *Banking (Capital) Rules*, section 61

Few companies are currently rated, and external ratings are relatively expensive for the customer.²⁵ Developers need commission the rating agency by themselves. If the developers need many loans and if they can be sure that they can obtain the rating higher than BBB+, they may be willing to do so. But actually, the criteria of credit rating agencies are strict and the credit rating agencies are also need recognized by banking supervisor. In order to avoid the risk, banking supervisor will not reduce the criteria. Consequently, it will be difficult for developers to obtain the good credit rating.

Even for the developers with high credit rating, Basel II increases the cost of lending from banking institution unavoidably. Developers have to pay the commission to credit rating agencies before they negotiate with banking institutions. Basel II did not mention whether borrowers must provide the new credit rating once they decide to borrow from banking institutions, but we can expect that one credit rating cannot be used for long time. The cost of credit rating cannot be apportioned.

Perhaps most developers would prefer not to be rated by credit rating agencies. There are two reasons. Firstly, Basel II provides that claims on corporate not rated would be allocated 100% risk weight. If we only consider the risk weight, corporate not rated under Basel II should have the same treatment as under Basel I. Secondly, what's worse is that Basel II provides that claims on corporate with rating below BB-, 150% risk weight should be applied, which is higher than for corporate not rated. Thus, given the cost of credit rating and the uncertainty of result of credit rating, more and more developers would choose not to be rated. However, when facing the better choice, banking institutions may push the use of credit rating.

In the HKSAR, Fitch Ratings, Moody's Investors Service, Standard & Poor's Ratings Services, and Rating and Investment Information, Inc. ("R&I") are recognized by the HKMA for the Standardized Approach to calculation of credit risk.²⁶ All of these are global rating agencies, which will make the impact of Basel II on developers more serious. Firstly, according to some researches, the credit ratings provided by the global rating agencies are more rigid than the nation rating agencies.²⁷ Secondly, the fee paid to the global rating agencies is also very high. Global rating agencies also favor the international or big corporations. Thirdly, global rating agencies might have a comparative advantage in rating larger/more internationalized companies while national rating agencies might have a comparative advantage in rating smaller/less internationalized companies.²⁸ The lock of local credit rating agencies or the smaller credit rating

²⁵ Christoph Pitschke, Stephan Bone-Winkel (2006). The Impact of the New Basel Capital Accord on Real Estate Developers. *Journal of Property Investment & Finance*. 24 (1): 7-26

²⁶ HKMA, *Letter issued to all AIs on 28 September 2006*, see [http://www.info.gov.hk/hkma/eng/basel2/Ltr%20to%20AI_ECAIs_ratings_mapping\(23Jun\).pdf](http://www.info.gov.hk/hkma/eng/basel2/Ltr%20to%20AI_ECAIs_ratings_mapping(23Jun).pdf)

²⁷ Giovanni Ferri, Tae Soo Kang and Jeong Yeon Lee, *New Basel Accord and Requirements for ECAI Recognition from Asian Developing Countries' Perspective*

²⁸ *Id.*

agencies in the HKSAR may lead to decrease of amount of developers with credit ratings, and the situation will be worse for medium and small developers.

Actually, S&P and Moody's have already rated several developers in the HKSAR before, but the result showed that even big developers in the HKSAR, the future is not very good. Hysan was ranked BBB by S&P and Baa1 by Moody's in 2006.²⁹ Sun Hung Kai was ranked A by S&P and A1 by Moody's in 2006.³⁰ Cheung Kong was ranked A- by S&P and A- by Moody's in 2006. Swire was ranked A- by S&P and A3 by Moody's in 2005. Sino was ranked BB by S&P. The future of small and medium developers is not optimistic.

Basel II provides another important risk weight for developers, i.e. mortgage on commercial real estate. The risk weight for loans secured by commercial real estate is 100%, which is the same as the risk weight under Basel I. If the developers can provide commercial real estate as collateral, the implementation of Basel II cannot affect them, at least the lending attitude of banking institutions would not change. This may be suboptimum choice for banking institutions and several big developers.

Under IRB, foundation IRB approach and advanced IRB approach rely on the estimations of banking institutions. It can be sure that "one size for all" would not be applied any more. Developers in good financial conditions would have lower risk weight. The different treatment among the developers can not be avoided under Basel II. Meanwhile, the supervisory slotting criteria approach increase the risk weights for SL exposures with not good credit rating, especially risk weight for high-volatility commercial real estate.

From the macro-perspective, the different treatment among developers would exasperate the monopoly as the implementation of Basel II. The equity finance for small and medium developers is not easy essentially. Contrasting to big developers, the small and medium developers more rely on debt finance, i.e. bank lending. But now, the cost of property loans increase and banking institutions may not prefer to lend to them. The living space for small and medium developers would be decreasing gradually. In the HKSAR, seven developers (Cheung Kong, Sun Hung Kai, Henderson, Hang Lung, Sino, Swire, New World Development and Hong Kong Land) account for 76% of property market in 1996.³¹ In residential property market, 70% of total new private housing was supplied by seven developers between 1991 and 1994, and 55% came from just four developers.³² The monopoly has already been serious. Given the high land price and limited finance channel, the situation would deteriorate further.

3.2 property-holding shell companies

²⁹ Annual Report 2006, see http://www.hysan.com.hk/chi/cmsdoc/annual_report_c/AR2006_C.pdf

³⁰ http://www.shkp.com/en/scripts/investors/invest_ratings.php

³¹ *The Hong Kong Monthly Digest of Statistics*, October 1997, November 1998.

³² Consumer Council, *How Competitive Is the Private Residential Property Market?*, 1996

Property-holding Shell Companies mean the companies which do not engage in any business activity except for the sole purpose of the buying, holding and selling of residential properties.³³ The residential mortgage loan of the property-holding shell company shall be allocated a risk-weight of 35% if (1) the loan is secured by a first legal charge on one or more than one residential property, (2) residential property is the residence of the director or shareholders of the borrower or as the residence of a tenant, or a licensee, of the borrower, (3) the loan-to-value ratio of the loan does not exceed 70% at the time a commitment to extend the loans was made by the institution, or the relation to a residential mortgage loan purchased by the institution, at the time the loan was purchased, (4) the loan-to-value ratio of the loan does not exceed 100% at any time after the loan is drawn by the borrower or purchased by the institution, as the case may be, and (5) all of the borrowed-monies obligations of the company arising under the loan are the subject of a personal guarantee which is entered into by one or more than one director or shareholder of the company and which fully and effectively covers those obligations, the institution is satisfied that the guarantor is able to discharge all the guarantor's obligations under the guarantee and the loan has been assessed by reference to substantially similar credit underwriting standards as would normally be applied by the institution to an individual.³⁴

If the property-holding company as the borrowers do not satisfy all the requirements mentioned above, but it satisfies that (1) the maximum aggregate exposure of an authorized institution to a single obligor, or to a group of obligors considered by the institution as a group of obligors for risk management purposes, does not exceed \$10 million, and (2) the loan-to-value ratio of the loan does not exceed 90% at the time a commitment to extend the loan was made by the institution, or in relation to a residential mortgage loan purchased by the institution, at the time the loan was purchased³⁵, a risk-weight of 75% shall be allocated by the institution. This is similar to the regulatory retail exposure for small and medium enterprises. If a property-holding shell company does not satisfy the requirement of the maximum aggregate exposure of the institution to a single obligor or other requirements above, the risk-weight of 100% shall be allocated to a residential mortgage loan.³⁶

Before Capital Rules have been implemented, property-holding shell company was regarded as the common company, which means that 100% risk weight should be allocated for it. Now there are three kinds: 35%, 75% and 100%. As far as property-holding shell company is concerned, the loans from banking institutions may be easier than before.

3.3 Individuals

³³ *Banking (Capital) Rules*, section 2 (1)

³⁴ *Id.*, section 65(1)

³⁵ *Id.*, section 65 (4) (a)

³⁶ *Id.*, section 65 (4) (b) and 64 (9)

The property lending related to individual may be divided into two parts: residential mortgage and unsecured loans. The residential mortgage is more popular than unsecured loans. Basel II favors residential mortgage, which can be found from the following provisions.

As mentioned above, basic approach is special in Hong Kong and it will apply to the small banking institution. Under this approach, residential mortgage loans shall be allocated a risk-weight of 50%, which is the same as the previous regulation. However, the new regulation added one new requirement, i.e. the loan-to-value ratio of the loan does not exceed 90% at the time a commitment to extend the loan was made by the institution, or in relation to a residential mortgage loan purchased by the institution, at the time the loan was purchased.³⁷ Before Capital Rules, the loan-to-value ratio can be changed by the HKMA according to the situation of property market. Usually, 75% loan-to-value ratio is common. Capital Rules regard 90% loan-to-value ratio as the requirement, which is looser than before.

In the Banking (Capital) Rules, the risk-weights are 35%, 75% and 100% according to different conditions under standardized approach. The conditions applying this provision are the same as those for property-holding shell company. However, the 35% risk weight is the common for residential mortgage, which is lower than 50% in Basel. Thus, it will be easier to obtain residential mortgage for individuals from banking institutions than before.

It can not analyze the impact under IRB approach, but it is expected that the residential mortgage under IRB approach would also be favored by Basel II. The risk weight may decrease.

Nevertheless, decreasing the risk weight for residential mortgage is questioned, especially in the HKSAR.³⁸ The banking institutions in the HKSAR lend too much money into property market. In December 2006, the property lending (including loans for building and construction, property development and investment, and for the purchase of other residential property) accounts for more than 50% of total loans and advances for use in the HKSAR, especially the residential mortgage accounts for about 27% of total loans.³⁹ The implementation of Basel II may cause the increase of residential mortgage, which will make banking system instability.

3.4 Impact on Real Estate Cycle

Property market includes residential market and commercial real estate market. General speaking, commercial real estate market is more sensitive to any change of economics. Under the same condition, banking institutions would prefer residential mortgage to loans secured by commercial real estate. This preference of banking institutions and the high risk of commercial real estate

³⁷ *Id.*, section 115

³⁸ Berry Fong-Chung Hsu, Douglas Arner, Frederik Pretorius, 'Beyond the Basel Accord: Should the Capital Adequacy Ratio Take Account of the Real Estate Environment in the Hong Kong SAR?', *Banking Law Journal*, April 2007

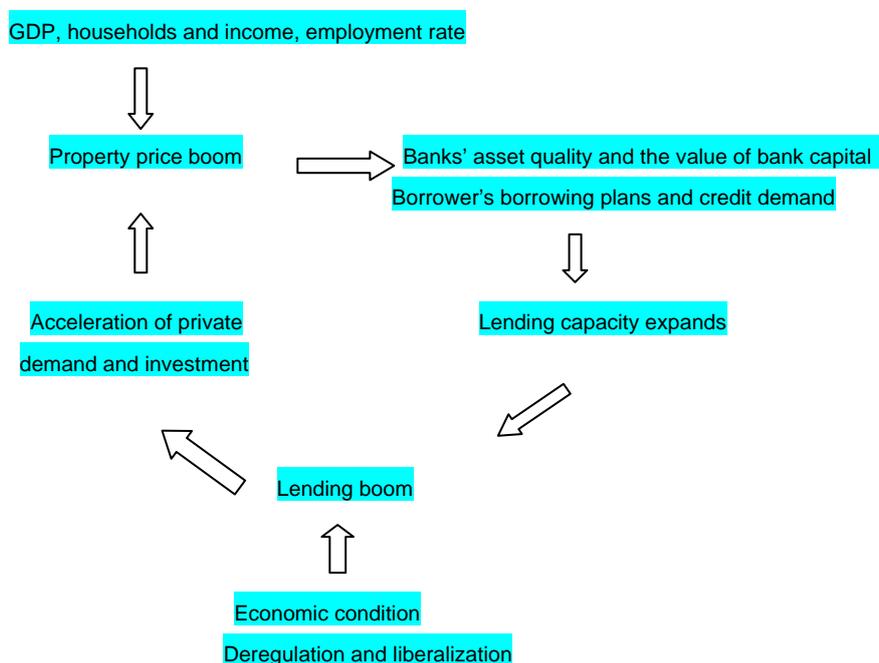
³⁹ <http://www.info.gov.hk/hkma/eng/statistics/msb/attach/T030503.xls>

market are also shown in risk weights for loans secured by property. This paper will only focus on the impact of Basel II on property market. The difference between commercial real estate market and residential market would be neglected.

In the section above, the impact at micro-level is analyzed. It can not foresee whether the impact on supply of property market or on demand of property market would be more important. Thus it is also not obvious that the implementation of Basel II would cause the increase or decrease of property price. However, the change of real estate finance is the trend. More importantly, the implementation of Basel II may affect real estate cycle by creating more market instability.⁴⁰

The relationship between property market and banking sector is bidirectional. The decline of property price could lead to the increase of bad loans in banking institutions. Meanwhile, the increase/decrease of lending from banking institutions would cause the boom/bust of property market. General speaking, the collapse of property market is not caused directly by the decrease of banking lending, but would be worsened by it. The collapse of property market often caused the banking crisis, however, especially after 1980s. This relationship can be shown clearly in the following figure:

Property boom and lending boom⁴¹



⁴⁰ Gary A. Goodman, Robert W. Becker, 'The New Basel II Capital Accord: Business and Legal Challenges for Real Estate Lenders', *Banking Law Journal*, April 2003

⁴¹ This figure is based on the description of relationship in the paragraph above, and referred to one named Asset Price and Bank Lending Cycle, see Don Nakornthab, Chatsurang karnchanasai and Suchot Piamcol, *Banking lending, the housing market, and risks: A test for financial fragility*, BOT Symposium 2004, Thailand.

The experiences showed that the financial crisis often later than the collapse of property market. This is because that it need time to reflect the change of property market in the balance sheet of banking institutions. This also determines that the collapse of property market is often not caused by the withdrawn of property lending. But it will exaggerate the decrease of property price. The faster the property lending is withdrawn, the more instable the property market is.

One reason to revise Basel I is to introduce more sensitive risk management technique. Actually, Standardized approach and IRB approach are more sensitive than approach in Basel I. The standardized approach does not provide that the banking institutions should update the credit rating of borrowers, but the different treatment among the developers give banking institutions a chance to adjust the risk weight of property lending in good time. Supposing the rating provided by external credit rating agency would reflect the change of market, then it can be expected that the decrease of property price would restrain the property lending earlier than before.

IRB approach provides a relatively short forecasting period for PD estimates. PD estimate for each grade must be done at least once a year as the minimum input for IRB approach.⁴² In other words, the banking institutions have at least one chance to adjust the risk weight for property lending in a year. The change of property market would be reflected at most one year.

These provisions will be good for banking institutions because the sensitive approach could keep the soundness of banking system. However, it is not good for property market. When property market is in the down phase, banking institutions may be forced to downsize property lending activities and re-allocate assets classes.⁴³ This could lead to a liquidity crisis in real estate market in short time. The real estate cycle would be exacerbated by the implementation of Basel II.

Nevertheless, the relationship between the real estate cycle and banks' loans would be weakened as the diversification of funding channels. Traditionally, banks' loans are the prominent funding source for property market. As the financial derivatives are created, the finance channels of property market are also extended. The implementation of Basel II increase the cost of property lending, and the much stricter attitude of banking institutions for commercial real estate may push the developers to seek for more finance channels, which will partly reduce the instability of property market caused by Basel II.

4. Conclusion

⁴²Christoph Pitschke, Stephan Bone-Winkel (2006). The Impact of the New Basel Capital Accord on Real Estate Developers. *Journal of Property Investment & Finance*. 24 (1): 7-26

⁴³ Gary A. Goodman, Robert W. Becker, 'The New Basel II Capital Accord: Business and Legal Challenges for Real Estate Lenders', *Banking Law Journal*, April 2003

Basel II has been implemented in some jurisdictions, including the HKSAR. The change of calculation methods for capital adequacy ratio would change the lending attitudes of banking institutions and their preference. In the HKSAR, the close relationship between property market and bank lending determines that the impact on property market may be more serious than in other jurisdictions. In sum, this impact may be shown in the following points: (1) exacerbating the monopoly of property market, i.e. the situation for small and medium developers would be worse than before; (2) increasing the cost of financing from banking institutions (bank lending), which may cause the diversification of financing channels of real estate; and (3) more importantly, affecting real estate cycles negatively by creating more market instability.

Appendix

Table 1

Approach	The classes of claims/exposures	The sub-classes
Standardized Approach	Claims on sovereigns	
	Claims on non-central government public sector entities	
	Claims on multilateral development banks	
	Claims on banks, securities firm	
	<i>Claims on corporate</i>	
	Claims included in the regulatory retail portfolio	
	<i>Claims secured by residential property</i>	
	<i>Claims secured by commercial real estate</i>	
	past due loans	
	higher risk categories	
	other assets	
The Internal Ratings-Based approach	<i>Corporate exposures</i>	Project finance
		Object finance
		Commodities finance
		<i>Income-producing real estate</i>
		<i>High-volatility commercial real estate</i>
	Sovereign exposures	
	Bank exposures	
	<i>Retail exposures</i>	<i>Exposures secured by residential properties</i>
		Qualifying revolving retail exposures
		All other retail exposures
	Qualifying revolving retail exposures	
Equity exposures		

Source: Basel II

Table 2

Credit assessment	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated
Risk weight	20%	50%	100%	150%	100%

Source: Basel II

Table 3
Supervisory categories and UL risk weights for other SL exposures

Supervisory categories	Strong	Good	Satisfactory	Weak	Default
Broadly corresponding to external credit assessments	BBB- or better	BB+ or BB	BB- or B+	B to C-	Not applicable
Risk weight	70%	90%	115%	250%	0%

Source: Basel II

Table 4
Supervisory categories and UL risk weights for high-volatility commercial real estate

Strong	Good	Satisfactory	Weak	Default
95%	120%	140%	250%	0%

Source: Basel II

Formula 1

$$\text{Correlation (R)} = 0.12 \times (1 - \text{EXP}(-50 \times \text{PD})) / (1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times \text{PD})) / (1 - \text{EXP}(-50))]$$

$$\text{Maturity adjustment (b)} = (0.11852 - 0.05478 \times \ln(\text{PD}))^2$$

$$\begin{aligned} \text{Capital requirement (K)} = & [\text{LGD} \times \text{N} [(1 - \text{R})^{-0.5} \times \text{G}(\text{PD}) + (\text{R} / (1 - \text{R}))^{0.5} \times \text{G}(0.999)] \\ & - \text{PD} \times \text{LGD}] \times (1 - 1.5 \times \text{b})^{-1} \times (1 + (\text{M} - 2.5) \times \text{b}) \\ & - \end{aligned}$$

$$\text{Risk-weighted assets (RWA)} = \text{K} \times 12.5 \times \text{EAD}$$

Formula 2

$$\text{Correlation (R)} = 0.15$$

$$\begin{aligned} \text{Capital requirement (K)} = & \text{LGD} \times \text{N} [(1 - \text{R})^{-0.5} \times \text{G}(\text{PD}) + (\text{R} / (1 - \text{R}))^{0.5} \times \text{G}(0.999)] \\ & - \text{PD} \times \text{LGD} \end{aligned}$$

$$\text{Risk-weighted assets (RWA)} = \text{K} \times 12.5 \times \text{EAD}$$