

# Financial Stability Review

March 2011



South African Reserve Bank

90<sup>th</sup>

Anniversary

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This issue of the *Financial Stability Review* focuses mainly on the six-month period ending December 2010. However, selected developments up to 12 April 2011 were also reported on. Data may include own calculations made for purposes of this publication.

Comments and enquiries relating to this *Review* are welcomed and should be addressed to:

Head: Bank Supervision Department  
South African Reserve Bank  
PO Box 427  
Pretoria 0001  
Tel. +27 12 313-3601

E-mail: [sarbfsrc@resbank.co.za](mailto:sarbfsrc@resbank.co.za)

<http://www.reservebank.co.za>

ISSN 1811-2226

Produced by Publishing Section



## Purpose of the *Financial Stability Review*

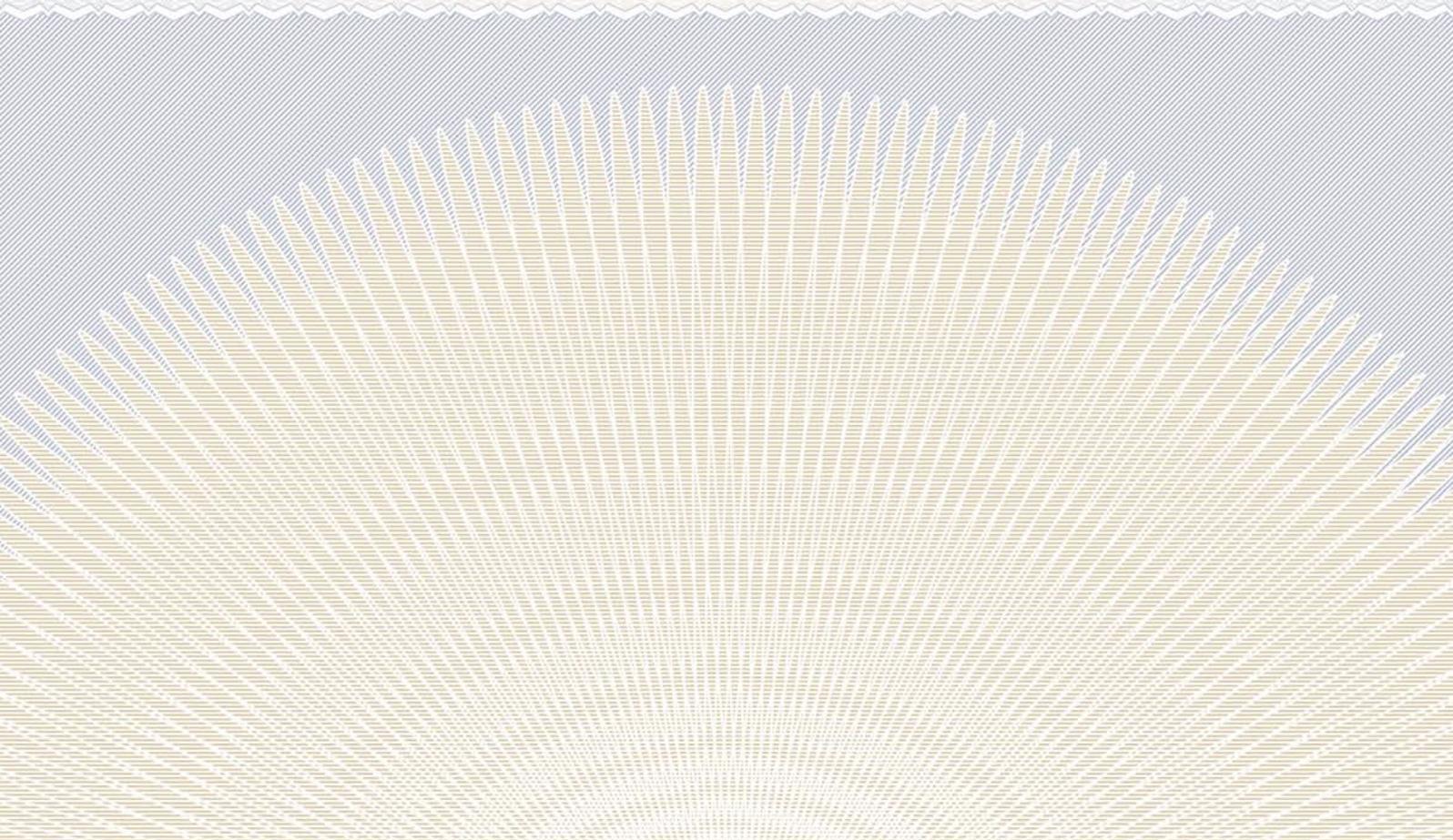
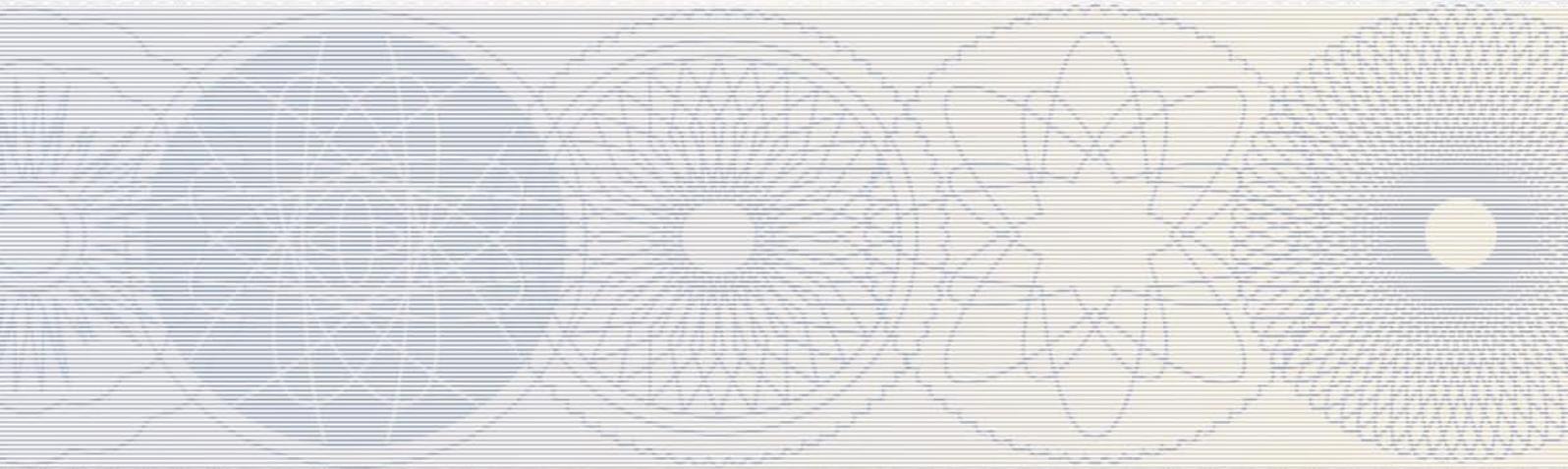
The South African Reserve Bank (the Bank) defines its primary objective as the achievement and maintenance of price stability in the interest of balanced and sustainable economic growth in South Africa. In addition to this, the Bank's role and mandate in overseeing and maintaining financial stability were reaffirmed by the government. In pursuit of this objective and to promote a stable financial system, the Bank publishes a semi-annual *Financial Stability Review*. The publication aims to identify and analyse potential risks to financial system stability, communicate such assessments and stimulate debate on pertinent issues. The Bank recognises that it is not the sole custodian of, but contributes significantly towards financial system stability, and co-ordinates a larger effort involving the government, other regulators, self-regulatory agencies and financial market participants.

## Defining financial stability

Financial stability is not an end in itself but, like price stability, is generally regarded as an important precondition for sustainable economic growth and employment creation.

'Financial stability' is defined as the smooth operation of the system of financial intermediation between households, firms and the government through a range of financial institutions. Stability in the financial system would be evidenced by (i) an effective regulatory infrastructure, (ii) effective and well-developed financial markets, and (iii) effective and sound financial institutions. In its pursuit of financial stability, the Bank relies on market forces to the fullest possible extent and believes that any of its actions taken to contain systemic risk should be at the minimum level required to be effective.

Financial instability, conversely, could manifest through banking failures, intense asset-price volatility or a collapse of market liquidity and, ultimately, in a disruption in the payment and settlement system. Financial instability affects the real sector due to its links to the financial sector. It has the potential to cause significant macroeconomic costs, as it interferes with production, consumption and investment, and, therefore, defeats national goals of broader economic growth and development.



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## Overview

This issue of the *Financial Stability Review* focuses mainly on the six-month period ending December 2010 but also on selected developments up to 12 April 2011. Since the release of the September 2010 *Financial Stability Review*, the global financial system has remained vulnerable and significant policy challenges still need to be addressed. Pockets of vulnerability and risk remain, mainly in the form of sovereign risk in the euro area, banking-sector vulnerabilities in the United States (US) and euro area, continuing deleveraging in advanced economies and large amounts of capital flows to emerging-market economies (EMEs). These developments present challenges to policy-makers and add to the risk of sudden reversals of inflows.

The global economic recovery remains of a multi-speed nature with subdued economic growth and high unemployment in advanced economies, and buoyant economic activity and emerging inflation pressures in many EMEs. Many developing economies, particularly in sub-Saharan Africa, are also growing strongly. The second half of 2010 was characterised by stronger-than-expected economic activity, mainly supported by new policy initiatives in the US. However, distressed labour markets, growing foreclosures in real-estate markets and low levels of credit extension in the banking sector continue to impact negatively on the pace of economic recovery in the US. In the euro area the economic recovery is expected to be challenged by uncertainty surrounding sovereign debt and planned fiscal tightening. In Japan economic output contracted in the fourth quarter of 2010. Although it was anticipated that a rebound in exports could see the Japanese economy renew growth in the first quarter of 2011, the devastating earthquake and tsunami that struck Japan in March could significantly impact economic growth.

Banking-sector vulnerabilities remained a concern in advanced economies. In some cases these vulnerabilities were addressed by an increase in regulatory capital ratios. Euro area banking systems, however, remain vulnerable to deterioration in the credit quality of their sovereign debt holdings. Real-estate markets continue to pose risks to the stability of banking systems. Residential and commercial real-estate delinquencies in the US have increased sharply as lenders delayed home seizures. US home foreclosures hit a record high in 2010, and could also become a litigious issue between US banks and defaulting homeowners, representing a risk for US banks and households.

EMEs remained an important driver of global economic growth in the second half of 2010 with countries in developing Asia recording the most rapid growth among all EMEs. For 2011 and 2012, economic growth in EMEs is forecast to be slightly lower, given lingering downside risks in the form of rising inflationary and overheating pressures, a sudden reversal of capital inflows and sharp fluctuations in commodity prices. In many sub-Saharan African countries economic growth has returned to pre-crisis levels, but growth prospects will depend on a sustainable recovery in the global economy. Recent political instability in the Middle East and North Africa (MENA) region may hinder the flow of funds into the region. The resulting rise in oil prices, coupled with rising food prices, poses significant challenges to the economic outlook in the sub-Saharan African region.

Various groupings of financial authorities and international standard setters, including the Group of Twenty (G-20) Forum, the Basel Committee on Banking Supervision (the Basel Committee) and the Financial Stability Board are actively contributing towards initiatives to create a stronger international regulatory framework. At the same time, countries have also responded by reforming national regulatory systems. The roles and responsibilities of central banks in regulating and supervising financial systems have been extended. Principles have been developed to deal with the “too-big-to-fail” moral hazard problems and systemically important financial institutions. In addition, regulatory gaps have been addressed in some jurisdictions by extending the regulatory perimeter to include hedge funds, private equity funds and rating agencies, and more transparency and accountability in the derivatives market are envisaged. It is expected that these initiatives will contribute to a more stable global financial system.

In South Africa real gross domestic product (GDP) growth expanded during the fourth quarter of 2010, indicating that South Africa is on a steady path of economic recovery. Despite these positive signs, the recovery was not sufficient to reduce the high level of unemployment. The level of confidence in the financial services sector rose marginally in the fourth quarter of

2010, although the retail banking confidence index fell sharply, mainly due to deterioration in profitability and a downbeat short-term economic outlook. The South African banking sector remained stable and banks were adequately capitalised. Gross loans and advances increased in December 2010 compared to a year ago, albeit at a moderate pace. Banks' lending standards are showing signs of loosening, although it is not expected to have a significant impact on credit extension, given the extent of household debt. Operating expenses in the banking sector increased, causing the ratio of operating expenses to gross income to remain well above the 50 per cent level.

Local currency bond markets in South Africa attracted significant capital inflows during the period under review and the ongoing sovereign debt crisis in Europe did not deter investors from seeking higher returns in riskier markets. Although such inflows reflect a positive sentiment towards the country, they could also be destabilising in terms of appreciation pressure on the exchange rate and the risk of a sudden reversal in these inflows. In the fourth quarter of 2010, however, non-residents became net sellers of local currency bonds. The improving growth outlook and the rise in commodity prices during 2010 lent support to the domestic equity market. In line with the trend in other EMEs, non-residents became net sellers of local equities and broad-based losses were experienced during the first quarter of 2011.

After the business confidence index had declined somewhat in the fourth quarter of 2010, it rose to a three-year high in the first quarter of 2011 as manufacturers benefited from increased exports and stronger vehicle sales. It is expected that the improved outlook for economic growth in 2011 could boost the confidence level of businesses further. Consumer confidence remained unchanged in the fourth quarter of 2010 before declining marginally in the first quarter of 2011, mainly as a result of rising fuel and electricity prices. The profile of credit-active consumers worsened somewhat in the fourth quarter of 2010 as household debt to disposable income remained at elevated levels and the pace of the economic recovery was somewhat constrained. The high unemployment rate, still-high levels of defaults on debt payments and labour market rigidities are some of the factors explaining still-high levels of consumer financial vulnerability.

Recent developments enhancing the robustness of the financial regulatory environment in South Africa include reviewing the prudential framework for foreign investment by private and public pension funds, reviewing the framework for cross-border direct investment in South Africa, the release of the final draft of amendments to Regulation 28 of the Pension Funds Act, 1956, and reviewing the Securities Services Act, 2004 as part of a process to consolidate several financial services Acts. The Reports on Observance of Standards and Codes (ROSCs) for the banking, insurance and securities markets supervision published in December 2010 were generally positive, apart from highlighting some areas where the regulatory and supervisory framework could be developed further.

In order to strengthen regulatory measures already in place and address possible regulatory gaps domestically, the Minister of Finance released a policy paper in February 2011 entitled "A safer financial sector to serve South Africa better". The policy paper outlines key proposals to enhance financial stability, consumer protection and financial inclusion.

Furthermore, South African banks are well placed to implement the Basel Committee's proposed set of bank supervision reforms. A new risk-based solvency regime for short- and long-term insurers is being developed by the Financial Services Board (FSB) that will contribute towards the soundness of the insurance sector. Other regulatory initiatives include regulating systemically important financial institutions (SIFIs), expanding the scope of financial regulation and improving the financial crisis resolution framework.

The Bank has also embarked on a number of initiatives to streamline its financial stability function. Apart from receiving confirmation from the Minister of Finance of its financial stability responsibilities and mandate, the Bank has restructured its financial stability function by establishing a Macroprudential Supervision Unit in its Bank Supervision Department. The status, mandate and membership of the Financial Stability Committee (FSC) of the Bank were also enhanced and elevated. The FSC now consists of all the members of the Monetary Policy Committee (MPC) and other members with financial stability responsibilities in the Bank.



## Introduction

This issue of the *Financial Stability Review*, which focuses mainly on the six-month period ending December 2010, comprises two main sections, namely (i) financial stability developments and trends, and (ii) infrastructure and regulation.

The first section starts with an overview of current international macrofinancial conditions. It contains a discussion of the major developments in the international, emerging-market and regional environment that may influence financial stability in South Africa. This section concludes with an analysis of the main developments in the South African financial system, focusing specifically on the sectors that have a significant bearing on the stability of the domestic financial system.

The second section focuses on the financial system infrastructure and regulation, and starts with an update on financial policy, and legislative and infrastructural developments affecting the South African financial system. Also included in this section is a discussion of the Reports on Observance of Standards and Codes for the banking, insurance and securities markets supervision. This is followed by an assessment of the possible impact of financial leverage standards proposed by the Basel Committee. This section concludes with a discussion on the role of Strate Limited (Strate) as South Africa's Central Securities Depository.

Finally, this issue of the *Financial Stability Review* also contains a note on interlinkages in the South African interbank system and how these interconnections can lead to an enhanced liquidity allocation and increased risk sharing in the banking system.

# Financial stability developments and trends

## International macrofinancial developments

This section provides an overview of macroeconomic and financial developments in advanced economies, EMEs and Africa, and how these developments have impacted, and could potentially impact, on the financial system in South Africa.

Global economic activity moderated somewhat in the second half of 2010 compared to the first half. This slowdown was expected as the global economy is changing from a brisk recovery phase to a phase in which the pace of recovery is slower, and more sustainable. The recovery remains of a multi-speed nature, with subdued growth, high unemployment and lingering vulnerabilities in financial systems contributing to downside risks in advanced economies. In EMEs, however, economic activity remains buoyant, with strong capital inflows adding to overheating and inflationary pressures in certain cases.

Although global macrofinancial conditions improved broadly during the second half of 2010, pockets of vulnerability and risk remained (see Box 1 for the World Economic Forum's assessment of global risks in 2011). Real-estate markets and consumption expenditure were still weak in many advanced economies and securitisation markets remained flat. Financial turbulence re-emerged in the euro area in the last quarter of 2010 as concerns about banking-sector fragility and fiscal sustainability in Ireland caused credit default swap (CDS) spreads to widen in peripheral European countries; in some cases reaching historical highs. More recently, Portugal requested assistance from the International Monetary Fund (IMF) and the European Union (EU), causing further concerns of contagion to the rest of peripheral Europe. Although the turmoil could lead to increased levels of risk aversion and a scaling back of exposures to EMEs, markets have become more discriminating.

### Box 1 World Economic Forum assessment of global risks in 2011<sup>1</sup>

In an effort to analyse the global risk landscape in the decade to 2021 and enhance understanding thereof, the World Economic Forum identified important risks in its *2011 Global Risk Report*. Despite having generated sustained economic growth, globalisation has shrunk and reshaped the world, making it more interconnected and interdependent. Accordingly, the world faces greater concerns regarding global risks, prospects of rapid contagion and the threat of disastrous impacts. Economic disparities and global governance failures have been identified as the most significant risks in the global environment. Beyond these risks are three clusters of risks, namely (i) macroeconomic imbalances, (ii) illegal activities in economies, and (iii) water-food-energy risks.

Arising from the tensions between the increasing wealth and influence of emerging-market economies (EMEs) and high levels of debt in advanced economies, three economic risks are mentioned, namely (i) global imbalances and currency volatility, (ii) fiscal crises, and (iii) asset-price collapse. Scenarios were identified in which these risks could produce severe challenges to the global financial and economic systems. In the first scenario a combination of recessionary pressures and a lack of market confidence could drive both fiscal and banking crises in selected advanced economies, resulting in a fall in the value of government bonds and, consequently, the value of assets invested by financial institutions. In some countries, as the threat of sovereign default rises, capital may flee banks that are seen to be reliant on public rescues. The second scenario considers the impact of increasing gross capital flows to EMEs. These flows could result in asset bubbles as rising equity markets influence real-estate prices. Such bubbles could give rise to severe crashes, damaging both EMEs and the global economy. There are three primary levers through which these risks could be addressed: (i) strengthening global co-ordination; (ii) strengthening financial systems through better surveillance of the financial sector, tighter capital and liquidity ratios for all banking institutions, risk retention for securitisation, and improved transparency and counterparty risk management in the over-the-counter derivatives market; and (iii) facilitating domestic transition towards balanced economies.

Illegal activities in economies are more pervasive in EMEs and include illicit trade, organised crime and corruption. The opaqueness of these risks has, over time, resulted in little attention and few resources devoted to mitigating them, thereby increasing their significance considerably. Furthermore, this cluster of risks influences other important global risks such as geopolitical conflicts. Measures that could be used to mitigate these risks include the improvement of global co-ordination with stronger multilateral frameworks, and increasing the transparency of international financial and trade flows.

1 World Economic Forum, *Global Risks 2011*, 6th ed. (Davos: World Economic Forum, January 2011), <http://www.weforum.org>.

Water, food and energy security are chronic impediments to economic growth and social stability. The rapidly increasing global population and growing prosperity, especially in EMEs, are putting unsustainable pressures on these resources. Response strategies in this regard include integrated and multi-stakeholder resource planning, regionally focused infrastructure development, market-led resource pricing, community-level empowerment and implementation, and technology and financial innovation.

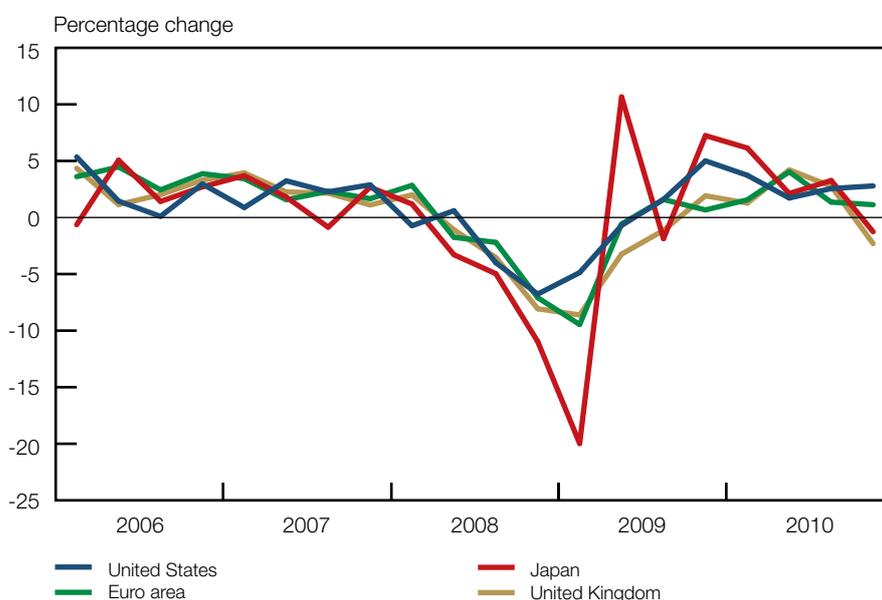
## Financial and economic developments in advanced economies

### Economic growth

Economic growth remained subdued in advanced economies, unemployment levels remained high and renewed stress in the peripheral euro area countries contributed to downside risks during the second half of 2010. After contracting by 3,4 per cent in 2009, the GDP in advanced economies grew by about 3 per cent in 2010 and is projected to moderate to about 2,5 per cent in 2011. The strengthened output levels in advanced economies were still partly caused by stimulus measures although, generally, private consumption started to make stronger contributions to economic growth.<sup>2</sup>

2 IMF, *World Economic Outlook Update*, (Washington DC: IMF, January 2011).

Figure 1 Quarterly growth in real GDP



Although the economic recovery is expected to continue in most regions, indications are that it could be at a fairly moderate pace. In the US, economic growth increased, supported by quantitative easing (QE)<sup>3</sup> and fiscal relief in the latter part of 2010. However, distressed labour markets, growing foreclosures in real-estate markets and low levels of credit extension in the banking sector continue to impact negatively on the pace of economic recovery.

In the euro area the recovery is expected to be challenged by uncertainty surrounding sovereign debt and planned fiscal tightening. GDP growth moderated further in the fourth quarter of 2010, following a strong recovery in the first half of the year. A deepening gap is, however, appearing between Germany, where investment sentiment is recovering strongly as economic conditions improve, and the peripheral European economies which are expected to remain in recession or experience minimal recovery at best.

In Japan economic output contracted in the fourth quarter of 2010, the first time since the third quarter of 2009. Although it was anticipated that a rebound in exports could see the Japanese economy renew growth in the first quarter of 2011,<sup>4</sup> the devastating earthquake and tsunami that struck Japan in March could significantly impact economic growth. By contrast, some

3 A second QE2 programme was announced in early November 2010 in which the US Fed undertook to purchase US\$600 billion long-term securities over the eight months following the announcement. This programme is aimed at stimulating the US economy.

4 The World Bank, *Global Economic Prospects*, (Washington DC: World Bank, January 2011).

analysts believe that the need for reconstruction may prove to be a catalyst to economic activity. However, with government debt at about 200 per cent of GDP, securing funding for rescue and rebuilding efforts will be a significant challenge. The Bank of Japan reacted immediately by injecting large amounts of liquidity into the market to ease market concerns and stabilise the banking system.

## Vulnerabilities in the euro area

Sovereign risks remain elevated and the interaction between sovereign and banking-sector risks has intensified in the euro area. Structural weaknesses in sovereign balance sheets are still at risk of spilling over to financial systems and have negative consequences for economic growth over the medium term. Concerns in peripheral countries in Europe are persisting following bail-out packages for Greece and Ireland. Despite hopes of preventing further contagion, Portugal also had to request assistance in early April 2011. According to analysts, linkages between the behaviour of peripheral debt markets seem to be very strong and the risk of contagion to Spain, the euro area's fourth largest economy, remains real. The EU/IMF support programmes for Greece and Ireland remain on track and fiscal performance in Greece was perceived as better than expected. Greece's sovereign credit rating was, however, downgraded in early March 2011 (see Table 1 for recent downgrades).

**Table 1** Long-term foreign-currency sovereign rating downgrades in selected peripheral European countries

	March 2011			January 2010			Notches downgraded		
	Moody's	S&P*	Fitch	Moody's	S&P*	Fitch	Moody's	S&P*	Fitch
Greece .....	B1	BB-	BB+	A2	BBB+	BBB+	8	5	3
Ireland .....	Baa1	A-	BBB+	Aa1	AA	AA-	6	4	4
Portugal.....	A3	BBB-	A-	Aa2	A+	AA	4	5	4
Spain.....	Aa2	AA	AA+	Aaa	AA+	AAA	2	1	1

\* S&P: Standard & Poor's

Sources: Bloomberg and own calculations

Sovereign risks could spill over to banks in countries under fiscal pressure as they experience difficulties rolling over their funding due to a sharp increase in default insurance cost. Several countries and their main banks will have large financing needs in 2011, and the convergence of funding pressures and sustained banking-sector vulnerabilities make financial systems frail and highly susceptible to deterioration in market sentiment.<sup>5</sup> Although spillovers to outside the euro area have been negligible to date, fragility in banking systems of advanced economies remains a major source of concern. Sovereign default risk remains a big threat to the global economic recovery and financial stability, and policy-makers and investors globally are expected to be monitoring events closely.

The euro area is also confronted by an existential challenge as a sovereign debt crisis spreads across Portugal, Ireland, Greece and Spain, and the unity of the euro area is being challenged. A default by any member country could trigger contagion to the rest of the periphery and lead to the eventual exit of weaker member countries from the monetary union. However, from within the euro area, there is a view that the scenario of a break-up is unlikely since it would have substantial costs for both strong and weak euro area countries.

Important policy actions at national and euro area levels were taken during the second half of 2010. First, the Securities Markets Programme (SMP) was introduced by the European Central Bank (ECB) according to which Eurosystem central banks may purchase marketable debt instruments issued by central governments, and public and private entities in the euro area. Second, the European Financial Stability Facility<sup>6</sup> (EFSF) was established as a temporary facility, to be succeeded by a permanent European Stability Mechanism<sup>7</sup> (ESM) in 2013 which will only be accessible in extreme conditions. At an EU summit in March 2011, the resolutions to the

5 IMF, *Global Financial Stability Report, Market Update*, (Washington DC: IMF, January 2011).

6 The EFSF is a special-purpose vehicle, agreed on by the 27 member states of the EU on 9 May 2010, aimed at preserving financial stability in Europe by providing financial assistance to euro area states in economic difficulty.

7 In October 2010 the European Council agreed on the need to set up a permanent crisis mechanism to safeguard the financial stability of the euro area as a whole.

EFSF were still not finalised, indicating a failure to effectively address the sovereign debt crisis in the euro area.

According to the IMF,<sup>8</sup> there is a need to reduce uncertainty and restore confidence in financial markets in the EU. Four important steps required to address the issue were identified. First, plans for recapitalisation and restructuring of viable financial institutions and the closure of non-viable ones should follow a rigorous and credible bank stress-testing exercise.<sup>9</sup> Second, the effective size of the EFSF should be increased and it should have a more flexible mandate.<sup>10</sup> Third, euro area-wide resolution mechanisms need to be deployed and strengthened as needed. Fourth, the ECB needs to continue the supply of liquidity to banks for the time being and keep its SMP programme active.

## Financial-sector fragility

In many advanced economies it is imperative to accelerate the repair and reform of financial institutions and markets. The burden on monetary and fiscal policy to support the economic recovery will only be eased once credit conditions normalise. Advanced economies have had low interest rates for an extended period. Although this has been an effective economy-wide support measure, low interest rates and the use of quantitative easing can also have adverse financial stability side effects (see Box 2).

### Box 2 Extended period of accommodative policy

In certain major advanced economies, including the United States (US), euro area, United Kingdom and Japan, accommodative monetary and fiscal policies were introduced to support the economic recovery. Even though accommodative policies are still required, an extended period of easy monetary conditions and fiscal relief could also have unintended consequences.

A lengthy period of accommodative monetary policy could lead to excessive credit creation and the danger that investors seeking higher returns become more willing to incur higher risks. Increased risk appetite could encourage large capital flows to emerging-market economies (EMEs) and add to commodity price volatility. It could also lead to the underpricing of risk and unsustainable increases in asset prices. Unusually low policy rates make it possible for banks to loosen lending standards once credit demand increases, which could encourage negligent lending practices. Credit growth in the euro area and the US has, however, remained quite sluggish despite the low interest rate environment.

Furthermore, exceptionally low policy interest rates pose serious challenges to fixed-income investors such as pension funds and insurance companies. A drawn-out period of low interest rates weakens both sides of their balance sheets as it increases the net present value of their future liabilities, while low asset returns reduce income on their investment portfolios. Increasing demographic pressures from ageing populations and the lengthening of life expectancy add to these adverse effects for pension funds and insurance companies. Poor performance and inability to meet future commitments by pension funds and life insurers could have significant financial stability implications, given their significance, large size and importance for financial market behaviour.

The need for fiscal consolidation is becoming more pronounced as fiscal relief has led to higher levels of fiscal deficits. Although the expansionary thrust of fiscal policy in advanced economies, most notably in the US, supported economic growth, it could cause problems since fiscal policy will have to be tightened at some stage to repay fiscal deficits.

Despite numerous negative effects of lengthy periods of easy monetary policy, increasing interest rates too soon in the US and Europe could also have adverse consequences since peripheral countries such as Portugal, Ireland, Greece and Spain are still at risk. The European Central Bank did, however, recently increase interest rates by 25 basis points due to mounting inflationary pressures.

Banking-sector vulnerabilities remained a concern in advanced economies. In some cases countries addressed these vulnerabilities by increasing their Tier 1 capital ratios (see Figure 2). Euro area banking systems, however, remain vulnerable to deterioration in the credit quality of their sovereign debt holdings. EU banks' exposures to indebted sovereigns reached €191 billion at the end of 2010, with notable concentration in Greece (56 per cent), Portugal (24 per cent) and Ireland (19 per cent).<sup>11</sup> High exposure of banks to their own sovereigns poses significant financial stability challenges and contributes to the vulnerability of fiscal consolidation plans. In

8 IMF, *Global Financial Stability Report, Market Update*, (Washington DC: IMF, January 2011).

9 The European Banking Authority is co-ordinating EU-wide stress tests to be carried out between March and June 2011. The tests will be applied to a wide sample of European banks covering over 60 per cent of total EU banking assets.

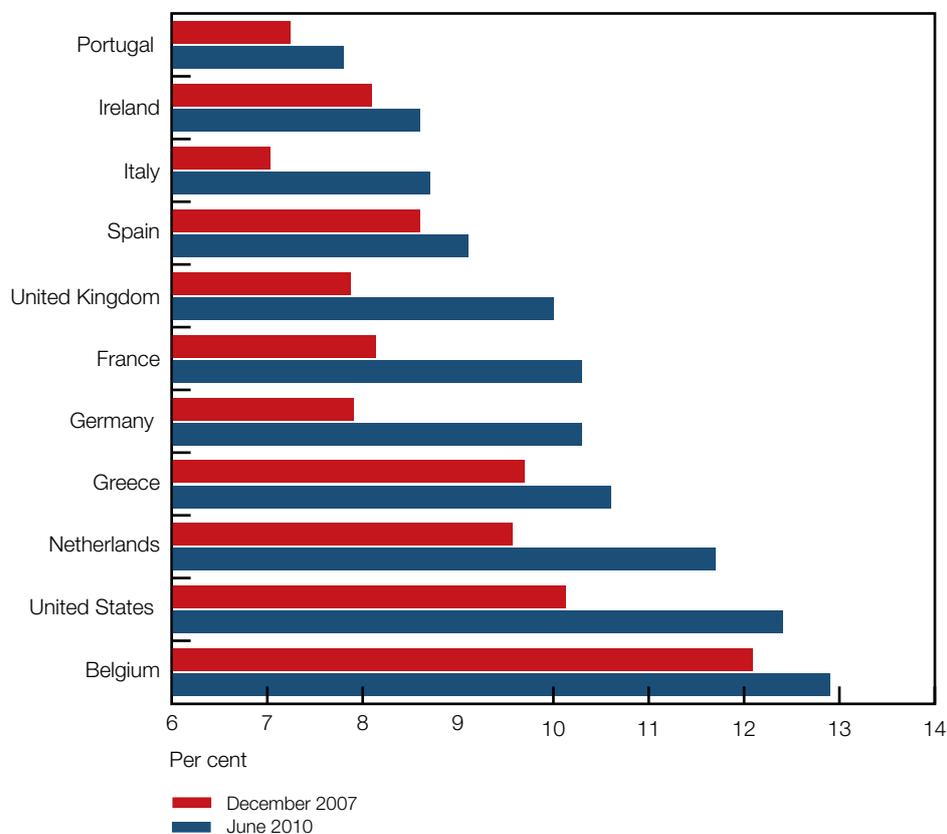
10 Euro area leaders agreed to increase the effective lending capacity of the EFSF to its full €440 billion, allow it to buy bonds in the primary market, lower the interest on loans to Greece by 100 basis points and extend the maturities of the credit from 3 to 7.5 years.

11 Committee of European Banking Supervisors.



the US banking sector non-performing commercial and residential real-estate loans continue to pose downside risks to banks' balance sheets.

Figure 2 Tier 1 capital ratios for selected advanced economies



Sources: ECB Consolidated Banking data and Federal Deposit Insurance Corporation

12 VIX is a symbol for the Chicago Board of Options Exchange Volatility Index and measures implied volatility of the Standard & Poor's 500 Index for equities over the next 30-day period.

13 The MSCI Emerging Markets Index is a free float-adjusted market capitalisation-weighted index that is designed to measure the equity market performance of key EMEs.

14 The MSCI World Index is a free float-adjusted market capitalisation-weighted index that is designed to measure the performance of equities in key developed economies.

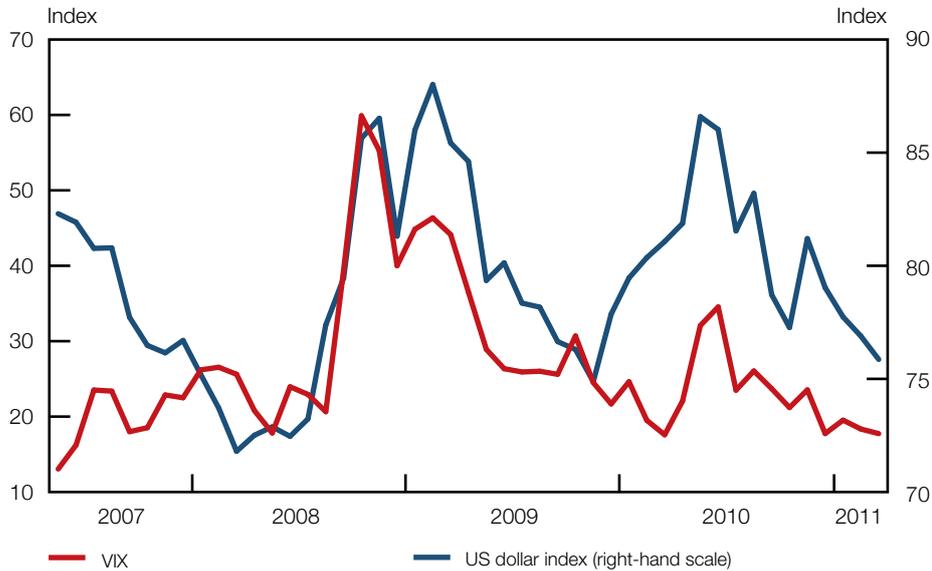
Financial-market volatility subsided in the second half of 2010 amid broadly improved global financial conditions, as shown by the Chicago Board of Options Exchange Volatility Index (VIX).<sup>12</sup> Equity markets rose in advanced economies and in EMEs during this period, reflecting generally improved risk sentiment after the United States Federal Reserve System (US Fed) had indicated a willingness to ease monetary policy further by the announcement of QE2. The Morgan Stanley Capital International (MSCI) Emerging Markets Index<sup>13</sup> and MSCI World Index<sup>14</sup> increased by around 16 per cent and 10 per cent respectively during 2010. Since the start of 2011, developed market equities have, however, outperformed emerging-market equities, despite relatively lower economic growth rates in advanced economies. By the end of February 2011, the MSCI World Index had increased by more than 4 per cent, while the MSCI Emerging Markets Index had declined by almost 4 per cent. This trend reflects a relatively more optimistic outlook on growth in advanced economies, but is limited by concerns over the impact of higher oil prices on global growth prospects. Uncertainties regarding policy responses to inflation in EMEs have also limited emerging-market equity gains as investors feared that interest rate increases in EMEs could slow down economic growth. However, analysts still believe that equities in EMEs will outperform equities in advanced economies in 2011, similar to 2010.

Currency markets experienced high levels of volatility in the latter part of 2010, and the appreciation of the US dollar in the first half of 2010 was reversed after the US had introduced the QE2 programme. However, euro area debt contagion concerns re-emerged in November and Irish government bond yields spiked to record-high levels. Despite the EU/IMF bailout package for Ireland that followed, risk aversion increased and the US dollar strengthened due to

safe-haven flows. Euro area sovereign debt fears escalated and only eased in early 2011, causing the US dollar, once again, to depreciate somewhat. Recently, the US dollar was weighed down by speculation of interest rate increases in the euro area,<sup>15</sup> while the US Fed indicated that interest rates would be on hold for the near future.

15 The ECB increased interest rates by 25 basis points on 7 April 2011.

Figure 3 VIX and US dollar index<sup>1</sup>



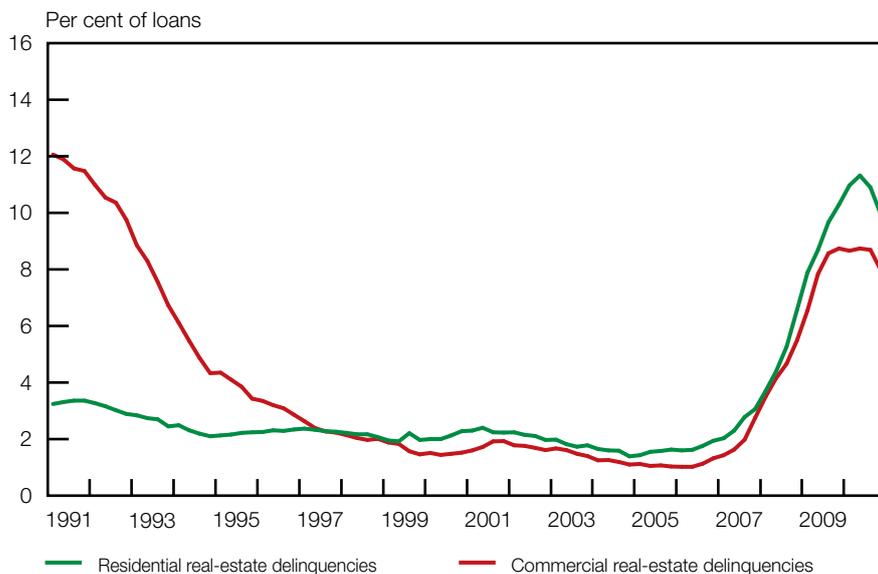
1 The US dollar index indicates the general international value of the US dollar by averaging the exchange rates between the US dollar and six major world currencies, namely the euro, Japanese yen, British pound, Canadian dollar, Swedish krona and Swiss franc

Source: Bloomberg

### Real-estate markets

Real-estate markets continue to pose risks to the stability of financial systems. The ratio of delinquent loans to total loans for residential and commercial real estate of commercial banks in the US declined steadily from the late 1990s up to 2007 when the global financial crisis started.

Figure 4 US commercial banks' delinquencies for real-estate loans

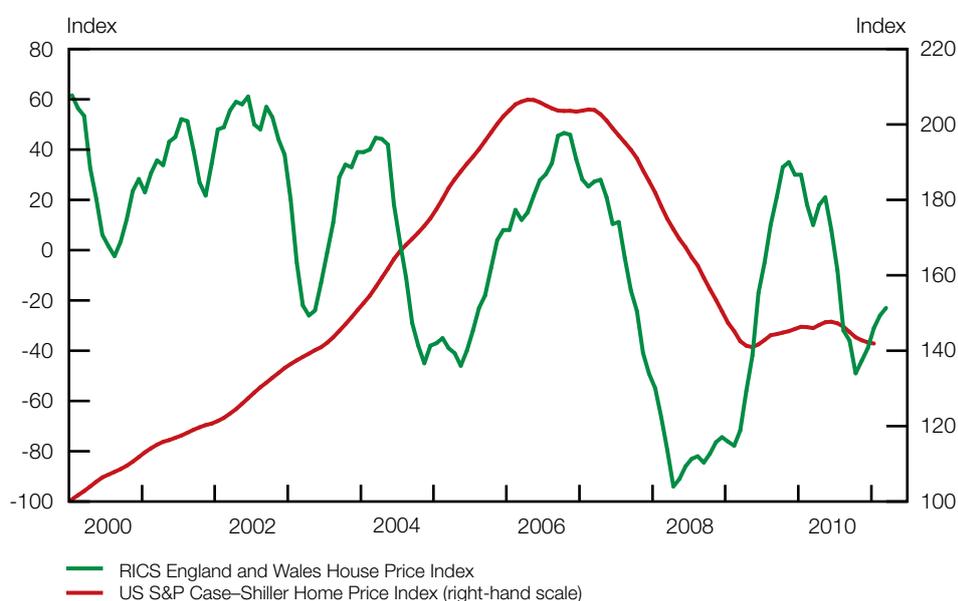


Source: United States Federal Reserve System

Since then, residential and commercial real-estate delinquencies have increased sharply, reaching all-time-high levels during 2010, as lenders delayed home seizures to investigate charges of improper documentation. The combined share of foreclosures and loans with overdue payments was about 14 per cent. Although the delinquency rate for all real-estate loans fell to 8,2 per cent in the fourth quarter of 2010, from 9,1 per cent in the third quarter, these levels pose a significant downside risk to banks' balance sheets.

The negative sentiment in the US real-estate market was further confirmed by the Case–Shiller Home Price Index that remains at subdued levels. However, recent declines were spread among fewer of the index components. In December 2010 13 out of 20 sub-components showed price declines, compared with 17 in November and 19 in October. Similarly, in the United Kingdom (UK), house prices fell in March 2011, although the pace of decline eased for the fifth consecutive month. The Royal Institute of Chartered Surveyors (RICS) House Price Index rose to -23 from -26 in February. This implies that the number of real-estate agents and surveyors stating that prices had fallen exceeded those seeing gains by 23 percentage points. Economists believe that the fall in completed house sales and the drop in enquiries from buyers could mean that there is more gloomy news ahead in the real-estate sector of the UK.

Figure 5 House price indices in the US and UK



Source: Bloomberg

16 The put-back issue refers to the prospect that the purchasers of assets may be able to withdraw the transaction and return assets to the banks.

17 RealtyTrac, 2010 Year-end Metropolitan Foreclosure Market Report, (Irvine CA: RealtyTrac Inc., January 2011).

18 G Marcus, "A South African Perspective on Global Imbalances", *Financial Stability Review: Global Imbalances and Financial Stability*, 15 (Paris: Banque de France, February 2011).

US home foreclosures hit a record high in 2010, and could also become a litigious issue between US banks and defaulting homeowners, representing a major risk for US banks and households. Out of a range of issues relating to the securitisation of mortgage loans, the so-called put-back<sup>16</sup> issue is the biggest risk. Buyers of securitisations are returning these assets to the originators on the grounds of flawed legal documentation and processes, and the estimated system-wide losses could be in excess of US\$100 billion. Approximately 2,8 million metropolitan properties had foreclosure actions taken against them in 2010; about 1 in every 45 US households in all – an increase of 2 per cent over 2009.<sup>17</sup> During 2010, the number of properties repossessed by banks increased by about 14 per cent, to over one million. Millions of families are facing joblessness, falling wages and plunging home values.

### Global imbalances

Global imbalances have been part of the world economy for many years and remain a concern. Imbalances mainly focused on the US current-account and fiscal deficits before the recent global financial and economic crisis broadened the concept significantly. Risks associated with global imbalances could be classified according to their structural and cyclical dimensions.<sup>18</sup>



First, imbalances are rooted in the structure of the world economy where income gaps are manifesting in trade, fiscal and investment imbalances. The current-account position of emerging and developing economies as a group moved into a surplus in the twenty-first century as they became net exporters of goods and services. Advanced economies, however, have become net importers of goods and services, developing a current-account deficit as a result. Although the global financial and economic crisis has reduced the magnitude of current-account imbalances, they remain indicative of internal demand imbalances.<sup>19</sup> Furthermore, EMEs have built up large foreign reserve balances, in many cases as a result of attempts to keep their exchange rates from appreciating. These reserves have been invested in reserve currencies of advanced economies, with the US being the main recipient of foreign investment flows.

Secondly, imbalances are caused by cyclical elements resulting from the collective behaviour of decision-makers reacting to changes in economic conditions in different stages of the business cycle. In the process changes in the business cycle are exaggerated, turning it into a source of systemic risk as market participants adapt their risk appetite, pricing policies and required rates of return in reaction to changes in the cycle. Interventions by authorities to stabilise the system introduce cyclical imbalances that run the risk of becoming structural in nature. In this way, historically low interest rates and high levels of liquidity in advanced economies cause investors to borrow in these countries and invest in high-yielding riskier markets in EMEs. Furthermore, EMEs recovered much quicker from the effects of the global financial and economic crisis, making them attractive destinations for international investment flows.

Global imbalances may lead to two important risks for the financial system.<sup>20</sup> First, they could lead to slow growth, increasing accumulation of debt and fiscal pressures. In the process they create risks of sovereign defaults which might also affect banking systems worldwide. Second, imbalances could create the risk of excessive capital flows to emerging markets, increasing the risk of asset-price bubbles followed by collapses in prices. These risks arise when capital flows are not matched by the ability of economies to absorb the flows productively.

Global imbalances have been a concern for a long time and the pattern seems to remain in place. Unease about the sustainability of global imbalances, as well as the cost and consequences of disorderly adjustments, has been a topic of intense debate for some time. With risks to the financial system and the introduction of protectionist measures increasing, global imbalances pose a real threat to global financial stability and affected countries are considering appropriate policy responses.

## Financial and economic developments in emerging-market and developing economies

### Emerging-market economies

Despite a relatively lower economic growth rate in the latter part of 2010 compared to the first half, EMEs remained an important driver of global economic growth, and emerging and developing economies recorded a 7,3 per cent economic growth rate for 2010 as a whole. Countries in developing Asia grew most rapidly of all EMEs, reaching an average economic growth rate of 9,5 per cent during 2010.<sup>21</sup> Economic growth in EMEs for 2011 and 2012 is forecast to be slightly lower, with certain lingering downside risks. Key risks include a rapid rise of inflation pressures and overheating pressures, partly driven by capital inflows. Rising inflation levels have become a major concern in some EMEs, with inflation reaching 5,4 per cent in China and 8,9 per cent in India in March 2011. Higher inflation rates, in combination with robust economic growth, have prompted authorities to tighten monetary policy over the past few months.<sup>22</sup> In early April 2011 the People's Bank of China, for instance, raised policy rates by 25 basis points for the fourth time in six months, in addition to increasing reserve requirements by 200 basis points over the same period.

Capital flows to EMEs continued in the second half of 2010, with net capital inflows estimated at US\$908 billion, 50 per cent higher than in 2009.<sup>23</sup> Capital flows were prompted by the search for higher-yielding assets due to relatively higher growth prospects and favourable policy interest rate differentials. Capital inflows were further boosted by investment fund asset reallocation to correct severe under-weighting of some EME assets. Increases in policy interest rates in some

19 Surplus countries suffer from insufficient and deficit countries from excessive domestic demand.

20 World Economic Forum, *Global Risks 2011*, 6th ed. (Davos: World Economic Forum, January 2011), <http://www.weforum.org>.

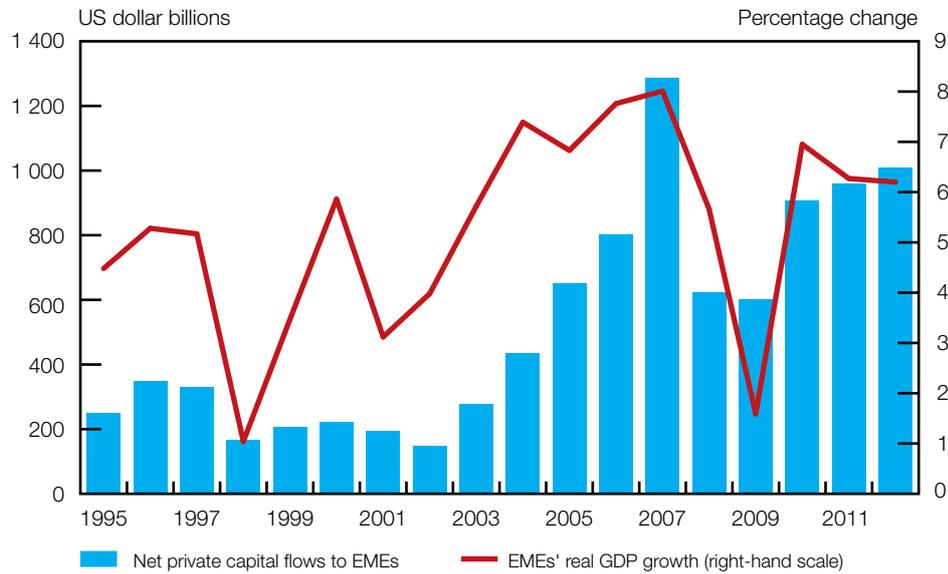
21 IMF, *World Economic Outlook*, (Washington DC: IMF, April 2011).

22 China, India, Thailand, Indonesia, Brazil, Russia, among others, have tightened monetary policy.

23 IIF, "Capital Flows to Emerging Market Economies", (IIF Research Note, Washington DC: IIF, January 2011).

EME countries, prompted by inflationary pressures, also made these countries more attractive for carry trades. Excessively high levels of capital inflows could be destabilising and result in exchange rate appreciation, asset-price bubbles, overheating of economies and, consequently, financial system instability.

**Figure 6** EMEs' net private capital flows and real GDP growth<sup>1</sup>

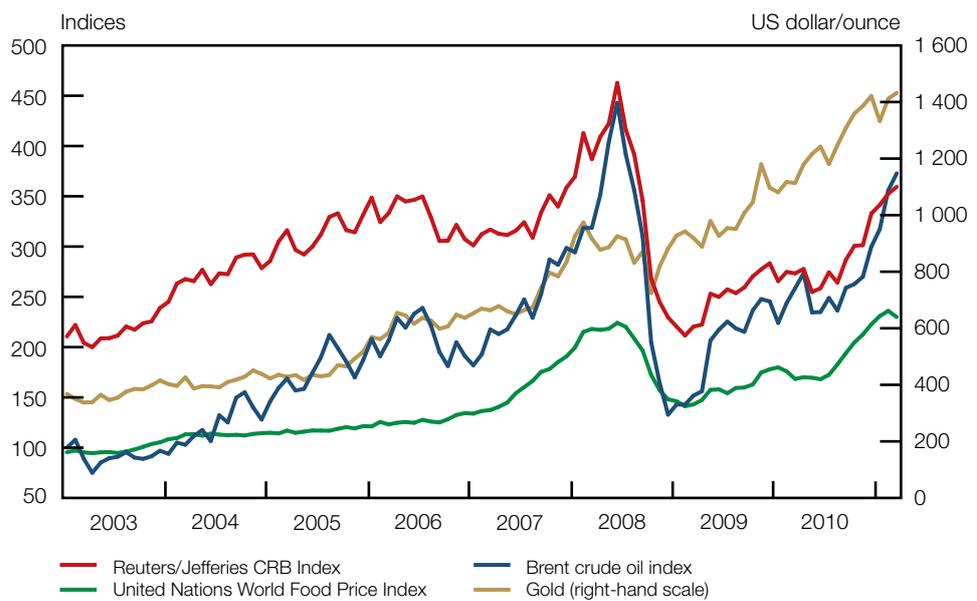


<sup>1</sup> Data for 2010, 2011 and 2012 are IIF estimates

Source: The Institute of International Finance

Net capital flows are generally correlated with changes in global financing conditions, rising during periods of low risk aversion. Following higher levels of risk aversion, capital inflows to EMEs had slowed and, in some instances, reversed since the fourth quarter of 2010.

**Figure 7** Reuters/Jefferies CRB Index and selected commodity prices



Source: Bloomberg

As major producers and consumers of commodities, EMEs are sensitive to commodity price fluctuations. Commodity prices rebounded sharply in the latter part of 2010, and the increasing trend steepened in the first quarter of 2011. This is reflected in the Reuters/Jefferies Commodity Research Bureau (CRB) Index<sup>24</sup> which increased by almost 30 per cent in the second half of 2010. According to the Institute of International Finance (IIF) this trend was caused by an improvement in market sentiment and in the global economic outlook, since the majority of increases occurred after the US Federal Reserve indicated that it would increase policy support.<sup>25</sup>

An important driver of oil prices was demand from EMEs, most notably from China. While improved risk appetite boosted oil prices in 2010, the sharp increase since February 2011 has been driven by supply uncertainties due to political turmoil in the MENA countries (see Box 3 on page 14). The recent increase in oil prices<sup>26</sup> is not only fuelling inflation, but there are also concerns that it could have a dampening effect on the pace of the global economic recovery. It was noted by the IMF that the increase in oil prices over the past decade shows that global oil markets have entered a period of increased scarcity.<sup>27</sup>

The gold price increased by more than 20 per cent in the six months ended December 2010. This increasing trend was mainly due to safe-haven flows and demand as a hedge against inflation following quantitative easing in the US. Global food prices continued to rise in the latter part of 2010 and the Food and Agriculture Organization (FAO) Food Price Index<sup>28</sup> reached its highest level in February 2011 since its inception. Higher food prices add to inflationary pressures in EMEs and could result in macro-vulnerabilities, especially for food-importing countries which have limited fiscal space. Lower-income groups generally spend a larger portion of their income on food and would therefore be more severely affected by higher food prices. High food prices could also lead to domestic unrest and damage a country's status as an investment destination, with negative consequences for financial stability.

24 The Reuters/Jefferies CRB Index serves as a measure of 19 global commodity futures prices.

25 IIF, *Global Economic Monitor*, (Washington DC: IIF, December 2010).

26 The price of Brent crude oil increased by more than 25 per cent in the year to 12 April 2011.

27 IMF, *World Economic Outlook*, April 2011.

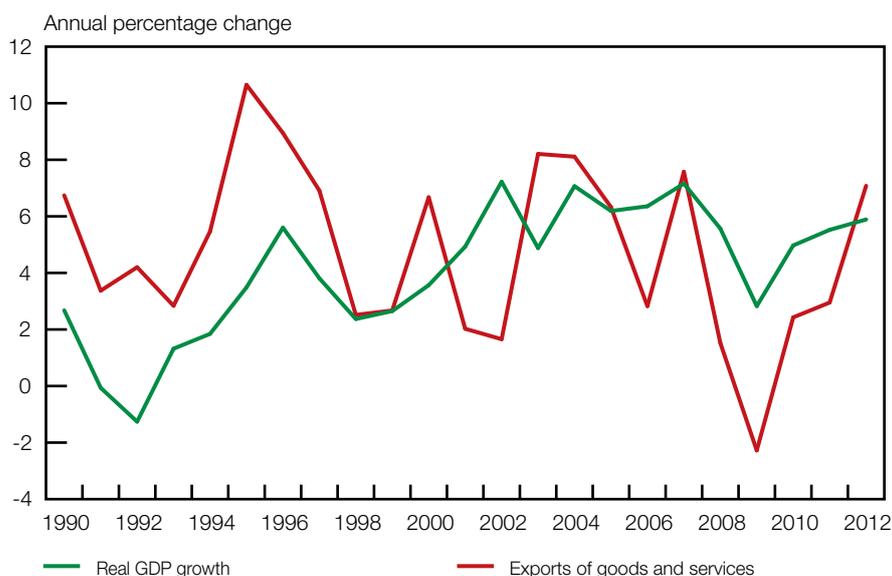
28 The FAO Food Price Index is a measure of the monthly change in international prices of a basket of food commodities. It consists of the average of five commodity group price indices (representing 55 quotations), weighted with the average export shares of each of the groups for 2002–2004.

29 IMF, *World Economic Outlook Update*, January 2011.

## Africa, sub-Saharan Africa and the Southern African Development Community region

Economic growth in many African economies remains diverse and has, in some cases, returned to pre-crisis levels. Average real GDP growth for sub-Saharan Africa in 2010 is estimated at 5 per cent.<sup>29</sup> The major contributors to GDP growth were rising commodity prices, higher export volumes and investment flows, as well as increasing domestic demand due to wealth effects amid a surge in capital inflows. Sub-Saharan African economic growth is forecast at

Figure 8 Real GDP growth and exports in sub-Saharan Africa<sup>1</sup>



1 Data for 2010, 2011 and 2012 are IMF estimates

Source: International Monetary Fund

5,6 per cent in 2011 and 5,7 per cent in 2012. Growth for most Southern African Development Community (SADC) economies is, however, expected to remain below the sub-Saharan Africa average at 3,9 per cent and 4,5 per cent in 2010 and 2011 respectively.

Growth prospects in sub-Saharan Africa continue to depend on the recovery of the global economy. Recent political instability in the MENA region (see Box 3) may hinder the flow of funds into the region, thereby exerting downward pressure on domestic demand. The resulting rise in oil prices, coupled with rising food prices, poses significant challenges not only to the economic outlook, but also to the inflation outlook of most food-and oil-importing countries. In the latter case, this could necessitate monetary tightening. Furthermore, population growth and urbanisation could put pressure on labour markets, and also impact economic and financial stability negatively.

30 Business Monitor International Risk Rating. The score is a per cent of 100, with 100 being the best and zero being the worst.

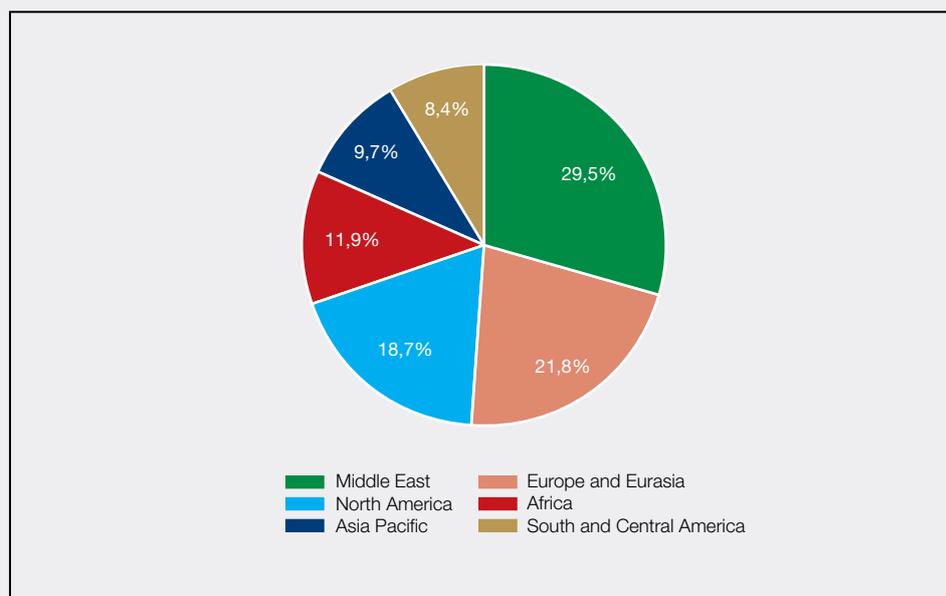
### Box 3 Political turmoil in the MENA region

Since the beginning of 2011, countries in the Middle East and North Africa (MENA) region have experienced significant political instability. The region's overall short-term political risk rating fell to 61,7 in March from an average of 66,1 in 2010.<sup>30</sup>

The turmoil erupted in Tunisia, spread to Egypt and subsequently to several other countries in the region, including Libya, Bahrain and Yemen. Endowed with about 70 per cent of the world's oil reserves and 50 per cent of gas reserves, and responsible for roughly 36 per cent of global oil production (see Figure B3), MENA oil-exporting countries play a critical role in the world energy market. Accordingly, and in line with fears of contagion to other strategically important countries such as Saudi Arabia, the political turmoil sparked fears of disruptions to oil supplies, resulting in sharp increases in oil prices. This raised fears of inflation and concerns that high oil prices could impact negatively on the pace of the global economic recovery.

The political unrest and violence also had detrimental effects on the global financial markets. Since the onset of the crisis, global equity markets have experienced volatility, although less pronounced than that experienced in the MENA region. The resultant decline in risk appetite and the re-pricing for political uncertainty have caused a fall in certain African equity markets, with Egypt's share prices falling by almost 29 per cent in the year to date. The turmoil has further resulted in deterioration in the region's sovereign rating profile and Moody's recently downgraded Egypt's sovereign rating for the second time in 2011.

Figure B3 Global oil production, 2010



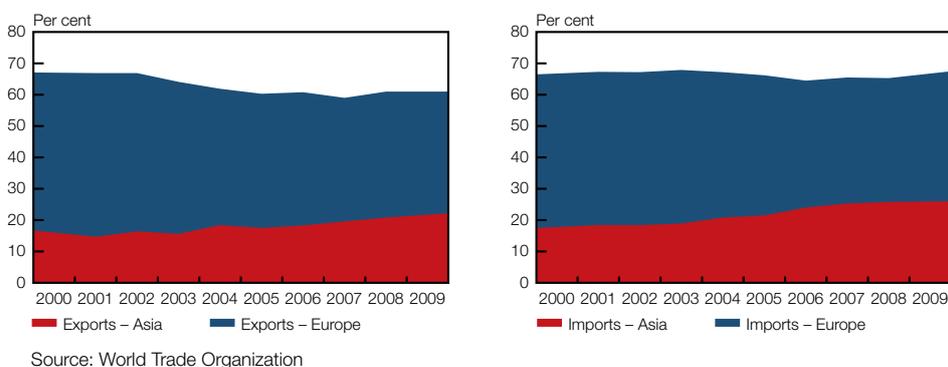
Source: Business Monitor International estimates

Notwithstanding the relative importance of Europe as a major export destination for Africa's exports, there appears to be a gradual shift towards Asian markets (see Figure 9). The share

of African exports to Asia has risen from about 16 per cent in 2000 to above 22 per cent in 2009, while the share for Europe has fallen from 50,4 per cent to 38,8 per cent during the same period.<sup>31</sup> In addition to allowing for a relatively more diversified export market, the shift in trade patterns could also be an indication of less exposure to the markets that were predominantly responsible for the fall in Africa's exports during the global financial crisis. More exposure to fast-growing China and India could also prove beneficial to most African economies that are dependent on resource revenue largely generated through exports.

31 World Trade Organization.

Figure 9 Africa's trade patterns with Europe and Asia



## Domestic macroprudential analysis

In this section the stability of the South African financial system is assessed by analysing a set of macroprudential indicators for the financial sector and its household and corporate-sector counterparts, together with selected indicators for the real-estate market and the external sector. The assessment involves monitoring developments in these sectors and highlighting potential areas of concern relevant to the financial sector. Given the interconnectedness of the financial and real sectors of the economy, the financial sector is potentially exposed to contagion from a wide range of shocks arising from non-financial sectors, rendering it necessary to assess developments in these sectors and how they pertain to the stability of the financial system.

## Indicators of real economic activity

The growth rate of real GDP picked up during the fourth quarter of 2010, increasing by a quarter-on-quarter, annualised and seasonally adjusted rate of 4,4 per cent. The acceleration in the growth rate of GDP could indicate that South Africa is on a steady path of economic recovery, although it is still not sufficient to reduce the high level of unemployment. The economy continued to shed jobs in the third quarter of 2010 with 86 000 jobs lost. This was in contrast to a total of 157 000 new people employed during the fourth quarter. The unemployment rate decreased from 25,3 per cent in the third quarter of 2010 to 24 per cent in the fourth quarter. It is, however, important to note that measured over one year, the number of discouraged work seekers increased by 25,7 per cent in the fourth quarter, which translated into 440 000 people. The broad unemployment rate, which includes discouraged work seekers, rose to 35,8 per cent over the same period.<sup>32</sup>

32 Statistics South Africa, *Quarterly Labour Force Survey*, (Pretoria: Statistics South Africa, quarters 3 and 4, 2010).

When analysing a set of selected indicators of real economic activity, it can be concluded that overall activity in the real economy improved somewhat in the second half of 2010. The motor vehicle industry continued its strong performance, recording positive annual growth in total new vehicle and new passenger car sales for the whole of 2010. Both total new vehicle and new passenger car sales continued their strong performance into 2011, recording annual growth rates of 18,4 and 23,6 per cent respectively in March 2011. Growth could be partly attributed to lower lending rates, coupled with an improvement in household balance sheets and a recovery in consumer confidence.



The annual growth rates of retail and wholesale trade sales also increased throughout 2010. The increases during the first half of 2010 were attributed to increased spending during the 2010 FIFA World Cup™ tournament. Continued growth in the remainder of the year resulted in optimism that consumer spending could be sustainable which, in turn, could support the economic recovery. The level of activity in the construction sector, however, remained subdued in 2010 with the annual growth rate of the number of buildings completed remaining negative throughout the year.

**Table 2 Selected indicators of real economic activity<sup>1</sup>**

Annual percentage change in monthly indicators

Activity indicators	2009		2010		
	Dec	Mar	Jun	Sep	Dec
Building plans passed .....	-3,9	2,5	13,4	9,1	-2,5
Buildings completed .....	24,3	-26,8	-39,4	-36,1	-39,4
Retail sales .....	-1,9	2,2	6,9	6,1	7,4
Wholesale trade sales .....	-5,5	2,7	3,3	6,3	7,4
New vehicle sales .....	-6,2	22,6	21,5	17,8	29,8
New passenger car sales .....	-8,8	21,9	25,7	26,0	38,9
Electric current generated .....	7,5	8,8	5,0	-1,8	1,9
Utilisation of production capacity <sup>2</sup> .....	78,9	79,6	80,5	79,2	80,7

1 At constant prices, seasonally adjusted

2 Quarterly indicator, ratio

Sources: Statistics South Africa. New vehicle and new passenger car sales data were obtained from the National Association of Automobile Manufacturers of South Africa

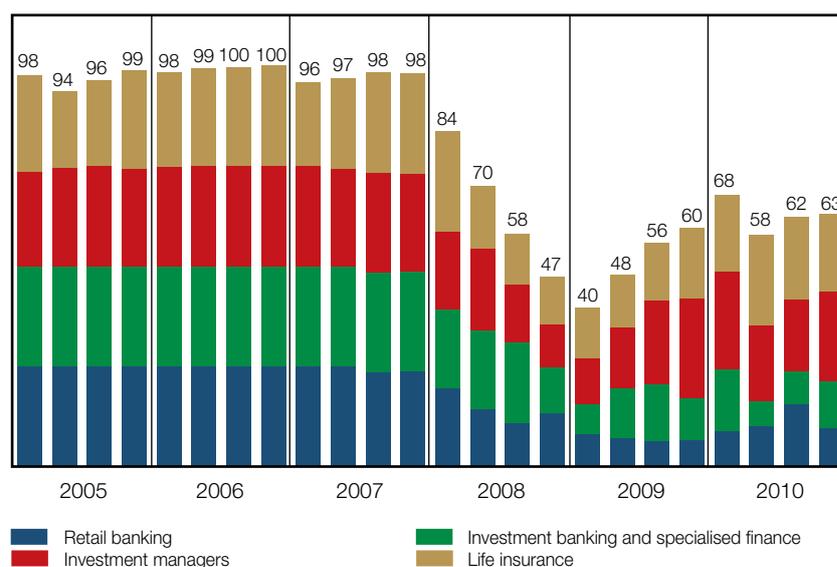
## Confidence in the financial services sector

The level of confidence in the financial services sector, as measured by the Ernst & Young Financial Services Index,<sup>33</sup> rose marginally in the fourth quarter of 2010. Increases in investment bankers and asset managers' confidence levels offset declines in retail bankers and life insurers'

33 The Ernst & Young Financial Services Index is calculated as the unweighted average of the retail banking, investment banking and specialised finance, investment management and the life insurance confidence indices. The indices that make up this index are based on the results of surveys and are measured on a scale from 0 to 100, where 0 shows "extreme lack of confidence", 50 is "neutral" and 100 shows "extreme confidence".

**Figure 10 Financial Services Index and its components**

Index



Source: Ernst & Young



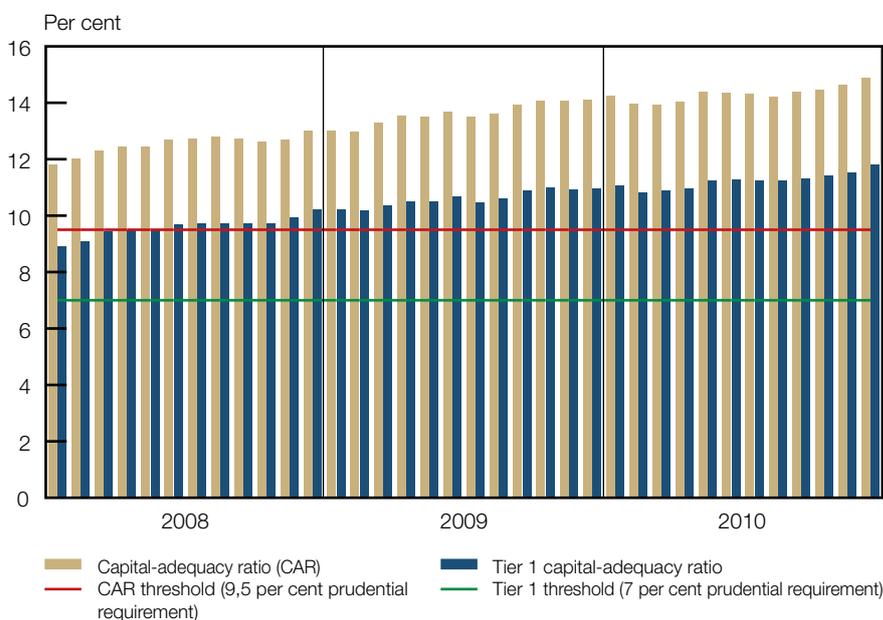
confidence levels. A recovery in business volumes, and the resultant improvement in income and profits contributed to the higher confidence levels of investment bankers and asset managers.

The retail banking confidence index, however, fell sharply in the fourth quarter of 2010. The fall was attributed to declines in interest and non-interest income, deterioration in profitability and a downbeat short-term economic outlook. Overall confidence in the financial services sector seems to be trending upwards, albeit at a slow pace.

## Banking sector

Conditions in the banking sector continued to show signs of improvement and some positive developments were recorded in the second half of 2010 and early 2011 (Table 3 provides salient banking-sector information). Banks were adequately capitalised in terms of the Tier 1 and total capital-adequacy ratios, with both remaining well above the minimum prudential requirements of 7 per cent and 9,5 per cent respectively. The annual growth rate of banking share prices remained positive, although it was at a slower rate. Gross loans and advances remained around the R2 300 billion level during the second half of the year. On an annual basis, gross loans and advances increased by 2,4 per cent in December 2010, compared to negative annual growth of 2,6 per cent recorded in December 2009. The ratio of impaired advances to gross loans and advances fluctuated between 5,8 and 6 per cent during the period under review. The return on equity and the return on assets remained fairly stable, although there were marginal declines in both ratios in December 2010, mainly due to increased operating expenses. The ratio of operating expenses to gross income remained in excess of 50 per cent and amounted to 56,4 per cent in December 2010. This high ratio has resulted in continued focus by the banking sector on the management of operating expenses. The liquid asset ratios were largely constant during the review period. Expressed as a percentage of qualifying capital and reserves, the effective net open foreign-currency position was within the regulatory requirement during the period under review.

Figure 11 Capital-adequacy ratio of banks



Source: South African Reserve Bank

According to a survey conducted by Ernst & Young and the Bureau for Economic Research at Stellenbosch University on the lending standards of banks, both retail banks<sup>34</sup> and investment banking-type activities<sup>35</sup> kept lending standards fairly relaxed in the second half of 2010 (Figure 12

34 'Retail banking' is defined for purposes of this survey as including business units of private banking, micro lending, retail banking, corporate banking and business banking for small- and medium-sized private enterprises.

35 'Investment banking' includes business units for corporate finance, private equity and direct investments, project finance, treasury, and specialised finance and stockbroking.

on page 19). In the fourth quarter of 2010, the number of banks that tightened lending standards and the number of those that loosened lending standards were the same, and the net balance was zero. That was the case for both retail banking and investment banking-type activities.

**Table 3 Selected indicators of the South African banking sector<sup>1</sup>**

Per cent, unless indicated otherwise

	2010					
	Jul	Aug	Sep	Oct	Nov	Dec
Market share (top four banks).....	83,67	83,58	83,40	84,98	84,79	84,64
Gini concentration index.....	83,23	83,24	83,15	82,70	82,58	82,57
Herfindahl–Hirschman index (H-index).....	0,184	0,184	0,183	0,190	0,189	0,188
Banks' share prices (year-on-year percentage change).....	24,27	16,28	16,49	15,26	16,06	8,18
<b>Capital adequacy</b>						
Capital-adequacy ratio .....	14,30	14,20	14,38	14,46	14,65	14,89
Regulatory Tier 1 capital to risk-weighted assets.....	11,23	11,24	11,31	11,40	11,54	11,80
<b>Credit risk</b>						
Gross loans and advances (R billions).....	2 313	2 333	2 347	2 318	2 349	2 312
Impaired advances (R billions) .....	135,03	136,66	137,94	138,01	136,55	133,93
Impaired advances to gross loans and advances .....	5,84	5,86	5,88	5,95	5,81	5,79
Specific credit impairments (R billions).....	42,87	43,28	44,64	43,76	43,66	43,62
Specific credit impairments to impaired advances .....	31,74	31,67	32,36	31,71	31,98	32,57
Specific credit impairments to gross loans and advances.....	1,85	1,86	1,90	1,89	1,86	1,89
<b>Profitability</b>						
Return on assets (smoothed).....	1,00	0,99	0,99	0,99	1,02	0,97
Return on equity (smoothed) .....	15,61	15,35	15,28	15,25	15,53	14,65
Interest margin to gross income (smoothed) .....	49,14	49,34	48,86	48,92	48,29	48,76
Operating expenses to gross income (smoothed).....	53,64	54,21	54,57	55,24	55,14	56,38
<b>Liquidity</b>						
Liquid assets to total assets (liquid-asset ratio) .....	7,44	7,17	7,10	7,40	7,61	7,47
Liquid assets to short-term liabilities .....	15,09	14,68	14,73	15,14	15,53	15,13
Effective net open foreign-currency position to qualifying capital and reserve funds.....	-0,61	-0,40	-0,42	-0,97	-0,86	-0,26

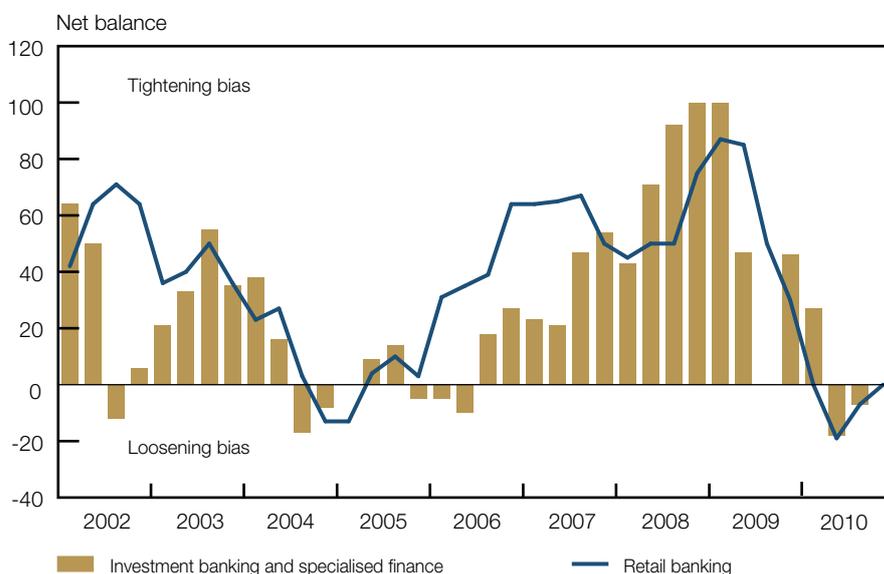
<sup>1</sup> Data for revisions were updated on 12 April 2011. Impaired advances are advances in respect of which the bank has raised specific credit impairments

Sources: South African Reserve Bank. Data on share prices were obtained from the JSE Limited

The relatively relaxed lending standards were largely in line with improving economic conditions, including the improving balance sheets of households during the fourth quarter of 2010. However, it can be argued that the easing of lending standards and lower lending rates are unlikely to have a significant impact on credit extension in the short run, given high levels of household debt. The constraints brought about by the National Credit Act (NCA), which requires credit providers

to take into account the ability of the loan applicants to repay debt, could also have played a role in restraining credit extension. Table 4 shows that the share of credit extended to private households declined from June to December 2010.

**Figure 12 Lending standards applied by banks for loan applications<sup>1</sup>**



<sup>1</sup> The net balance is the percentage of bank survey respondents whose banks tightened lending standards compared with the same quarter a year earlier minus those whose banks eased lending standards. The percentage of those whose banks did not make changes (tightening or easing) is ignored. The net balance statistic is used to interpret the survey results

Sources: Bureau for Economic Research and Ernst & Young

**Table 4 Sectoral distribution<sup>1</sup> of credit to the private sector**

Per cent

	2010		
	Jun	Sep	Dec
Agriculture, hunting, forestry and fishing .....	1,60	1,58	1,72
Mining and quarrying .....	3,00	3,15	2,93
Manufacturing .....	4,02	4,12	4,09
Electricity, gas and water supply .....	1,21	0,94	0,91
Construction.....	1,20	1,13	1,22
Wholesale and retail trade, hotels and restaurants.....	3,68	3,89	3,86
Transport, storage and communication .....	2,66	3,58	3,58
Financial intermediation and insurance .....	24,47	25,75	24,82
Real estate .....	5,26	5,05	6,41
Business services.....	5,29	3,50	3,35
Community, social and personal services.....	5,36	5,05	5,16
Private households .....	37,30	36,19	35,14
Other.....	4,94	6,07	6,79
<b>Total<sup>2</sup>.....</b>	<b>100,00</b>	<b>100,00</b>	<b>100,00</b>

<sup>1</sup> The classification of credit exposure according to the sectors or industries is based on the directives and industries specified in the Standard Industrial Classification of all Economic Activities

<sup>2</sup> Figures do not necessarily add up to 100 due to rounding

Source: South African Reserve Bank

The sectoral distribution of credit exposure has historically been fairly consistent. At the end of the fourth quarter of 2010, banks' largest concentration of credit exposure was still to the private household sector, followed by the financial intermediation and insurance sector.

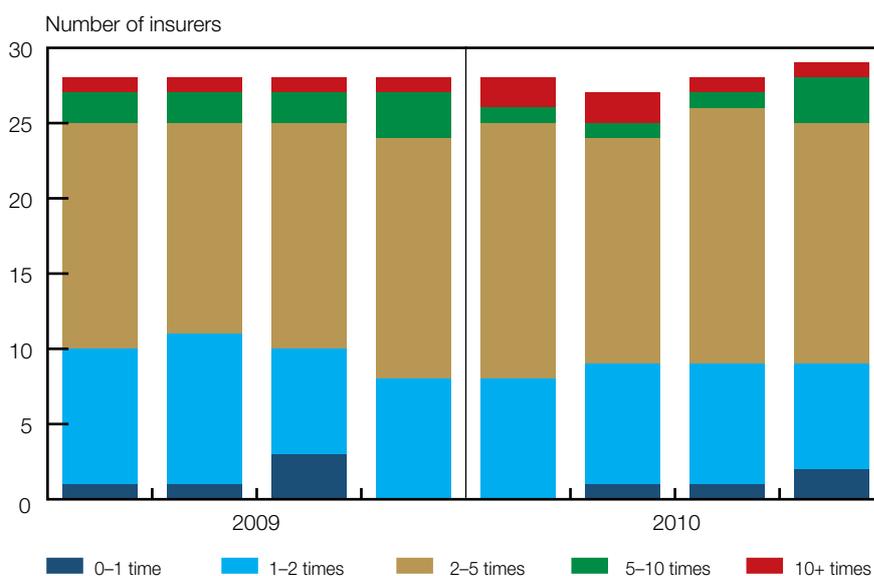
The financial soundness indicators discussed above suggest that the South African banking sector is sound. Gauging by the capital-adequacy ratio, it is plausible to conclude that the sector can withstand considerable adverse shocks. There are no compelling signs of fragility as trends for the indicators were within acceptable ranges.

## Insurance sector

The South African insurance industry faced a number of challenges in 2010. Preparations for the implementation of the Solvency Assessment and Management (SAM)<sup>36</sup> system, which the FSB plans to have in place by 2014, presented financial and administrative challenges. The SAM system requires insurers to align capital requirements with the underlying risk that they carry in order to be able to meet claims should policyholders suffer losses. It is expected that SAM will result in a stronger industry in the longer term, will put the South African insurance sector in line with international standards and will enable insurers to use internal models to calculate capital. For non-life insurers, difficulties experienced in 2010 were attributed to the patchiness of the economic recovery and high losses. However, a positive development was that financial markets have been far less volatile than they were during the height of the financial crisis.

36 SAM is adapted from the European Solvency II framework which is aimed at introducing economic risk-based solvency requirements across EU member states. The EU adopted the Solvency II directive in April 2009, with envisaged implementation in 2013.

Figure 13 Free assets-to-capital-adequacy requirement<sup>1</sup> of typical long-term insurers<sup>2</sup>



1 'Free assets' refers to the difference between total assets and the sum of total liabilities and required capital. The 'capital-adequacy requirement' is defined as the minimum capital required by the Financial Services Board for the registration of an insurance company and is equivalent to 13 weeks' worth of operating expenses

2 Typical long-term insurers are those insurers that offer most of the six classes of business as defined in the Long-term Insurance Act, 1998 (Act No. 52 of 1998) in the primary market. The figures were not audited

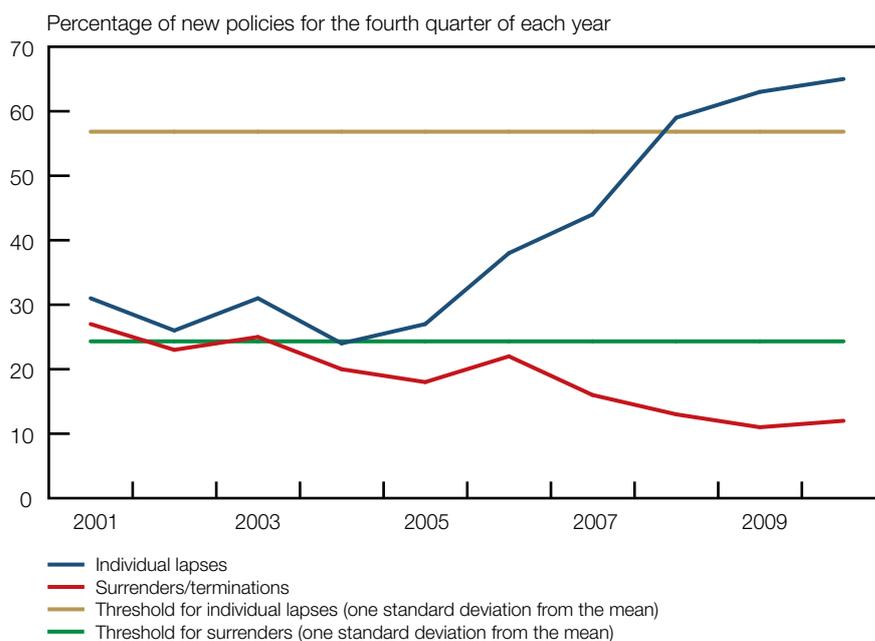
Source: Financial Services Board

The long-term insurance industry remained well capitalised during the period under review, with most insurers' capital-adequacy ratio above the minimum requirement (Figure 13). Only 2 out of 29 insurers had a free assets-to-capital-adequacy ratio value of between zero and one. This was positive for the stability of the sector in terms of the absorption of unexpected shocks. However, underwriting profitability continued to be negative and individual lapses (expressed as a percentage of the number of new policies issued during the period) increased and continued

to surpass the threshold of one standard deviation from the mean (Figure 14). This increase was largely a reflection of the low growth in the number of new policies.

For the short-term insurance sector, a positive development was an increase of about 115 per cent in underwriting profits in the year to December 2010, compared to an annual decline of 26 per cent in the year to December 2009. Other positive developments for the sector included an annual increase in underwriting and investment income, and an annual deceleration in the ratio of claims to premium income. However, management expenses and commission (as a percentage of net written premiums) were higher in December 2010 compared with December 2009.

**Figure 14 Individual lapses and surrenders for long-term typical insurers<sup>1</sup>**



<sup>1</sup> Expressed as a percentage of the number of new policies issued during the period using statistics that were not audited

Source: Financial Services Board, *Special Report on the Results of the Long-term Insurance Industry*, March, June, September and December 2010

**Table 5 Selected indicators for typical short-term insurers**

	2009		2010		
	4th qr	1st qr	2nd qr	3rd qr	4th qr
Net premiums (after reinsurance) <sup>1</sup> .....	5,2	3,4	5,0	3,8	7,2
Underwriting profit <sup>1</sup> .....	-26,0	46,7	60,8	79,5	114,6
Underwriting and investment income <sup>1</sup> .....	-6,4	-21,7	1,7	14,1	33,5
Claims <sup>2</sup> .....	67	66	63	61	61
Management expenses and commission <sup>3</sup> .....	28	30	31	30	31
Underwriting profit <sup>3</sup> .....	4	5	7	9	9
Underwriting and investment income <sup>3</sup> .....	12	10	14	14	15
Surplus asset ratio (median) <sup>4</sup> .....	43	42	39	40	38

<sup>1</sup> Year-on-year percentage change

<sup>2</sup> As a percentage of premiums earned

<sup>3</sup> As a percentage of net written premiums

<sup>4</sup> Surplus as a proportion of liabilities

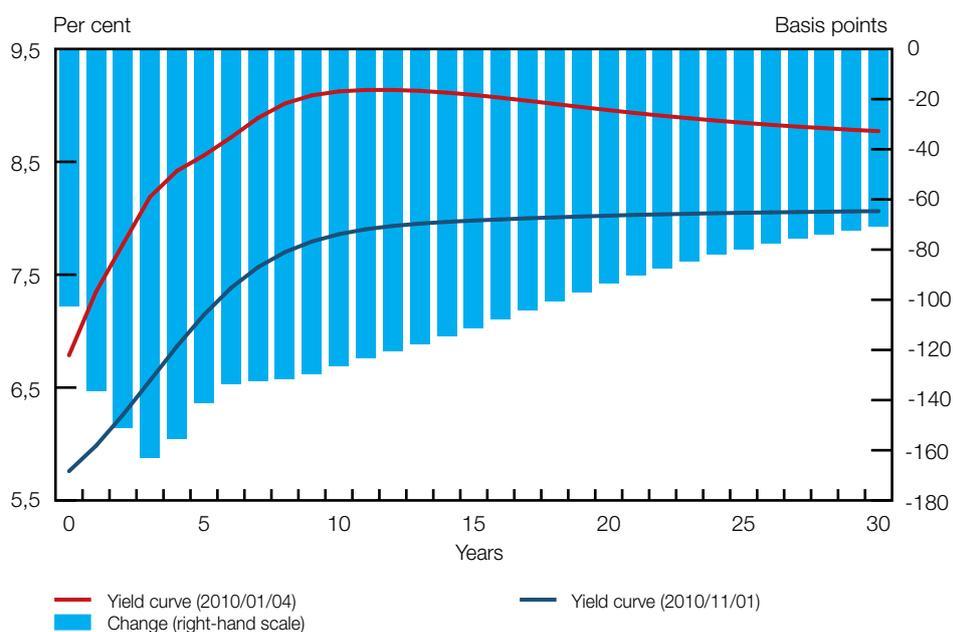
Source: Financial Services Board, *Special Report on the Results of the Short-term Insurance Industry*, March, June, September and December 2010

Overall, no imbalances could be identified in the insurance sector during the period under review. However, the increase in the ratio of lapses to new policies may be a cause for concern for the industry.

## Bond and equity markets

Domestic government bond yields had declined by, on average, between 200 basis points (R206, 2014) and 80 basis points (R209, 2036) since the beginning of 2010 until reaching a low point in early November 2010. The domestic yield curve shifted significantly, supported by the easing monetary policy cycle, the relatively favourable fiscal position of South Africa, a benign inflation environment and the appreciation in the exchange rate of the rand.

Figure 15 Yield curve



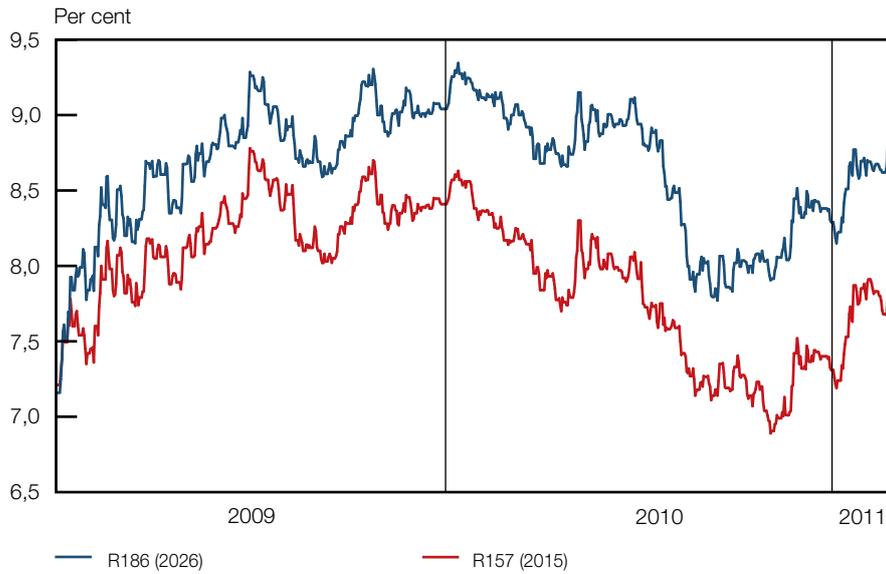
Source: Bloomberg

Over this period, EMEs' local currency bond markets, including that of South Africa, attracted significant capital inflows. Since the beginning of 2010 up until the end of September 2010, non-residents purchased a record net R74 billion worth of South African local currency bonds. This strong appetite for South African debt was supported by international investors' search for yield amid record-low interest rates in advanced economies, the appreciation of the exchange rate of the rand, and a sufficiently deep and liquid domestic bond market. The ongoing sovereign debt crisis in Europe did not deter investors from seeking higher returns in riskier markets. Such inflows, while reflecting positive sentiment towards the country, could also be destabilising in terms of the appreciation pressure placed on the exchange rate and its associated impact on economic growth, and the impact in the event of a sudden stop or reversal in these inflows.

From the fourth quarter of 2010, non-residents became net sellers of local currency bonds across most EMEs. In the three months to the end of December, non-residents sold a net R22 billion worth of South African government bonds, bringing the purchases for 2010 to a net R52 billion. In the year to 12 April 2011 non-residents sold a net R5,1 billion worth of bonds. The change in investment behaviour could be attributed to higher food and oil prices which have raised the inflation profile of many EMEs and expectations of interest rate increases. Furthermore, advanced economies appear to be recovering well, implying that the monetary stimulus applied during the height of the crisis may soon be withdrawn, eroding the yield advantage enjoyed by EMEs.



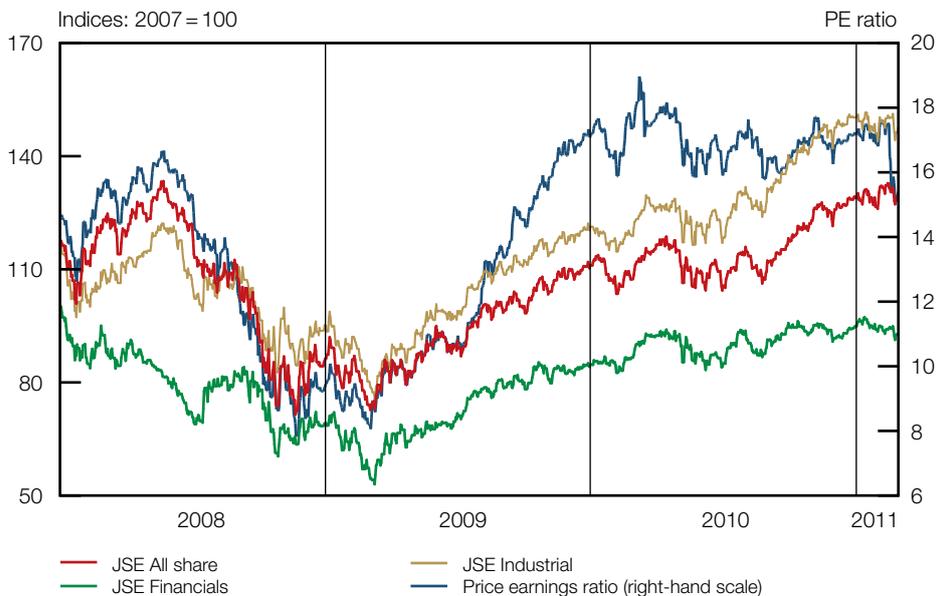
Figure 16 Selected domestic bond yields



Source: Bloomberg

Domestic-specific factors placing upward pressure on bond yields include the 2011 Budget, which forecast a higher-than-expected budget deficit, implying that issuance will remain at current levels. Thus far, non-resident sales have not had any destabilising impact on domestic financial markets. The way forward depends, in large part, on the future recovery of the global economy and the unfolding events in Europe. Recent tensions in the MENA countries, the substantial impact on oil prices and developments in Japan, together with heightened prospects for monetary policy tightening in advanced economies, will be further developments of which to take note.

Figure 17 Equity indices



Source: Bloomberg

The domestic equity market gained over 16 per cent in 2010, with gains broad based, but led predominantly by the industrial and information technology sectors. The improving growth

outlook and the rise in commodity prices during 2010 lent support. Non-resident demand for domestic equities, while positive, was not as robust as that of bonds. During 2010, non-residents purchased a net R35 billion worth of local equities, compared with net purchases of R75 billion in 2009. In the year to 12 April, however, non-residents sold a net R1,6 billion worth of local equities. This is in line with the trend in other EMEs, which have generally performed poorly when compared to advanced equity markets, in sharp contrast to 2010 when EMEs outperformed advanced markets. Nonetheless, the crisis in MENA countries has led to increased demand for safe-haven assets, while inflationary pressures and monetary policy tightening in EMEs have rendered the growth outlook less favourable.

## External sector

The two common indicators of South Africa's external vulnerability suggested that available liquidity, in the form of foreign-exchange reserves, was still adequate. During the fourth quarter of 2010 the Guidotti ratio (GR)<sup>37</sup> was 1,74 and the augmented Guidotti ratio (AGR),<sup>38</sup> which takes into account the current-account deficit, was 1,58. This simplified stress test (against a benchmark of 1), which assumes capital outflows, no access to foreign capital markets and a current-account deficit for one year, suggests that the foreign-exchange reserves were well above the country's total short-term external financing requirements.

37 The GR is the ratio of foreign-exchange reserves to short-term external debt.

38 The AGR is obtained by adding the annualised current-account deficit to short-term external debt to provide a measure of a country's total external financing requirements.

Table 6 Reserve-adequacy ratios

	US\$ millions			Guidotti ratio	Augmented Guidotti ratio
	Gross foreign-exchange reserves <sup>1</sup>	Short-term foreign debt <sup>2</sup>	Current-account deficit		
2008: 1st qr .....	34 394	29 153	-23 178,89	1,18	0,66
2nd qr .....	34 854	30 531	-20 309,40	1,14	0,69
3rd qr .....	34 424	31 816	-21 072,55	1,08	0,65
4th qr .....	34 099	29 340	-13 622,68	1,16	0,79
2009: 1st qr .....	34 108	26 949	-16 664,24	1,27	0,78
2nd qr .....	35 760	26 961	-10 745,22	1,33	0,95
3rd qr .....	39 141	26 768	-10 131,99	1,46	1,06
4th qr .....	39 706	24 852	-9 764,50	1,60	1,15
2010: 1st qr .....	42 007	23 647	-16 075,39	1,78	1,06
2nd qr .....	42 203	21 878	-10 230,76	1,93	1,31
3rd qr .....	44 069	24 031	-11 916,19	1,83	1,23
4th qr .....	43 834	25 198	-2 560,62	1,74	1,58

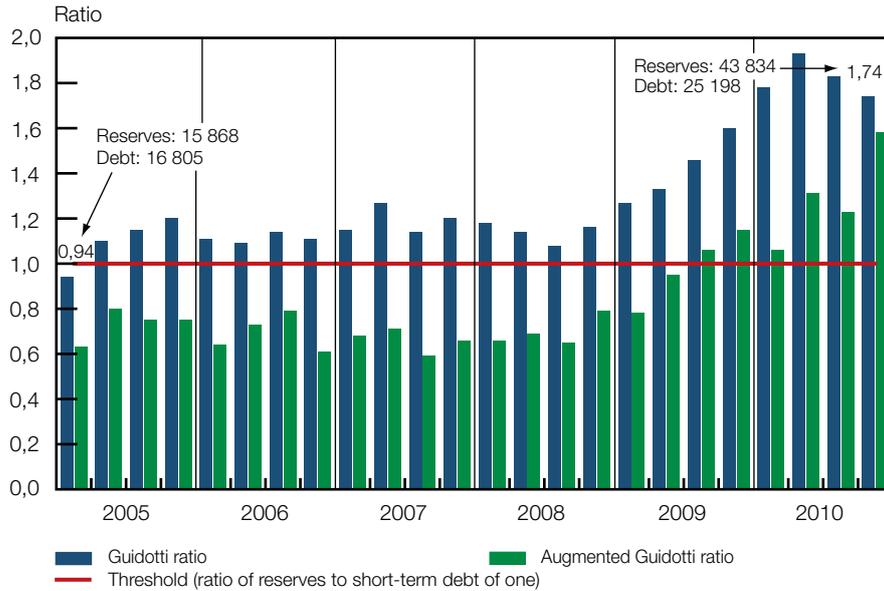
1 Official foreign-exchange reserves comprise gross gold and other foreign-exchange reserves

2 Short-term debt (maturing within a year) includes all external debt by the public authorities, public corporations, monetary authorities, banking and other sectors, and the short-term component of foreign direct investment

Source: South African Reserve Bank

The index of exchange market pressure (IEMP) is commonly used as an early warning signal of pressure build-up in the foreign-exchange market. The index showed that there was no pressure in the foreign-exchange market during the second half of 2010. The index remained well below the two-standard deviation threshold. This can be attributed to the gradual accumulation of foreign-exchange reserves and the relative strength of the local currency, especially during the last quarter of 2010. Despite the weakening of the local currency in the first two months of 2011, the index did not show undue pressure.

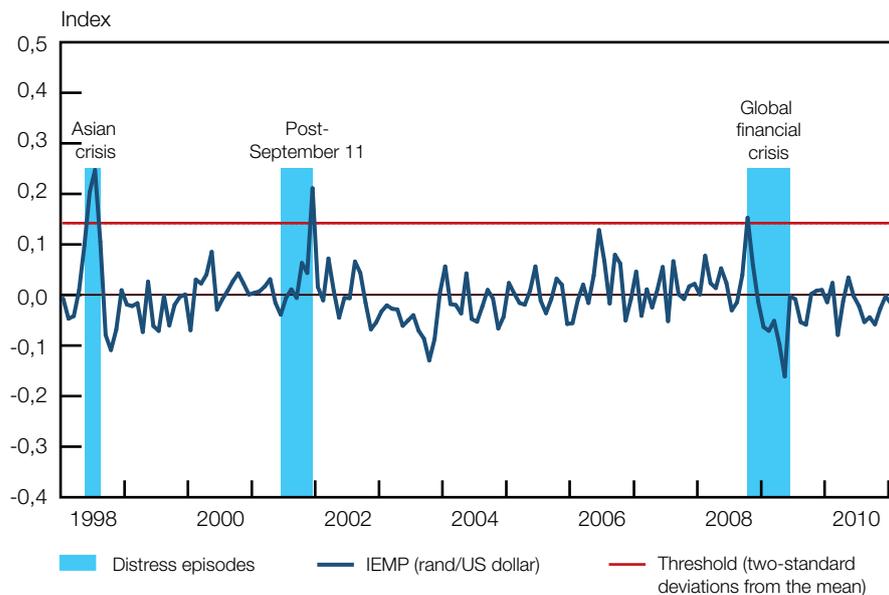
Figure 18 Reserve-adequacy ratios<sup>1</sup>



<sup>1</sup> Figures for reserves and debt in US dollar millions

Source: South African Reserve Bank

Figure 19 Index of exchange market pressure<sup>1</sup>



<sup>1</sup> The IEMP is usually defined as a weighted average of the change in the external value of the local currency, the percentage change in international reserves and the change in the domestic interest rates. A rise in the value of the index indicates increasing pressure on the local currency and vice versa

Source: South African Reserve Bank

## Corporate sector

The increase in profitability, as reflected by gross operating surplus, is a vital precondition for a sustainable recovery in investment and confidence in the business sector. The increase in net operating surplus in the second half of 2010 was, therefore, a positive development. Another positive development was the increase in the annual growth rate of credit extended to the sector. After the 2007 crisis, the demand for corporate credit has been falling. The highest decline recorded was 4,9 per cent in the first quarter of 2010. A possible return to a higher

interest rate environment, fuelled by increasing oil prices, still presents a threat to the recovery of credit extended to the corporate sector.

**Table 7 Selected indicators for the corporate sector**

Annual percentage change, unless indicated otherwise

	2009		2010		
	4th qr	1st qr	2nd qr	3rd qr	4th qr
Bank credit granted <sup>1</sup> .....	-4,6	-4,9	-2,4	1,4	1,2
Gross fixed capital formation <sup>2</sup> .....	-16,0	-9,7	-4,2	0,8	2,3
Credit as a percentage of GDP.....	46,3	45,5	45,3	46,1	45,2
Credit as a percentage of annualised profits <sup>3</sup> .....	192,6	174,5	141,9	159,2	146,1
Net operating surplus <sup>4</sup> .....	-5,8	4,4	17,7	12,3	33,5

1 Bank credit to the corporate sector in this case includes instalment sale and leasing finance, mortgage advances, overdrafts, credit card debtors, and other loans and advances

2 Gross fixed capital formation at current prices (seasonally adjusted rates) is used as a proxy for investment by private business enterprises

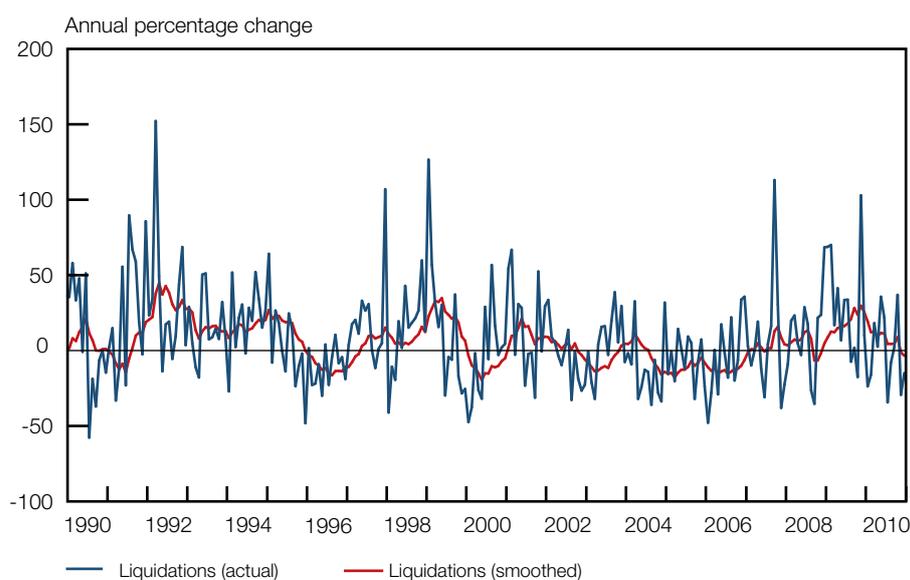
3 Bank credit to the corporate sector and net operating surpluses of corporations were used as proxies for corporate debt and for corporate profits respectively

4 Gross operating surplus minus depreciation (seasonally adjusted rates)

Source: South African Reserve Bank

Signs of recovery in the corporate sector can also be deduced from a decrease in the number of liquidations in the sector. In the year to December 2010 the number of liquidations decreased by 14,9 per cent, although liquidations in the finance, insurance, real-estate and business services industry remained elevated. These industries accounted for more than 50 per cent of total liquidations. However, even though there was a decline in the total number of liquidations, the number of compulsory (involuntary) liquidations increased from 1 in December 2009 to 34 in December 2010. Voluntary liquidations decreased from 381 to 291 over the same period, still remaining well above the total number of compulsory liquidations. This could be an indication that businesses are still struggling and most of them opt for voluntary liquidation rather than being involuntarily declared insolvent.

**Figure 20 Liquidations**



Source: Statistics South Africa

The annual decline in total liquidations that was recorded in December 2010 was reversed when liquidations increased at an annual rate of 51,9 per cent and 21,6 per cent in January



and February 2011 respectively. The reversal confirmed that statistics for liquidations are highly volatile and should, therefore, be interpreted with caution.

The business confidence level, as measured by the Rand Merchant Bank/Bureau for Economic Research Business Confidence Index, declined by 3 index points to 44 index points in the fourth quarter of 2010. The main driver behind the decline was a fall in the confidence level of new vehicle traders. New vehicle traders were relatively pessimistic, because of the rigid labour market and demands for higher wages, among other things. Increases in the confidence levels of manufacturers and retail traders lessened the impact of the declines in the other three sub-indices, to some extent. Despite the pessimism of new vehicle traders, new vehicle sales and new passenger car sales continued their strong performance, recording annual growth rates of 18,4 per cent and 23,6 per cent respectively in March 2011.

**Table 8 Business confidence index**

Indices	2010			
	1st qr	2nd qr	3rd qr	4th qr
Business confidence index <sup>1</sup> .....	43	36	47	44
New vehicle dealers confidence .....	60	49	79	51
Retail traders confidence .....	51	38	52	63
Wholesale traders confidence.....	50	47	50	47
Building contractors confidence .....	26	20	25	20
Manufacturers confidence .....	28	28	30	41

<sup>1</sup> The business confidence level is measured on a scale of 0 to 100, where 0 indicates 'an extreme lack of confidence', 50 'neutral' and 100 'extreme confidence'

Source: Rand Merchant Bank/Bureau for Economic Research

In the first quarter of 2011 the business confidence level rose to a three-year high of 55 index points as manufacturers benefited from stronger vehicle sales and an increase in exports. The new vehicle dealers' confidence index increased to a five-year high of 84 index points, while the confidence index for manufacturers rose by 10 points to 51 index points. However, there was no sign of recovery in the building industry, with the index dropping from 20 to 18 index points, the lowest level in more than a decade.

It is expected that the higher growth rate of the economy in the fourth quarter of 2010 and the improved growth outlook for 2011 could boost the confidence level of businesses as the year progresses.

## Household sector

In the fourth quarter of 2010 there were signs of recovery in the household sector. Credit extended to the sector continued to increase, although at a fairly slow pace. The number of individual civil summonses issued for debt decreased further and insolvencies continued to decline. The annual growth rate of household debt increased further to 6,1 per cent. The increase was against the backdrop of economic recovery and the prevailing low interest rate environment. Falling debt-servicing costs, resulting from the downward interest rate cycle that commenced in June 2008, have eased the burden of households in debt. Overall, growing household net wealth and falling debt-servicing costs paint a slightly more positive picture about the household sector's resilience to adverse financial shocks.

The number of individuals and partnerships declared insolvent fell by 31,7 per cent in the year to December 2010. The decline marked the thirteenth successive decline since December 2009. This could be an indication that the number of individuals and partnerships that cannot pay their debt is declining relative to 2009. Possible reasons behind the decline include relatively low lending rates which culminate in lower debt-servicing costs (Figure 21), rising disposable income

and moderating inflation which could have enhanced the ability of individuals to service debt obligations. The downward trend in insolvencies, which goes back to August 2009, appears to be firmly entrenched, suggesting that economic recovery could be on track. Insolvencies declined by 30,5 per cent in the year to January 2011.

**Table 9 Selected indicators for the household sector**

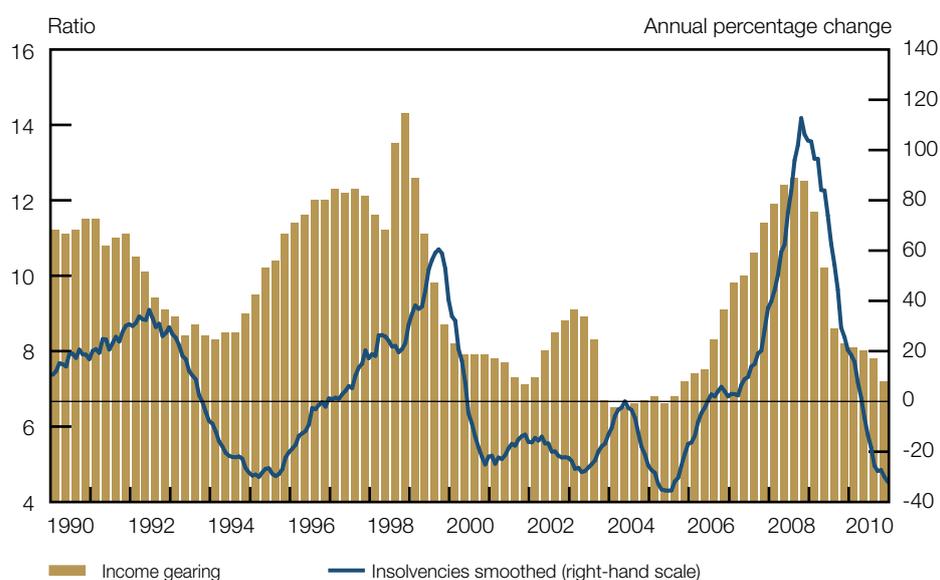
Annual percentage change, unless indicated otherwise

	2009		2010		
	4th qr	1st qr	2nd qr	3rd qr	4th qr
Nominal disposable income.....	4,9	7,7	8,5	7,9	8,9
Financial assets <sup>1</sup> .....	15,3	22,2	13,5	13,4	12,2
Net wealth <sup>2</sup> .....	15,0	22,9	15,7	13,0	10,6
Consumer confidence index <sup>3</sup> .....	6	15	14	15	14
Consumption expenditure to GDP.....	60,3	60,5	59,3	58,8	58,3
Real consumption expenditure.....	-0,4	2,3	4,7	5,5	5,2
Credit extension.....	2,9	3,6	4,3	6,3	6,9
Savings as a percentage of disposable income...	-0,1	-0,2	-0,3	-0,3	-0,3
Debt.....	2,2	3,1	3,9	5,4	6,1
Debt to disposable income.....	79,6	78,3	78,4	78,7	77,6
Debt to GDP.....	47,9	47,2	46,3	46,1	45,1
Income gearing (per cent) <sup>4</sup> .....	8,2	8,1	8,0	7,8	7,2
Capital gearing (per cent) <sup>5</sup> .....	18,1	17,7	18,3	17,8	17,5
Insolvencies.....	1,9	-30,5	-39,8	-31,3	-31,7
Summonses.....	2,4	-6,1	-11,2	1,5	-12,0

- 1 Financial assets include households' deposits with financial institutions, their share in pension funds and a proxy for their holdings of shares. Data on financial assets are preliminary and based on work in progress at the Bank
- 2 Household net wealth comprises household total assets, that is, total fixed assets plus financial assets less liabilities. Data on net wealth are preliminary and based on work in progress at the Bank
- 3 The consumer confidence index is expressed as a net balance between optimistic and pessimistic consumers. According to the Bureau for Economic Research, the index can vary between -100 for 'extreme pessimism' and +100 for 'extreme optimism', with 0 being 'neutral'
- 4 'Income gearing' refers to financing costs of household debt as a percentage of disposable income. Data are preliminary
- 5 'Capital gearing' refers to household debt as a percentage of total assets of households. Data are preliminary

Sources: South African Reserve Bank, Statistics South Africa and Bureau for Economic Research

**Figure 21 Income gearing and insolvencies**



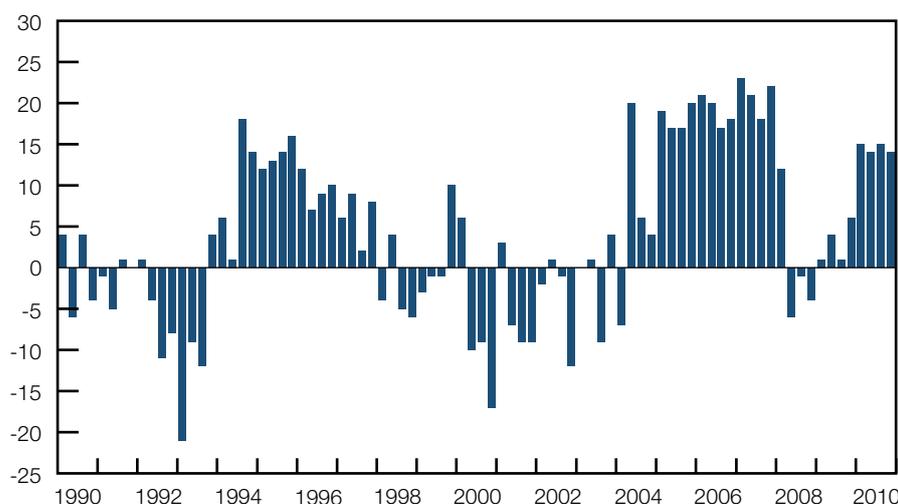
Sources: South African Reserve Bank and Statistics South Africa

The level of consumer confidence, as measured by the First National Bank/Bureau for Economic Research (FNB/BER) Consumer Confidence Index,<sup>39</sup> remained virtually unchanged in the fourth quarter of 2010, dropping by 1 index point to 14 index points. It was, however, still considered high relative to the long-term average.

The results of the survey revealed that consumers viewed the fourth quarter of 2010 as a more appropriate time for the purchasing of durable goods. This sentiment was mostly applicable to high-income earners (earning above R10 000 per month) who had not been severely affected by retrenchments. Relatively low lending rates, coupled with minimal increases in the prices of durable goods, could have persuaded more consumers to have that view. Consumers were, however, less optimistic about the prospects for the economy, possibly as a result of job losses due to difficult financial conditions experienced by most companies.

39 The FNB/BER Consumer Confidence Index combines the results of three questions posed to 2 500 urban adults. The questions relate to the anticipated performance of the economy in 12 months' time, expected household financial position in 12 months' time and the rating of the suitability of the present time to buy durable goods.

Figure 22 Consumer confidence index



Sources: First National Bank and Bureau for Economic Research

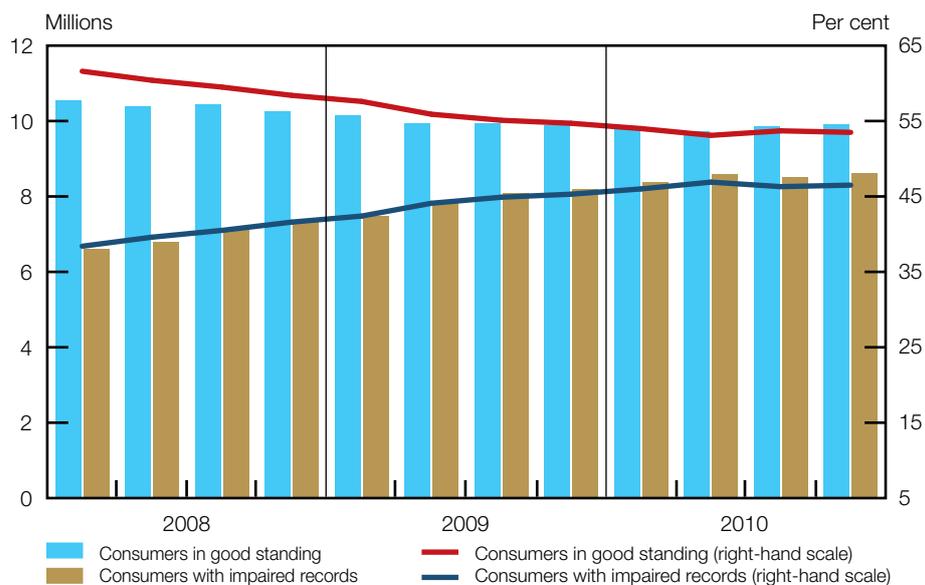
The situation changed in the first quarter of 2011 as consumer confidence declined to 9 index points. The decline was in line with the decline in the MasterCard Worldwide Index of Consumer Confidence for South Africa, which declined to 54,7 index points, the lowest level in the market since its incorporation into the survey in 2003. The declining level of consumer confidence could be attributed to the uncertainties caused by rising fuel and electricity prices, coupled with the possibility of increased transport costs resulting from the envisaged toll fees in the Gauteng Province and the fear of introducing toll fees in other major cities. Consumers appear to be wary in their outlook, even though the worst of the recession is probably behind them.

The third quarter's improvement in credit conditions of consumers proved not to be sustainable. The profile of credit active consumers worsened slightly in the last quarter of 2010 with the percentage of consumers with impaired records increasing slightly from 46,3 to 46,5 per cent in the three months to December, while those in good standing declined slightly from 53,7 to 53,5 per cent over the same period. The situation may worsen further should lending rates begin to increase, given the still-high levels of household debt to disposable income.

The University of South Africa (Unisa) Bureau of Market Research and FinMark Trust gauge the financial vulnerability of consumers by the consumer financial vulnerability index (CFVI)<sup>40</sup> which is computed from the results of a survey. The CFVI reflects the overall consumer financial vulnerability after taking into consideration the different dynamics influencing a consumer's profile for income, savings, expenditure and debt.

40 Vulnerability strata and score: 0,0–1,99 implies "financially very secure"; 2,0–3,99 implies "financially secure"; 4,0–5,99 implies "somewhat financially vulnerable"; 6,0–7,99 implies "financially vulnerable"; 8,0–10,0 implies "financially very vulnerable".

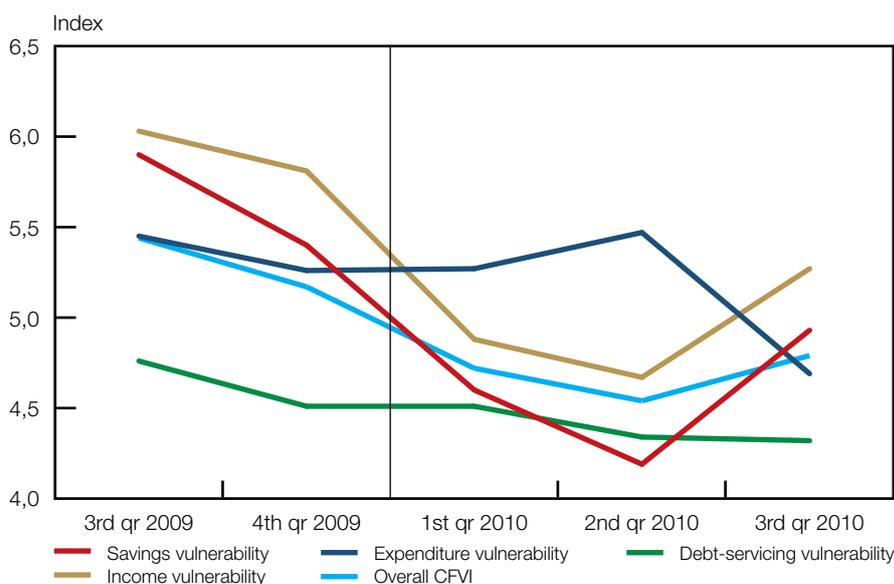
Figure 23 Credit standing of consumers



Source: National Credit Regulator

The CFVI indicates that consumers remained financially vulnerable in the third quarter of 2010 relative to the second quarter. This was the case despite the fact that most macroeconomic indicators showed continual improvement in the macroeconomy (with the exception of employment levels and job losses). The overall CFVI increased from 4,54 in the second quarter of 2010 to 4,79 in the third quarter. The reasons behind the deterioration of the index included continuing jobs losses, a high unemployment rate, still-high levels of defaults on debt payments by debtors and labour market rigidities. The low-income group (R0–R30 000 per annum) was the most vulnerable, mainly as a result of the high rate of unemployment for this group. The situation was reversed in the fourth quarter of 2010 when the CFVI improved to 4,23. The main driving force behind the improvement in the overall CFVI was the debt-servicing vulnerability sub-index which dropped to 3,53 mainly due to low debt-servicing costs.

Figure 24 Consumer financial vulnerability index (CFVI)



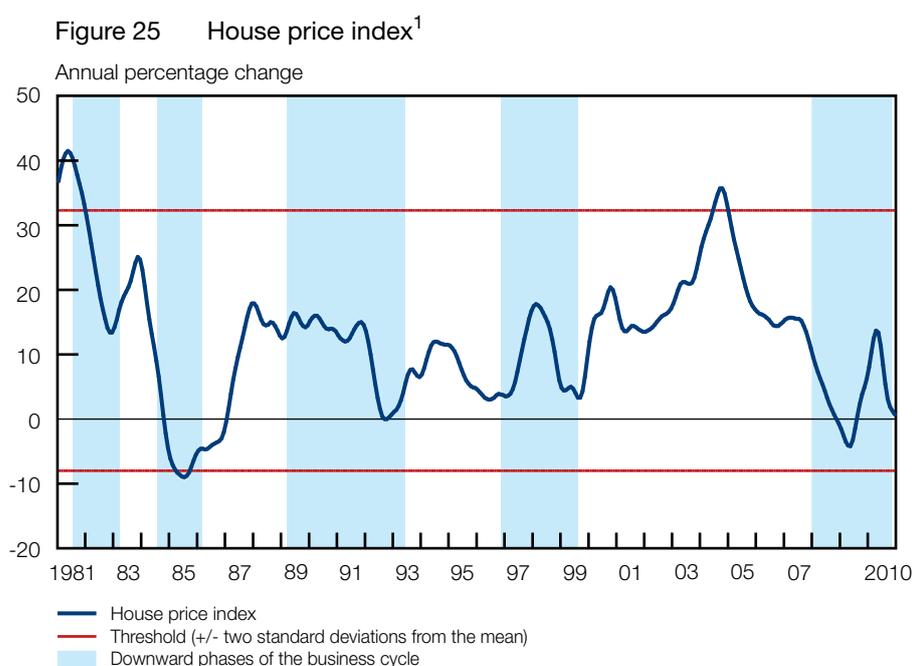
Sources: FinMark Trust and Unisa Bureau of Market Research

## Residential real-estate sector

The deceleration in house price growth that started in May 2010 continued for the rest of the year. For 2010 as a whole, nominal house price growth of 7,6 per cent was recorded, compared with -0,2 per cent for 2009.

House price trends differed significantly for the second half of 2010 compared to the first half. The noticeable upward trend of an average 11,6 per cent year-on-year growth in the first half of 2010 was followed by a significant slowdown to an average 3,7 per cent year-on-year growth in the last six months of 2010. The main factor responsible for house price trends in the first half of 2010 was the base effect. As house prices were fairly low in the first half of 2009, the annual growth rate of house prices was high in the first half of 2010. The situation was reversed in the second half of 2009 when there was a recovery in house price growth. The slowdown in the growth rate in the second half of 2010 could also be attributed to factors such as slow economic growth and job losses, which negatively affected consumers' ability to take up new credit, and a lack of improvement in consumer confidence.

The annual growth rate of house prices entered a deflationary phase in January 2011 when a growth rate of -0,2 per cent was recorded. That was followed by annual growth rates of -1,2 and -2,1 per cent in February and March respectively. The pedestrian performance of the property market could continue for some time as households remain concerned about their financial well-being and are unwilling to make long-term commitments.



<sup>1</sup> The Absa House Price Index is based on the total purchase price of houses in the 80 m<sup>2</sup>–400 m<sup>2</sup> size category valued at R3,5 million or less in 2008 (including improvements) in respect of which loan applications were approved by Absa. Prices are smoothed in an attempt to exclude the distorting effects of seasonal factors and outliers in the data

Source: Absa Bank Limited

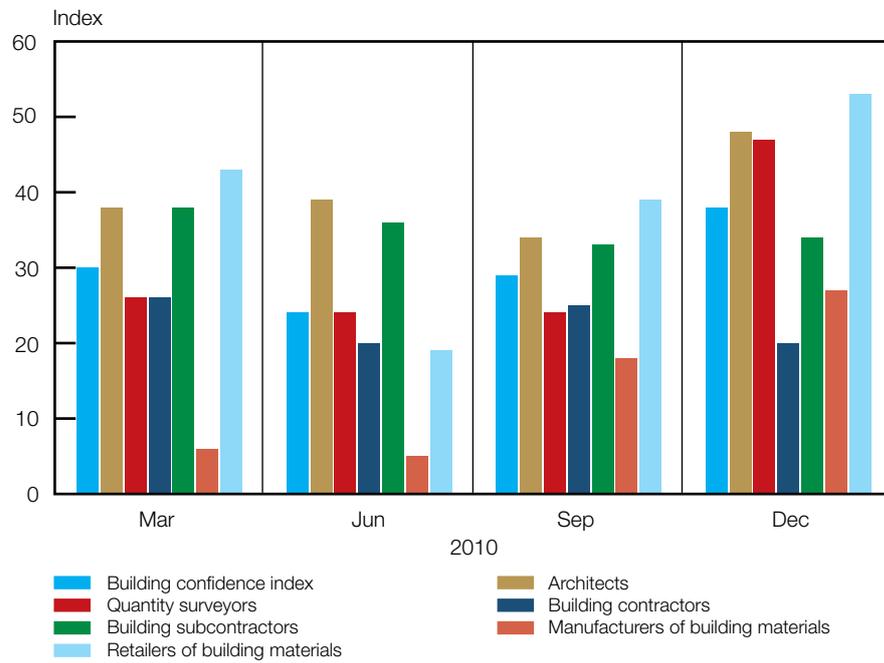
Although building contractors continued to experience difficult conditions during the fourth quarter of 2010, the increase in the FNB/BER Building Confidence Index<sup>41</sup> could be a signal of future recovery in building activity later in 2011. The rise from 29 in the third quarter to 38 index points in the fourth quarter was attributed to a recovery in the confidence of the sectors at the planning stage of the pipeline (architects and quantity surveyors). While the rise in the FNB/BER Building Confidence Index in the fourth quarter was encouraging, the situation changed in the

<sup>41</sup> The index varies between zero (indicating an "extreme lack of confidence") and 100 (indicating "extreme confidence"). It reveals the percentage of respondents that are satisfied with the prevailing business conditions in six sectors of the construction industry.



first quarter of 2011. The index dropped to 24 index points and reached the same level as in the second quarter of 2010, which was the lowest in the recession and the lowest point in 11 years. The high volatility can be a reflection of uncertainty in the construction industry.

Figure 26 Building confidence index



Source: Bureau for Economic Research

## Infrastructure and regulation

This section of the *Financial Stability Review* reports on and reviews developments in the financial infrastructure and regulatory environment. It begins with an update on significant financial legislation and infrastructural developments that impact on the domestic financial sector. This is followed by a discussion of the release of the IMF and World Bank ROSCs on the supervision and the regulation of the banking, insurance and securities markets. In addition, recent proposals on financial leverage from the Basel Committee, and the role of Strate<sup>42</sup> as South Africa's central securities depository (CSD) and its risk mitigation strategies in terms of settlement risk are discussed.

### Update on financial policy, and legislative and infrastructural developments affecting the South African financial system

#### Financial-sector regulatory reforms

The Minister of Finance (the Minister) announced in his February 2011 Budget speech the release of a policy paper on proposed reforms to the financial regulatory structure in South Africa.<sup>43</sup> The policy document sets out key proposals that are aimed at enhancing financial stability, consumer protection and financial inclusion. One of the major proposals is to introduce a "twin peaks" regulatory structure for South Africa by integrating prudential regulation under one agency and market conduct under another.<sup>44</sup> According to the proposal, business and market conduct will continue to fall under the auspices of the FSB. At present, the prudential regulation and supervision of the banking sector is a function of the the Bank, but under the twin peaks approach, it is proposed that the Bank supervise other sectors such as insurance and the securities market prudentially. In addition, it proposes to strengthen the financial stability policy area by

- underpinning the Bank's mandate for financial stability through the establishment of a new Financial Stability Oversight Committee comprising the Bank, the FSB and National Treasury (NT). This is to be co-chaired by the Bank's Governor and the Minister;
- reviewing and reforming the Financial Sector Charter to encourage extension of basic financial services such as micro-insurance to the poor;
- formalising the Council of Financial Regulators in order to enhance regulatory co-ordination;
- improving consumer protection by broadening the mandate of the FSB to include the regulation of market conduct aspects of retail banking; and
- requiring all businesses in the financial sector to be licensed or registered in order to enhance the comprehensiveness of regulation.

It is expected that the finer details of these proposals will be subject to consultations with key stakeholders including members of the public. The Bank will participate in these discussions. It is anticipated that some of the proposals may require the passing of new legislation.

#### Box 4 The twin peaks regulatory framework approach

Globally, there are a number of supervisory and regulatory frameworks that include institutional, functional, integrated and twin peaks models. The choice of a regulatory framework is influenced by political, economic and financial market-place factors, and policy objectives in different countries and, typically, evolves over time. South Africa intends to move to a twin peaks regulatory framework in the near future. The twin peaks approach is one in which there is integration of supervision across industries, but not across objectives. The twin peaks approach is also referred to as a form of supervision by objective, with separate agencies aiming to achieve different objectives.

Two well-known jurisdictions that currently use this approach are Australia and the Netherlands. The twin peaks approach is credited with the ability to garner the benefits of an integrated approach and to resolve the conflicts that may arise between prudential supervision and conduct-of-business regulation. The

42 Strate stands for "Share Transactions Totally Electronic" and its corporate website is [www.strate.co.za](http://www.strate.co.za).

43 The policy paper is entitled *A Safer Financial Sector to Serve South Africa Better*, [www.treasury.gov.za](http://www.treasury.gov.za).

44 Box 4 below summarises the "twin peaks" approach to financial regulation.



allocation of the responsibility of business conduct rules for customer and investor protection to a separate agency can help resolve these and related conflicts. The integration of prudential supervision in one agency can reduce the co-ordination challenges associated with having several financial supervisors and it has the potential to eliminate regulatory arbitrage opportunities for firms in a single jurisdiction. The integrated prudential supervisor can also facilitate international co-ordination with other regulators more effectively. The integrated prudential supervisor may be located either in the central bank (the Netherlands) or in a separate independent agency (Australia).

There is ongoing debate on whether to place the prudential supervisor in- or outside the central bank. The ability of the central bank to assess the soundness of the key role-players in the payments system, its lender-of-last resort function and the availability of expertise to focus on the macroeconomy have tilted this debate in favour of placing integrated prudential supervision within the central bank in many jurisdictions. It is thus not surprising that regulatory developments and proposals in the United Kingdom and United States have placed greater responsibility for prudential supervision on their respective central banks.

## Prudential framework for foreign investment

The Minister announced in October 2010 that the prudential framework for foreign investment by private and public pension funds will be reviewed to support portfolio realignment and offshore diversification of these funds. Subsequently, a 5 percentage point increase in the limit of the amount that institutional investors can invest offshore was announced and implemented.<sup>45</sup> The relaxation of the prudential foreign asset limits for investors is partly a mechanism for absorbing current holdings of inward-listed instruments without a domestic classification.<sup>46</sup>

It is important to balance the merits of further relaxation with the arguments of why limits are needed in the first place. As part of the development of a framework for the regulation of foreign exposure for institutional investors, a discussion paper entitled "Prudential Regulation of Foreign Exposure for South African Institutional Investors" has been released for public comment. The paper states that foreign asset limits in South Africa have both micro- and macroprudential objectives. These objectives have important financial stability imperatives of promoting foreign diversification of institutional portfolios, while providing a limit on overall foreign risk exposure in line with the existing rules-based framework for the regulation of risk. In addition, the limits can make the volatility of capital flows less pronounced, contain possible contagion from international crises and help in avoiding excess reliance on volatile foreign capital to fund domestic investment.

## Framework for cross-border direct investment in South Africa

As part of the review process on a framework for cross-border investment in South Africa, a discussion document was released for the public to comment on by 30 April 2011. The discussion document provides for a coherent policy framework for the regulation of cross-border direct investment in general or investment in particular sectors of the economy which may be regarded as strategic. The overall objectives of such a policy framework are to align it with the broader macroeconomic objectives of government, including the maintenance of an open environment for foreign direct investment (FDI), while addressing the specific public interest considerations emanating from cross-border direct investments for South Africa.

The proposed policy framework will apply only to certain forms of cross-border acquisitions and related restructurings of existing South African businesses. It is intended to provide a transparent mechanism for assessing the balance of public interests in the case of these complex investments that create specific risks for South Africa, while maintaining an open environment for FDI. It is anticipated that the policy framework will enhance the contribution of FDI in growing the domestic economy and generating employment; a much-needed contribution towards a stable financial system.

## Amendment of Regulation 28 of the Pension Funds Act, 1956

The pending changes to regulation 28 of the Pension Funds Act, 1956 (Act No. 24 of 1956)<sup>47</sup> were discussed in detail in the September 2010 issue of the *Financial Stability Review*. The final

45 The new limits are as follows: 20 to 25 per cent for retirement funds and long-term insurers (non-investment-linked), and 30 to 35 per cent for collective investment schemes, investment managers and long-term insurers (investment-linked).

46 This includes inward-listed shares on the JSE Limited which have been granted an extension or exception by the Minister to allow for their holding outside the foreign investment limits for a transition period that will expire in the next two years.

47 The Pension Funds Act, 1956 governs the management of private pension funds and the investment of the industry's assets on behalf of a fund's members. South African households have approximately R4,5 trillion invested in financial assets of which about a third is invested in pension funds.

draft of the amendments was released in the period under review and will be effective as from 1 July 2011.<sup>48</sup> The broad aims of the Regulation 28 reform process are to protect investors, to close regulatory gaps that mask the actual underlying asset allocation through successive layers of diverse investment vehicles and instruments (the look-through principle),<sup>49</sup> and to reduce systemic risk that may originate from relatively unregulated areas such as unlisted derivatives, private equity and hedge funds.

Important revisions of regulation 28 include the decision that it should remain primarily rules-based until the broader retirement reform process has been finalised. In addition, definitions relating to, among other things, derivatives, money-market instruments and Islamic debt instruments were aligned across the investment management regulatory regime to ensure consistency. It is anticipated that the revised regulation 28 will help ensure that the savings that South Africans contribute towards their retirement are invested in a prudent manner that not only protects the retirement fund member, but are channelled in ways that stimulate economic development and growth.

## Solvency assessment and management

The FSB has undertaken to enhance the soundness of insurance companies and protection of policyholders through a risk-based solvency regime known as SAM. The initiative will create a solvency regime for both short- and long-term insurers with the ultimate goal of aligning South Africa's insurance industry with international regulatory standards. Additional objectives include the alignment of capital requirements with underlying risks, development of a risk-based approach suitable for small insurers and large cross-border groups, and provision of incentives to insurers who adopt best practice risk management tools.

SAM is based on a three-pillar approach. Pillar I encompasses quantitative requirements (i.e., assets, technical provisions and capital requirements). Pillar II deals with the qualitative supervisory review process, and requires that every insurance firm must, as a minimum, have the following functions: risk management, internal audit, and actuarial and compliance functions. Pillar III relates to market discipline which comprises reporting certain detail to supervisors, and quarterly submissions of core information and public disclosure.

In anticipation of comments from industry, the FSB has issued a roadmap document which gives guidance to the insurance industry on how to prepare for the implementation of SAM.<sup>50</sup> The guidance document contains the major timelines, summary of interim measures and gives guidance on Pillar I, II and III implementation. New legislation is expected to be enacted in 2013 with implementation planned for 1 January 2014.

## Amendments to the Securities Services Act, 2004

The Securities Services Act, 2004 (Act No. 36 of 2004), (the Securities Act) came into operation in February 2005 as part of a process to consolidate several financial services Acts that existed at the time. The Securities Act is currently being reviewed to align it with international best practice, financial market developments, investor protection developments and to bring previously unregulated matters within the scope of regulation. Some of the intended amendments relate to the custody and administration of securities, the provision of clearing house services to an exchange and the establishment of an enforcement committee. The amended Securities Act will be applicable to all exchanges, the CSD, clearing houses, buyers and sellers of unlisted securities, and clients of authorised users. It addresses the following issues:

- The self-regulatory status, role and functions of exchanges including minimum requirements for exchange licence applicants
- A code of conduct for authorised users, officers, employees and clients
- The reporting of all off-market transactions in listed securities to the Registrar of Securities Services

48 Further details on Regulation 28 can be found at [www.treasury.gov.za](http://www.treasury.gov.za).

49 The look-through principle states that a fund must not utilise any asset to circumvent the limits as set out in the regulation and, where an asset is made up of underlying assets, the fund must include and disclose the underlying assets to which the economic exposure of the underlying assets relate.

50 The SAM roadmap is available on the FSB at [www.fsb.co.za](http://www.fsb.co.za).



- The demutualisation of self-regulatory organisations and amalgamation of two or more exchanges.

It is envisaged that once the amended Securities Act becomes effective, it will reduce systemic risks pertaining to these markets and will increase confidence in South African financial markets.

## Reports on Observance of Standards and Codes for the banking, insurance and securities markets supervision

In the first half of 2010 South Africa's regulators underwent a compliance assessment in the areas of banking supervision, insurance supervision and securities markets regulation. The assessments were conducted by a joint team from the IMF and World Bank. The ROSCs were published in December 2010. The standard methodologies for conducting the assessment were used by assessing the laws, supervisory requirements and practices in place at that time. The findings of the three ROSCs were generally positive, but did highlight areas where further development of the regulatory and supervisory framework was needed.

### Banking supervision Report on Observance of Standards and Codes

South Africa's banking regulatory system was found to be fundamentally sound and substantially compliant with the Basel Core Principles (the Core Principles). The banking supervisor was assessed as compliant and/or largely compliant with 22 of the 25 Core Principles. The three Core Principles for which South Africa was rated materially non-compliant refer to (i) the corrective and remedial powers of the supervisor to appoint a curator, and to cancel or suspend a bank's licence or to restrict a bank's activities, (ii) the regulation of country and transfer risks and (iii) exposure to related parties. Cognisance should be taken of the fact that the assessment of fulfilment of the Core Principles is not, and is not intended to be, an exact science and is influenced by the judgement of the assessor which could be subjective in nature. The South African authorities have queried some of the findings of the assessment in the report and these concerns are detailed in the response to the assessment included in the report on the ROSC.<sup>51</sup>

The ROSC commended South Africa on the effectiveness of its banking supervision, its early adoption and full implementation of the Basel II capital framework, and continued efforts to remain in line with international developments. The report noted, among other things, that the systemic risk capital add-on and the implementation of idiosyncratic capital buffers have contributed to the strength and stability of the South African banking system, and that the framework for domestic contingency planning has been strengthened.

The report made recommendations relating to accounting practices for loan-loss provisioning, the implementation of a deposit insurance scheme and proposed enhancement to the monitoring of banks' liquidity management practices, including introducing appropriate stress tests. The Bank, in co-operation with the NT, is studying the findings and recommendations of the ROSC, and is considering options to address them.

### Insurance supervision Report on Observance of Standard and Codes

The FSB, in its role as the insurance supervisor, received a generally favourable assessment of compliance with the 28 Insurance Core Principles (ICPs). It was found to be observing 15, largely observing 10 and partially observing 3 ICPs.<sup>52</sup> Issues that are currently receiving attention from the FSB include the consolidated supervision of groups, the modernisation of solvency requirements through the SAM project and introducing guidelines on market conduct through the Treating Customers Fairly (TCF) initiative.<sup>53</sup> The ROSC also noted the increase in co-operation between the FSB and other regulators, such as the Bank, and other regulatory initiatives such as the regulators roundtable.

51 IMF, *South Africa: Detailed Assessment of Compliance on Basel Core Principles for Effective Banking Supervision*, (Washington DC: IMF, October 2010), <http://www.imf.org/external/pubs/cat/longres.aspx?sk=24483.0>.

52 The assessment of South Africa's compliance with the Insurance ICPs of the International Association of Insurance Supervisors (IAIS) was based on the 2003 version of the IAIS ICPs and methodology.

53 Refer to the September 2010 issue of the South African Reserve Bank *Financial Stability Review* for a discussion of the TCF initiative.

Furthermore, the ROSC made recommendations to enhance insurance supervision in South Africa. One of the suggested ways is through the extension of the FSB's powers of enforcement and sanction that will provide the FSB with additional powers to enforce requirements and to seek legislative reforms to give priority to policyholders in the event of a winding-up or insolvency of an insurance company. These powers should include provisions relating to dealing with individuals such as the imposition of fines and the barring of individuals from acting in responsible positions in future.

Regarding supervisory processes, the ROSC recommended that the FSB should develop best practice requirements setting out its expectations in respect of internal controls, governance, risk management and use of derivatives by insurers. In addition, the ROSC recommended that the FSB should introduce specific requirements for insurers to implement on aspects such as fraud prevention, internal audit and control over outsourcing of functions to third parties.

## Securities markets regulation Report on Observance of Standards and Codes

In the area of securities markets regulation the FSB received a favourable outcome in the assessment as securities markets in South Africa were viewed as robust. In terms of adherence to, and compliance with, the 30 International Organization of Securities Commissions (IOSCO) principles, the FSB was found to be compliant with 16, largely compliant with 11 and partially compliant with 2 of these principles. One principle was not rated.<sup>54</sup>

The ROSC commended the FSB on improvements that had been made in several areas of securities regulation, particularly the promulgation of the Financial Services Laws General Amendment Act, 2008 (Act No. 22 of 2008) which has improved the legal authority and enforcement powers of the FSB. The FSB was also commended for expanding its on-site examinations of registered entities and for introducing rules related to financial services providers who now have to adhere to the fit-and-proper criteria and capital-adequacy requirements.

With respect to regulatory areas that could be strengthened, the ROSC recommended, among other things, enhanced guidelines regarding the powers of the Minister, rules for securities trading, clarification of the status of self-regulatory organisations, improving oversight of trading activities for unlisted companies and development of a clear framework for the regulation of hedge funds. Some of the other recommendations made related to the functions of the Registrar of Companies, and the Department of Trade and Industry. Although some of these recommendations do not pertain directly to the FSB, they have an important role in the broader financial regulatory framework for securities markets.

Since the assessment, the FSB has embarked on several initiatives to reform regulatory legislation in the non-bank sector, including the amendment of the Securities Act, the Collective Investment Schemes Act, 2002 and proposals to regulate over-the-counter (OTC) markets.

## The impact of financial leverage standards as proposed by the Basel Committee

In response to the excessive leverage undertaken by some international financial institutions, which, together with other factors, amplified the severity of the crisis, the Basel Committee has proposed a minimum leverage ratio of 3 per cent of the new definition of Tier 1 capital. The leverage ratio will operate in conjunction with current Basel II capital requirements and the proposed Basel III risk-based prudential tools. Suitably constructed leverage ratios may, both as indicators of potential excesses and safeguards against amplification mechanisms, play an important role in a broader macroprudential framework. The financial leverage ratio proposals are set out in the Basel III rules text, which represents the framework of global regulatory standards on bank capital-adequacy and global liquidity standards. Based on the results of the parallel-run period, any final adjustments to the definition and calibration of the leverage

54 The only principle that was not rated was that which addressed self-regulatory organisations and their powers.



ratio will be carried out in the first half of 2017, with a view to migrating to Pillar 1 treatment on 1 January 2018.

The potential impact of the new capital and liquidity standards were discussed in previous issues of the *Financial Stability Review*. While South African banks should be in a position to adjust easily to the higher and more stringent capital requirements, the introduction of the new liquidity standards presents some specific challenges. Given the structural nature of constraints in the South African funding market, meeting the requirements of the new liquidity standards in their present format will entail significant efforts from banks and policy-makers such as the NT.

The potential of the financial leverage ratio to provide data that are comparable across jurisdictions must be embraced, especially if it is going to enhance financial stability domestically and abroad. Given this background, a discussion of the likely impact of the proposals on leverage for South African banks follows.<sup>55</sup>

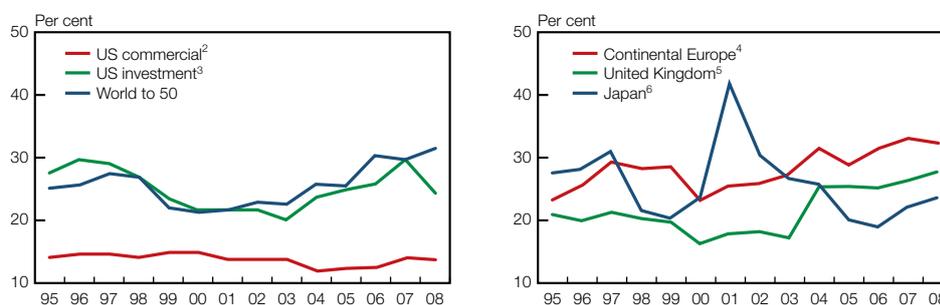
## Conceptual and definitional issues

One of the difficulties associated with the term 'leverage' is how to define it. Leverage is used in various ways by different business entities and depends on the financial context in which it is being used. In essence, leverage refers to the funding of assets and investments by typically borrowing money. Defining leverage is complicated by, among other things, the inclusion of off-balance-sheet items, accounting practices such as market-sensitive valuation techniques and issues of procyclicality.<sup>56</sup> There is, nevertheless, broad consensus that there are significant risks associated with leverage, as a highly leveraged firm's equity capital can be wiped out when returns from the leveraged investments become unfavourable, since leverage magnifies both gains and losses.

## Leverage trends in selected developed economies and South Africa

Banking-sector leverage ratios for banks in the euro area, Japan and the US indicate that banks in these jurisdictions have, on aggregate, leveraged their capital between 20 and 30 times in the decade prior to the global financial crisis. Figure 27 indicates that balance-sheet leverage ratios, except for Japan, increased after 2003 and reached a peak in 2007/08.<sup>57</sup> The build-up of financial leverage during this cycle was attributed to growing credit exposures on banks' balance sheets and off-balance-sheet vehicles such as structured investment vehicles, collateralised debt obligations and securities arbitrage programmes. Only a few countries used a leverage ratio alongside risk-based capital-adequacy requirements to supervise developments in the banking sector.<sup>58</sup>

Figure 27 Bank balance leverage multiples in selected countries<sup>1</sup>



- 1 Balance-sheet leverage ratio (total assets divided by total equities) of individual banks weighted by asset size
- 2 Bank of America Citigroup, JPMorgan Chase, Wachovia Corporation, Washington Mutual and Wells Fargo and Company
- 3 Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch and Morgan Stanley
- 4 ABN AMRO Holding, Banco Santander, BNP Paribas, Commerzbank, Crédit Agricole, Credit Suisse, Deutsche Bank, Société Générale, UBS and UniCredit SpA
- 5 Barclays, HSBC, Lloyds TSB Group and Royal Bank of Scotland
- 6 Mitsubishi UFJ Financial Group, Mizuho Financial Group and Sumitomo Mitsui Financial Group

Source: Committee on the Global Financial System, "The Role of Valuation and Leverage in Procyclicality", CGFS Paper No. 34, April 2009

55 The details of the leverage ratio and its implementation are discussed in the rules text released by the Basel Committee in December 2010 titled *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, (Basel Committee Rules Text).

56 Balance-sheet accounting leverage is measured as the ratio of total assets on balance sheet to equity.

57 Committee on the Global Financial System, "The Role of Valuation and Leverage in Procyclicality". CGFS Paper No. 34, April 2009.

58 It would appear that in the regions most afflicted by the crisis only the US and Canada used leverage ratios as part of their prudential toolkit, and in 2008 the Swiss regulator FINMA used a minimum leverage ratio under Pillar 2 of Basel II solely for Credit Suisse and UBS. See the World Bank Group's Note No. 11 titled "The Leverage Ratio: A New Binding Limit on Banks".

The results of the Basel Committee Quantitative Impact Study (QIS) on its regulatory reform proposals confirmed the trend, since the average leverage ratio was between 2,8 and 3,8 per cent for the banks in the global study, which approximates to capital being leveraged between 26 and 37 times. The majority of data was from the period leading up to the global financial crisis, which reinforced the notion that the leverage of the banking sector tends to increase in times of asset price booms.

Figure 28 depicts the four biggest South African banks' leverage multiple for the period January 1994 to December 2010 which has, on average, hovered around 20 times; a leverage ratio of about 5 per cent.<sup>59</sup> The leverage multiple decreased in the aftermath of the South East Asian crisis and has since 2003 trended downwards to slightly below 17 times in 2010, representing a leverage ratio in the region of 6 per cent. Besides the conservative nature of banking in South Africa, the downward trend in the leveraged position of banks can also be attributed to developments in the supervisory arena such as the drive to improve the level and quality of capital over the past few years.

Figure 28 The leverage multiple of the four largest banks in South Africa



Source: South African Reserve Bank

To date, the assessment and monitoring of leverage position ratios have not constituted a formal part of the supervisory framework for banks in South Africa. Given the trends as depicted in Figure 28, and despite the adjustments required to calculate the capital and exposure measures of leverage as prescribed by the Basel Committee, it would appear that South African banks should be able to meet the requirement of a minimum leverage ratio of 3 per cent of Tier 1 capital.<sup>60</sup>

### The role of Strate as South Africa's central securities depository<sup>61</sup>

The financial crisis affirmed the fact that CSDs have become essential structures for financial markets. CSDs should ensure sustained reliability and the mitigation of risk, while providing centralised services for all financial instruments, including the clearing, settlement and custody of securities. In the South African market Strate was licensed by the FSB as the authorised CSD for financial instruments. As a CSD, one of Strate's core purposes is the mitigation of a variety of risks, while bringing efficiencies to South Africa's financial markets by boosting both trading and liquidity in the market. An efficient CSD should enhance South Africa's profile as an investment destination and should align local market practices with international best practice.

59 In interpreting the results, it should be kept in mind that between 1994 and 2010 several regulatory changes occurred, such as the adoption of Basel II and the accounting treatment of financial instruments.

60 A further QIS leverage exercise will take place during the monitoring period, where banks would be required to submit leverage data to the bank supervisor on a half-yearly basis.

61 The content of this section is largely based on a contribution by Strate Limited.

62 The authorised participants are Absa Bank Limited, Computershare Limited, Eskom Holdings Limited, FirstRand Bank Limited, Nedbank Limited, Société Générale Johannesburg Branch, South African Reserve Bank and The Standard Bank of South Africa Limited.

63 Previously, shares were settled using a paper-based environment in which a number of difficulties, gross inefficiencies and settlement delays abounded.

64 "IOSCO Recommendations for Securities Settlement Systems" which contains 19 specific recommendations for the establishment and maintenance of "an efficient and accurate clearing and settlement system that is properly supervised and utilises effective risk management tools".

65 South Africa complies with all the recommendations set out by the G-30, except for the settlement of equities on a T+5 basis instead of the prescribed T+3 basis.

67 'SWIFT' stands for the Society for Worldwide Interbank Financial Telecommunications. SWIFT is a network owned by the major banks in the world and is therefore the provider of choice for all major financial institutions globally. It is viewed as one of the most secure networks in the world with consistent 99 per cent up-time.

68 'Rolling settlement' refers to a settlement environment in which transactions (securities and funds) become due for settlement a set number of business days after trade, on a continuous basis.

Strate handles the settlement of equities, bonds, money-market securities, and a range of derivative products such as warrants, exchange-traded funds (ETFs), retail notes and tracker funds for the JSE Limited (JSE). It also provides a variety of services to issuers. Its clients include South Africa's authorised participants, the JSE, securities lending and borrowing business partners, money-market business partners, and issuers of listed and unlisted securities.<sup>62</sup>

Effective risk management is one of the cornerstones on which a CSD is built. The specific risk profile of a depository positions a CSD uniquely to play the role of an independent, trusted third party in any market. The real-time, electronic settlement of securities transactions provides significant risk-reducing benefits to the South African financial market, while at the same time ensuring accurate record keeping and asset servicing.

## Compliance with international standards for the mitigation of settlement risk in South Africa

The introduction of electronic settlement has contributed to improving the settlement risk profile of financial markets in South Africa. In 1998 South Africa was rated as one of the world's worst emerging markets for the settlement of securities transactions, but by 2003 was rated among the best.<sup>63</sup> In achieving these ideals, South Africa was guided by best practice recommendations released by IOSCO<sup>64</sup> and forums such as the Group of Thirty (G-30) in the establishment of world-class standards. Strate ensures that financial markets in South Africa, where applicable, comply with all the objectives and principles set by these organisations.<sup>65</sup>

High levels of conformity to these international standards and best practices contribute to stability in the South African securities markets. This is reflected in the results of the Capital Markets Infrastructure Risk Ratings (CMIRR).<sup>66</sup> These standards do not necessarily protect against investment risk, but help provide investors with a level of certainty around the infrastructure itself, even in times of investment uncertainty. South Africa's current risk rating is AA- and is comparable with many leading, developed markets in the world, including Europe, the US and Canada.

## The mitigation of settlement risk in South Africa

The introduction of a CSD in South Africa has mitigated the risks associated with the settlement of securities transactions. More specifically, this has been achieved by introducing the following mechanisms:

- *Electronic custody of shares:* Shareholding of dematerialised equities and bonds is recorded electronically by each of the participants and collated at a participant level in Strate. In the money-market environment, the custody of securities occurs in a securities ownership register (SOR). This is in direct contrast with the paper settlement environment where risks of lost, forged or stolen documents can abound. Listed companies now have access to accurate registers of investors.
- *Secure information technology systems:* The electronic record of shareholding is subject to extensive encryption and authentication, while the use of the SWIFT<sup>67</sup> network for the relay of electronic information allows for a secure communications channel between counterparties.
- *Rolling settlement:*<sup>68</sup> Rolling settlement has been introduced on a T+5 basis for equities, a T+3 basis for bonds and a T+0 basis for money-market securities (where T = trade date), which represents a significant departure from the "account period" methodology employed in the past by the equities market.
- *Contractual settlement:* Investors obtain the assurance that their transactions settle on the specified settlement day, and therefore the risk of delayed settlement and loss of earnings is significantly reduced.
- *Simultaneous final irrevocable delivery versus payment:* The South African market is among few in the world that have achieved true simultaneous, final, irrevocable, delivery versus payment (SFIDvP) in central bank funds. This has been attained with the use of the continuous

batch processing line (CBPL) functionality for equities, the continuous processing line (CPL) for bonds and the real-time line (RTL) for money-market securities in the South African Multiple Options Settlement (SAMOS) system. All payment obligations must be provided for in SAMOS before the settlement run can commence.

- *Connectivity through SAMOS*: The integration of SAMOS provides for final and irrevocable settlement with Strate systems, and allows for contractual settlement and finality of securities ownership transfer. It also allows the market to provide investors with SFIDvP.<sup>69</sup>
- *Increased market regulation*: Strate is a registered public company for profit,<sup>70</sup> a CSD, clearing house and a self-regulatory organisation (SRO). These roles essentially comprise two independent functions, namely (i) the CSD function of providing securities services and (ii) the SRO function of supervising compliance by Strate participants.
- *Business continuity management (BCM)*: BCM has become an integral part of the interconnected environment in which a CSD operates. By embedding very high levels of resilience in various centralised services, the industry is better able to mitigate against disruption in an effective and efficient manner.

69 The interdependence of these two systems (SAMOS and settlement systems) is in line with the worldwide drive towards consolidation and the resultant economies of scale.

70 The Strate Board, its sub-committees and management ensure that effective corporate governance and strong risk management processes are implemented.

## Future developments

A number of projects are under way to enhance and improve CSD services. These include the following:

- *Golden copy concept*: The concept of a “golden copy” is that one official and standardised source and record of information exists for a corporate action announcement. It allows investors to make quick and accurate decisions from the simultaneous dissemination and processing of information across the market. This enables straight-through processing from the issuer to investor in the quickest possible time.
- *Segregated depository accounts (SDAs)*:<sup>71</sup> SDAs are specifically designed to mitigate against the risk of default on the part of a participant (e.g., the local bank or custodian) and are intended to provide investors with the added protection of ensuring that, even in the event of participant failure, their assets are not trapped in the failed entity (even if only due to an administrative constraint) and are almost immediately available to the investors via an alternate service provider.
- *Settlement of equities*: The settlement of equities on the JSE currently exceeds the internationally accepted T+3 standard. A project is currently under way among all parties concerned to ensure that T+3 settlement will be implemented in 2013.
- *Other efficiency matters*: Other projects include the establishment of direct CSD-to-CSD links between Strate and a number of its foreign counterparts to eliminate cross-border trading inefficiencies.

71 ‘SDA’ is also referred to as an Account Operator model. The concept of SDAs, or the implementation of the so-called Account Operator model, as it is referred to globally, relates to security safe-keeping accounts that are administered and opened directly by a participant in the books of the CSD.

## Conclusion

The recent turmoil in the global financial markets has provided some encouraging insights into the robustness of the South African financial market infrastructure and the important role that a CSD plays in enabling the market to continue functioning. Despite great strides made in the past to mitigate settlement risk in the CSD environment, the various stakeholders in the market strive to mitigate risk even further and bring more efficiencies to South Africa’s financial markets. Specific examples include the focus on the move to a T+3 settlement cycle for equities, and the ongoing drive for the introduction of an SOR in both the equities and bond markets. The bond market settlement model itself is currently undergoing a complete review and this too is expected to mitigate further against current inefficiencies.

# Note on interlinkages in the South African interbank system\*

1 Graduate School, Global Financial Markets, Friedrich-Schiller-Universität Jena.

2 Macroprudential Supervision Unit, Bank Supervision Department, South African Reserve Bank.

By C-P Georg<sup>1</sup> and N Brink<sup>2</sup>

## Introduction

The financial crisis of 2007 onwards highlighted the necessity for macroprudential oversight of the financial system, in addition to the existing microprudential supervision. To ensure financial stability, it is not only necessary to monitor the financial institutions themselves, but also to analyse the network structure that they form due to their various interlinkages. Because of banks' dependency on liquidity provision, interbank loans are among the most vital interconnections between banks. In well-functioning interbank markets, banks with excess liquidity provide loans to banks with a demand for liquidity, usually on a short-term basis and without underlying collateral. This interconnection can lead to an enhanced liquidity allocation and increased risk sharing in the banking system.

There is, however, a downside to the interconnectedness in the financial system. As was seen globally at the height of the financial crisis, interbank markets display robust, yet fragile, behaviour – the very same interconnections that lead to an enhanced liquidity allocation in normal times can serve as shock amplifiers in times of a crisis. Even though the direct effects of the crisis on the South African financial system were modest, measuring and monitoring systemic risk and possible contagion in interbank markets remain important elements of maintaining financial stability. The purpose of this note is to analyse the interbank network structure of the South African financial system, thereby contributing to the goal of strengthening macroprudential oversight. It also proposes an index to measure the systemic importance of South African banks in the interbank market.

## Network theory

A new approach to assess systemic risk in financial markets originates from network theory and has been widely applied to ecology, neuroscience, biochemistry, epidemiology, social sciences and computer sciences. The increase in computing power in recent years has led to a vast increase in the research of large and complex systems, and some of the results can be applied to the analysis of financial networks.

A financial network consists of a set of banks (nodes) and a set of relationships (edges) between the banks. Even though many relationships exist between banks, this note focuses on relationships that stem from interbank borrowing and lending. Systemic risk in the interbank market stems from the contagion effect that the default of one bank has on the capital adequacy, solvency and leverage of other banks, including the indirect impact through asset sales that can trigger a general fall in asset prices.

The research on which this note is based uses actual exposures of banks obtained from the South African Multiple Option Settlement (SAMOS) system. The vast majority of interbank payments in South Africa are made via the SAMOS system, giving a uniquely accurate overview of the actual payments between banks. In total, nearly 13 million transactions were taken into account over the period February 2005 to June 2010. Interbank loans were identified by a matching algorithm<sup>3</sup> where for each transaction from Bank A to Bank B, the algorithm searches for a matching transaction in the opposite direction. A further requirement was that the loans should be larger than R10 million to increase the probability that a transaction was indeed an interbank loan and not a retail transaction. According to the authors, the dataset used in this analysis is one of the most extensive ones to assess the stability of an interbank system on the basis of actual exposures.

3 The matching algorithm was originally introduced by Furfine (1999).

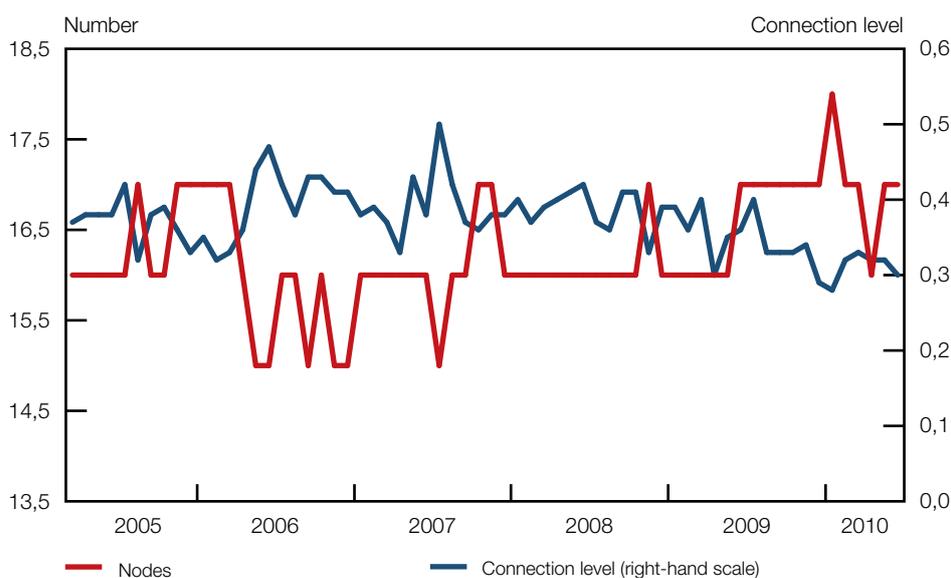
\* This note is a shortened version of a Discussion Paper published by the South African Reserve Bank by C-P Georg and N Brink in February 2011.



## Network measures of the South African banking system

In order to describe the network topology of the South African interbank system, one can resort to measures from network theory. Four properties were used to describe a network in this note. The first property is the size of the network, given by the number of nodes in the network and shown on the left axis in Figure A. The second property is the connectivity of the interbank market. This is defined as the fraction of actual edges to possible edges between nodes and is called the 'connection level'. It can range from 0 (no interconnections) to 1 (every bank is connected to every other bank) and shown on the right axis in Figure A. During normal times when the interbank functions effectively, a high connection level will lead to a more stable system as banks can access liquidity from more sources.

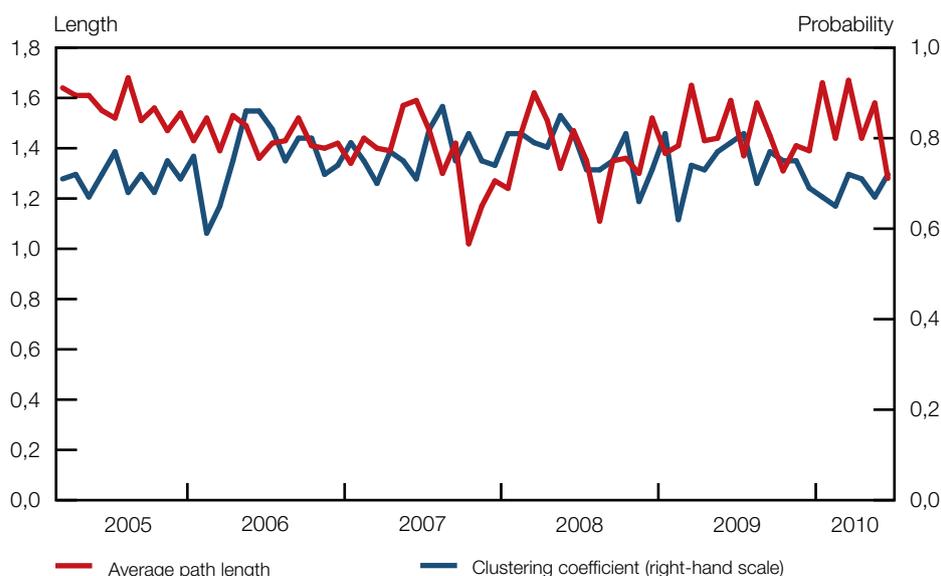
Figure A Network properties of the South African overnight interbank market



In the South African system the number of banks (nodes) that participate in interbank lending varied between 15 and 18, while the connection level varied between 0,33 and 0,50. It can be seen that the system is largely stable both by looking at the fairly stable number of banks that participate in interbank lending and the relatively high level of connections between the banks. The large number of banks actively participating in the interbank market also reflects the efficiency of the SAMOS system.

The third property that is used to determine the structure of the interbank system is the average path length, which is defined as the average number of connections that is needed to transfer liquidity from one bank to another. During normal times, a small average path length indicates a well-connected system, where liquidity can easily be transferred from one bank to another. However, if banks are distressed, a short average path length also implies that contagion can spread faster through the system. Note that the average path length does not give any indication of the probability of an initial knock-on effect but rather describes how such an exogenous event can spread in the system. The fourth property of the network topology is the clustering coefficient, which is defined as the probability of two banks being exposed to each other, if both of them are exposed to a common third bank. A high clustering coefficient, similar to the average path length, indicates a well-connected interbank system where banks distribute liquidity widely in the system. In times of distress, however, a high clustering coefficient increases the risk of the joint failure of banks. In Figure B the average path length (left axis) and clustering coefficient (right axis) are shown.

Figure B Average path length and clustering of the South African overnight interbank market



The short average path length and high clustering coefficient of the South African interbank system vary little over time, indicating a stable network structure. This was true even during the time of high volatility and distress in international financial markets in September and October 2008. These results are in line with the findings of Brink (2009) stating that the direct impact of the financial crisis of 2007/08 on the South African interbank market was modest.

## The systemic importance index for South African banks

While the results above are measures of the overall network topology, a more detailed view of individual banks is needed to assess their individual systemic importance. The Financial Stability Board proposes three key criteria to determine the systemic importance of markets and institutions, namely (i) *size* (the volume of financial services provided by the individual component of the financial system), (ii) *substitutability* (the extent to which other components of the system can provide the same services in the event of a failure), and (iii) *interconnectedness* (linkages with other components of the system). These measures can be translated into measures from network theory.

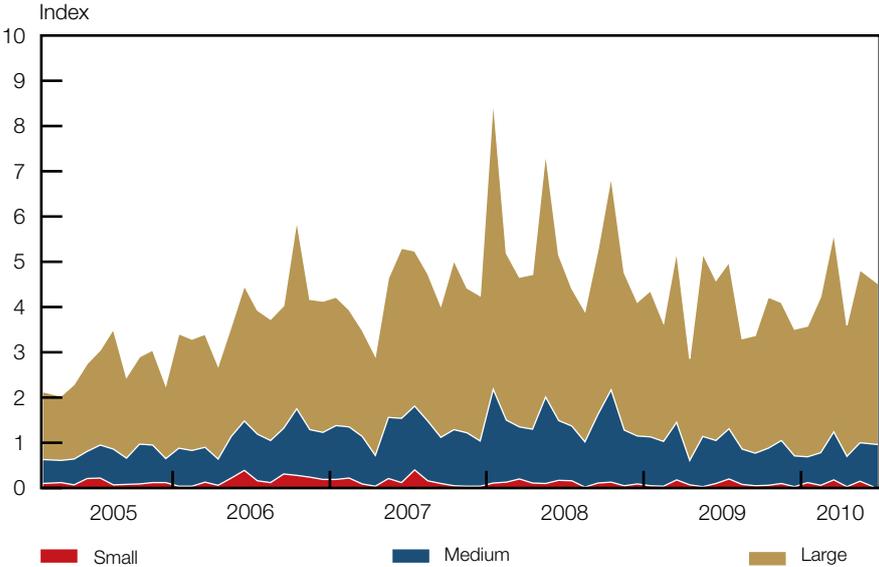
To assess the systemic risk that is associated with a given bank, one has to look at the impact that a default of this bank would have on the rest of the system. In case of insolvency, the size of the failing bank's interbank liabilities will determine its immediate impact on other banks. The second variable to assess the systemic risk associated with a given bank is its interconnectedness. As in the case for interbank liabilities, the impact of a shock will be larger if the bank is more connected to the rest of the system. In terms of a network measure it is therefore the number of edges that originate from somewhere in the system and end at the given bank that contributes to systemic importance. In network theory this is referred to as the 'node in-degree' of the bank. The most complicated measure, however, is a bank's substitutability. A bank will be difficult to substitute if it receives and originates a large amount of interbank funding. It will therefore be harder to substitute if it is in the middle of many interbank payment flows and its systemic importance will increase, the harder it is to substitute. The network measure that can be associated with this property is a node's 'betweenness'. It measures the number of shortest paths between any other two nodes in the network that pass through the node in question. The more shortest paths that pass through a given node, the more interbank funding flows pass through this bank and the harder it will be to substitute.

In order to construct the systemic importance index from these three measures, every measure was normalised to assume a value between zero and one. The network systemic importance

index (NSII) of any given bank is then the sum of the three submeasures. To account for the fact that the total interbank volume changes over time, the NSII was multiplied with the actual volume of interbank exposures and normalised by the total exposures for the first measurement point, which is March 2005. The NSII will thus measure the systemic importance of individual banks for every month from March 2005 to June 2010. Note, however, that it is a relative measure and will only give the systemic importance of one bank with respect to another bank.

The results for the NSII of three groups of South African banks are shown in Figure C. The first group consists of “large” banks and includes all banks that had a network systemic importance index of  $NSII \geq 2$  in June 2010. Banks with  $0,5 \leq NSII < 2$  are classified as the “medium” group. All other banks are defined as “small”.

**Figure C** Network systemic importance index (NSII) for South African banks<sup>1</sup>



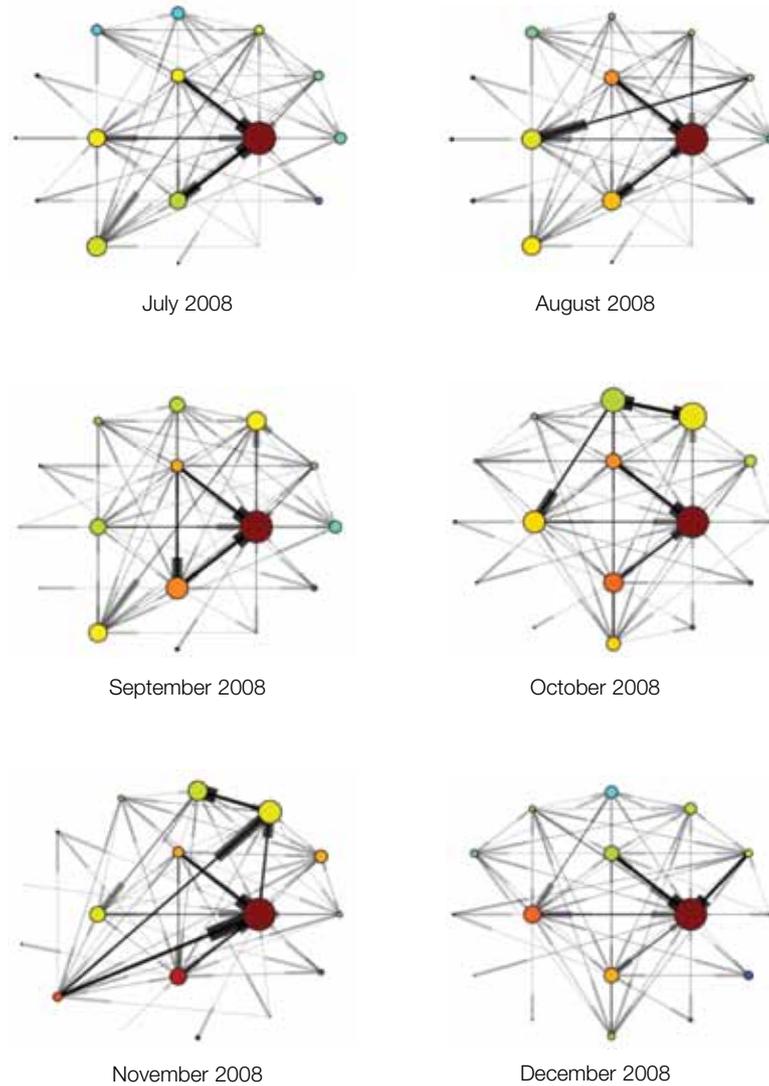
<sup>1</sup> The NSII shown is normalised by the number of banks in each of the three groups  
 Source: South African Reserve Bank, SAMOS data

The NSII has remained approximately constant over the period under investigation. This indicates a stable network structure during the whole period where the large banks contributed about two thirds (66 per cent) to overall network systemic importance.

It is also instructive to display the structure of the interbank network in order to get a better understanding of what low/high network systemic importance means. The structure of the interbank market is displayed for the period of July 2008 to December 2008 (see Figure D), when the turmoil on the international financial markets was at its highest. The size of each node reflects the size of a bank in terms of interbank exposure. The colour of the nodes is an indication of their interconnectedness and ranges from blue (little interconnectedness) to red (highly interconnected). The size of the edges is a measure of the exposure between two banks. A thicker line indicates higher exposure. Edges go from the small end to the thick end.

During the period under review, there was one bank that had a significantly high systemic importance in terms of size, interconnectedness and betweenness. This situation is not alarming, since the systemic importance of a bank itself is not related to the default probability of this bank. During the entire crisis period, there was a well-connected interbank system with large liquidity flows inside the system. These flows are signs of trust among the South African banks and a signal that South African banks were doubtful about foreign banks during the period under review. It is, nonetheless, desirable not to have a too-high NSII, to help ensure that the system remains resilient should a shock hit the South African interbank market.

Figure D Network topology of the South African interbank system



Source: South African Reserve Bank, SAMOS data

## Conclusion

Applying a network model to assess the interlinkages and systemic risk in the South African interbank market reveals that there is a relatively high degree of participation and interconnectedness between banks participating in SAMOS. This makes the system efficient as a liquidity distribution mechanism during times of financial stability, when the interbank market functions well. Even during the height of the global financial crisis, the South African interbank market continued to function smoothly and the normal pattern of interbank transactions was maintained.

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## Abbreviations

AGR	augmented Guidotti ratio
Alsi	All-Share Index
BCM	business continuity management
BER	Bureau for Economic Research
CBOE	Chicago Board of Options Exchange
CBPL	continuous batch processing line
CDS	credit default swap
CFVI	consumer financial vulnerability index
CMIRR	Capital Markets Infrastructure Risk Ratings
CPL	continuous processing line
CRB	Commodity Research Bureau
CSD	central securities depository
ECB	European Central Bank
EFSF	European Financial Stability Facility
EME	emerging-market economy
ESF	European Stability Facility
ETF	exchange-traded funds
EU	European Union
FAO	Food and Agriculture Organization
FDI	foreign direct investment
FNB	First National Bank
FSB	Financial Services Board
FSC	Financial Stability Committee (of the Bank)
G-20	Group of Twenty
G-30	Group of Thirty
GDP	gross domestic product
GR	Guidotti ratio
ICP	Insurance Core Principles
IEMP	index of exchange market pressure
IIF	Institute of International Finance
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
JSE	JSE Limited
MENA	Middle East and North Africa
MPC	Monetary Policy Committee
MSCI	Morgan Stanley Capital International
NCA	National Credit Act
NSII	network systemic importance index
NT	National Treasury
OTC	over the counter
QE	quantitative easing
QIS	Quantitative Impact Study
RICS	Royal Institute of Chartered Surveyors
ROSC	Report on Observance of Standards and Codes
RTL	real-time line
SADC	Southern African Development Community
SAM	Solvency Assessment and Management
SAMOS	South African Multiple Options Settlement
SDA	segregated depository account
SFIDvP	simultaneous, final, irrevocable, delivery versus payment
SIFI	systemically important financial institution
SMP	Securities Markets Programme
SOR	securities ownership register
SRO	self-regulatory organisation
Strate	Strate Limited



TCF	Treating Customers Fairly
UK	United Kingdom
Unisa	University of South Africa
US	United States
VIX	CBOE Volatility Index

## Glossary

the Bank	South African Reserve Bank
the Basel Committee	the Basel Committee on Banking Supervision
the Core Principles	the Basel Core Principles
the Minister	the Minister of Finance
the Securities Act	Securities Services Act, 2004 (Act No. 36 of 2004)
US Fed	United States Federal Reserve System