Box II-1

The impact of the US sub-prime crisis

Financial conditions abroad have worsened dramatically since the last issue of *Monetary Bulletin*, as a result of turbulence in global financial and money markets. To some extent, the state of unrest currently dominating the global capital markets stems from the sharp rise in the delinquency rates on US mortgages, though the deeper roots of the problem lie in global imbalances and in the economic policy of the world's leading nations. Around mid-2005, the frequency of default began to rise but was limited initially to the class of housing loans called sub-prime mortgages, which were granted to homebuyers with poor credit ratings or a limited credit history. The problem has been magnified by falling house prices and rising debt service, especially as a result of the interest rate reset clauses that were a common provision of such loans. As a result of escalating delinquencies, in August 2007 the price of the asset-backed securities related to sub-prime mortgages started to fall and their liquidity was reduced.

Vulnerabilities in the financial markets emerge

The liquidity of mortgaged-backed securities and securitisations of various sorts suddenly contracted.[1] Credit rating agencies responded by lowering their ratings for a number of structured instruments, especially those linked to sub-prime mortgages. This exacerbated the unrest in the financial markets, which in turn made it more difficult for banks to sell new corporate bond issues that they had guaranteed, especially those related to leveraged buyouts. A number of banks were forced to hold those liabilities in their portfolios as a result. This exposed the banks to rising "warehousing risk", which strained the banks' equity position and boosted the demand for liquid assets.

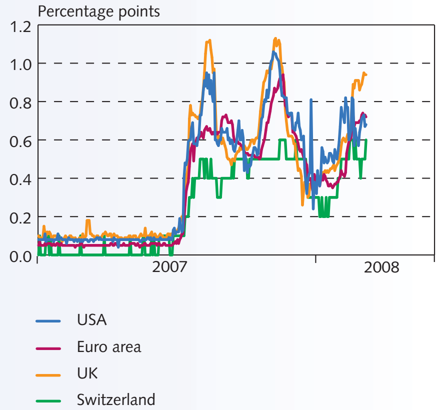
Turmoil spreads to the money market

In July 2007, the unease began to make itself felt in the US money market. Interest rates suddenly shot upwards, far in excess of expected changes in key policy rates (see Chart 1). The disquiet spread quickly to other countries, particularly the euro area and the UK. The sub-prime crisis stimulated vastly increased demand and, at the same time, contributed to a tightened supply of short-term credit. There were several reasons for this. First, it was uncertain which financial institutions had exposures to sub-prime mortgage-related securities, and how large these exposures were. This greatly increased counterparty risk because money market transactions are unsecured. The uncertainty was greater than it would otherwise have been because financial institutions generally invested in these instruments through independently operated investment funds referred to as Special Purpose Vehicles (SPVs). These SPVs did not directly affect the balance sheets of the financial institutions concerned and were therefore not subjected to the same rules – for example, regarding transparency and capital adequacy ratios – as were other investments. In most cases, the SPVs had low capital buffers in proportion to total assets built into their structures, which left them little room to absorb losses.

Second, failures in the market for asset-backed commercial papers (ABCP) heightened demand in the money market. Banks began to bolster their liquidity position in case they needed to provide liquidity to related SPVs. They also saw the need to enhance their liquid assets to cushion themselves against increased funding needs in the event that they were forced to take on the liabilities of the SPVs. Investments in mortgaged-backed structured securities are gener-

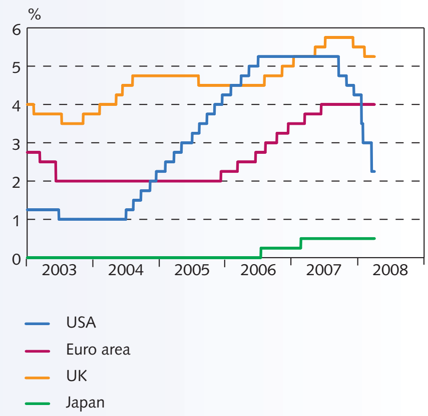
1. It is difficult to state with certainty, however, whether this alone is the principal cause of worsening financial market conditions or whether it is simply a side effect of more broad-based fundamental changes in the financial system.

Chart 1
Spread between interbank rates and expected policy rates[1]
Daily data February 2, 2007 - April 2, 2008



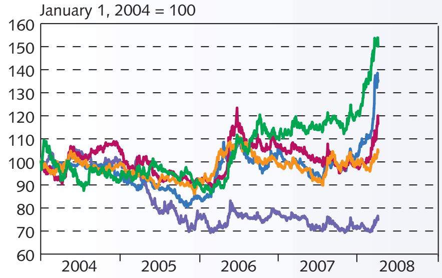
1. Spread between interbank rates and interest swap agreement for 3 months.
Sources: Bloomberg, Reuters.

Chart 2
Central Bank policy rate
Daily data January 1, 2003 - April 2, 2008



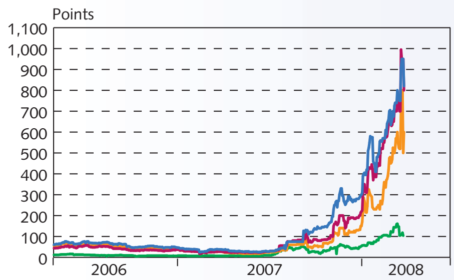
Source: Reuters EcoWin.

Chart 3
Exchange rate of high-yielding currencies against the Euro
Daily data January 1, 2004 - April 1, 2008



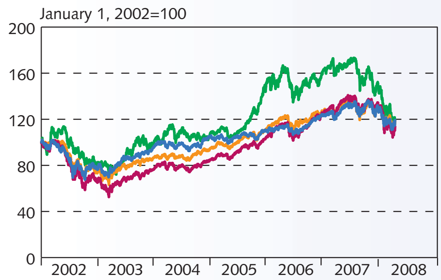
Sources: Bloomberg, Reuters EcoWin.

Chart 4
CDSs of Icelandic banks and Itraxx Financial Index
Daily data July 8, 2006 - April 2, 2008



Sources: Bloomberg, Reuters.

Chart 5
Equity prices
Daily data January 1, 2002 - April 1, 2008



Source: Reuters EcoWin.

ally long-term, but the SPVs were funded primarily through the issue of asset backed commercial papers (ABCPs). These short-term ABCPs were frequently secured by sub-prime structured instruments and often backed by some sort of supplemental guarantee from the bank concerned.[2] The collapse in the value of structured securities linked to sub-prime mortgages made it difficult for the investment funds to meet their funding needs through bond issues. The financial institutions connected with the SPVs were forced to come to the rescue and guarantee short-term funding in the interbank market.

Third, demand for credit escalated among money market funds seeking to improve their liquidity position in anticipation of a possible wave of withdrawals by investors.

Central banks lend assistance

Initially, the central banks in the US, the UK, and the EU responded to developments in the interbank markets by increasing banks' access to liquidity. Several central banks, led by the US Federal Reserve, also began to lower their policy interest rates considerably in order to appease the markets (see Chart 2). The European Central Bank and the Bank of Japan have not lowered their rates but have suspended interest rate hikes for the time being. In September, the Bank of England was forced to assist the British mortgage lender Northern Rock after it emerged that the bank's funding, which was based largely on the issue of short-term bonds, had collapsed. Ultimately, due to difficulties in the bank's funding, the British government announced in February 2008 that Northern Rock would be nationalised, the first such nationalisation to occur in the UK since the 1970s.

In mid-March, JP Morgan made a takeover bid to shareholders of the investment bank Bear Stearns, after it came to light that Bear Stearns was experiencing severe liquidity problems and was headed for collapse. The US Federal Reserve Bank facilitated the bid by JP Morgan. The rescue of an investment bank marks a significant change in Federal Reserve policy.

Reassessment of investment risk

Mounting market turmoil pressed Treasury bond yields down sharply when investors began to seek out safe returns. Despite the drop in base interest rates, credit terms deteriorated and the supply of credit shrank, especially in the United States. Europe was affected as well.

Following central bank intervention, the interbank markets more or less normalised towards the end of 2007. During the first months of this year, however, turbulence has resurfaced in the interbank markets (see Chart 1), and interest rates on loans with maturities of longer than six months are still higher than would be expected in a normal market climate. In general, credit spreads have risen steeply since the onset of the tumult in the financial markets. Changes in risk assessment can be seen, for example, in sizeable increases in the price of credit default swap (CDS) agreements. In part, however, these increases can be traced to technical issues in the credit derivatives market rather than to actual underlying risk factors. This is because credit default swaps are an important element in the pricing of structured securities and transactions with them. Serious flaws have come to light in these markets in the wake of the sub-prime crisis, which has fuelled general market distrust of structured financial instruments. Spreads on mortgage-backed bonds continue to rise. In the US, credit spreads on other bonds backed by prime mortgages, commercial real estate loans, credit card and automobile

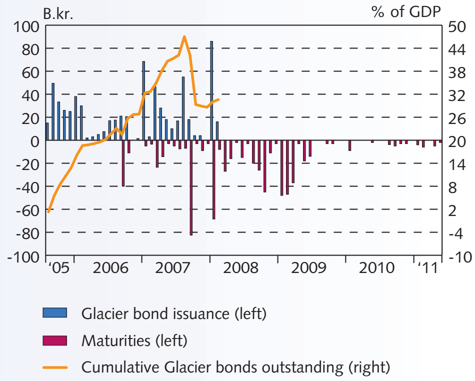
2. Conduits, Structured Investment Vehicles (SIV), and SIV-lites are the most common types of SPVs. The difference in these various types of investment funds lies particularly in how they are funded and to what degree the bank establishing them guarantees their obligations.

loans, and related derivatives have risen as well, primarily as a result of rising fear of increased delinquency on loans other than sub-prime mortgages.

Precipitous decline on asset markets and contraction in carry trading

The developments in the global capital markets have made a strong impact on the world economy, especially in countries with a wide current account deficit – like Iceland – and those with a large financial system. Since mid-summer 2007, equity prices have plummeted on all of the world's principal markets (see Chart 5), with financial companies taking the brunt of the blow. Icelandic financials have been no exception. Their funding is complicated by high CDS spreads, and service of Iceland's foreign debt has become more expensive as a result. The position of the banks has undermined the króna, which has lost considerable ground. Other things being equal, this negatively affects the current account. In August, carry trading fell off significantly (see Chart 6), especially where the Japanese yen had been used as the funding currency. The yen appreciated markedly as a result, while high-yielding currencies dropped in value (see Chart 3). The interplay between these developments and the financial position of Iceland's banks (see Box III-1) is one of the chief reasons why the Icelandic economic climate has been so stormy of late.

Chart 6
Króna Eurobond issuance[1]
Monthly data



1. Data until April 2, 2008 inclusive.
Sources: Reuters, Central Bank of Iceland.