Box 3
Systemic risks and macroprudential supervision

Systemic risks played a role as an important accelerator in the global financial crisis which originated from the US subprime mortgage debacle in 2007 and then spilled over to the rest of the world. The crisis revealed that microprudential supervision alone was insufficient to achieve financial stability. Supervisory authorities also need to strengthen macroprudential supervision to assess and address systemic financial risks to ensure the stability of financial system.

1. The definition and sources of systemic risks

Systemic risk may be defined as a risk of disruption to financial services that is: (1) caused by an impairment of all or parts of the financial system; and (2) may have serious negative consequences for the real economy (IMF, BIS and FSB, 2009).

There are two potential sources of systemic risks (BOE, 2009):

- Aggregate risks: the risks arising from the collective tendency of financial institutions to assume excessive risk in an upswing and then to become excessively risk-averse during the downswing. It could bring about procyclical effects on real economic activities and undermine the stability of the financial sector and real economy.
- Network risks: the risks arising from the interconnectedness or common exposures across the system leading to joint failures of financial institutions at a given point of time.

The global financial crisis has shown that relying only on microprudential supervision of individual institutions and market discipline is insufficient to detect and mitigate systemic risks. Supervisory authorities should adopt macroprudential measures through regulations and supervisions (i.e. macroprudential supervision policies) to address the two sources of systemic risks and the spillover channels of excessive leverage and maturity mismatches in order to maintain financial stability.

2. The international adoption of macroprudential supervision policies

Macroprudential supervision seeks to enhance the stability of the whole financial system and, therefore, should take the interactions between the financial system and the real economy into account (BIS, 2010). According to a survey of 33 central banks in November 2009 (CGFS, 2009), it showed that macroprudential instruments mainly targeted credit growth as well as the size and composition of bank balance sheets, as presented in Table B3.1. In fact, Asian countries implemented a variety of macroprudential instruments during the 1997 Asian financial crisis.

Table B3.1 Macroprudential instruments adopted by central banks

Objectives	Types of instruments	Examples
Measures targeting credit growth	1. Limits calibrated to borrower risk characteristics	Loan-to-value caps, loan-to income limits, foreign currency lending limits
	2. Absolute limits	Aggregate or sectoral credit growth ceilings, limits on exposures by instrument
Measures targeting size and composition of bank balance sheets	1. Measures to limit interconnectedness (1) Limits on leverage (2) Financial system concentration limits	(1) Size-dependent leverage limits or asset risk weights, capital surcharges for systemically important institutions (2) Limits on interbank exposures
	2. Measures to limit procyclicality (1) Capital (2) Provisioning	(1) Time-varying capital requirements, restrictions on profit distribution (2) Countercyclical/dynamic provisioning
	3. Measures to address specific financial risks (1) Liquidity risk (2) Currency risk	(1) Loan-to-deposit limits, core funding ratios, reserve requirements (2) Limits on open currency positions or on derivatives transactions

Note: The table includes only instruments where the main or usual purpose is macroprudential. This excludes instruments such as official interest rates, emergency liquidity provisions and foreign exchange market intervention, since these are mainly used for other policy purposes, even though their usage might often have macroprudential benefits.

Source: Committee on the Global Financial System (2010).

3. Macroprudential supervision policies adopted by the CBC

Promoting financial stability is one of the operational objectives pursued by the CBC. To achieve this objective, besides adopting appropriate monetary and foreign exchange policies to provide a beneficial financial environment, the CBC has used various macroprudential tools in a timely manner in recent years, as well as serving as the lender of last resort when necessary, so as to maintain financial stability. The macroprudential tools deployed by the CBC are as follows:

- Declaring to take asset prices into consideration when setting monetary policies; promulgating the Regulations Governing the Extension of Land Collateralized Loans and Housing Loans in Specific Areas by Financial Institutions, which set limitations on loan-to-value ratios and other lending terms for real estate loans for the purposes of enhancing credit risk management in financial institutions and maintaining financial stability.

- Strengthening macroprudential analysis and surveillance, as well as issuing the Financial Stability Report periodically to offer insight into the state of Taiwan's financial system and its potential risks and spur market participants to take responsive actions in a timely manner.
- Enhancing the prudential supervision of the liquidity of financial institutions, as well as monitoring the funding maturity structure of individual financial institutions and the overall liquidity stance in the financial system in response to the exit of the blanket deposit insurance scheme.

4. Further challenges in the future

The importance of macroprudential supervision policies in maintaining financial stability has drawn international recognition and a high degree of attention. However, there are numerous implementation challenges, including:

- There may be tradeoffs between macroprudential policies and other policy measures. For example, central banks raising policy rates to cope with rising property prices and heightened inflationary pressures may increase the vulnerability of banking systems.
- Effective tools for assessing systemic importance are still not available. Also, supervisory tools targeting systemically important institutions, such as systemic capital and liquidity surcharges, and restrictions on credit growth, need to be further calibrated and agreed on internationally.
- Risk models and tools to evaluate systemic risks lack maturity and need to be improved. Some macroprudential supervisory tools are in the initial stages of development and their effectiveness is yet widely recognized.
- Reinforcing macroprudential supervision may involve a restructuring of the existing supervisory framework and accountability, which would have extensive effects throughout the financial system.

References:

1. Bank for International Settlements (2010), "80th Annual Report."
2. Bank of England (2009), "The Role of Macroprudential Policy," Discussion Paper, November.
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4. IMF, BIS and FSB (2009), "Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations," Report to G20 Finance Ministers and Governors, October.