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**Why money matters –  
the financial crisis and the South African economy**

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# Why money matters – the financial crisis and the South African economy

- Andrea Saayman -

## Introduction

The years 2008 and 2009 were by no means “normal” years in the world economy. Instead, it marked the first worldwide economic crisis in the 21<sup>st</sup> century that caused all the major developed economies in the world to achieve negative economic growth rates for the first time in more than 70 years, and all economists to scatter to the library to brush off old textbooks on how to react to signals of depression. The crisis also showed a number of other noteworthy things to the world, among which I would include the following: (i) how integrated all the developed economies have become, (ii) how dependent economies are on growth in the developed economies, (iii) how certain economies showed more resilience to the crisis and continued to grow strongly, and (iv) how macroeconomics failed to predict the crisis.

Given that I am a macroeconomist facing the biggest event in economics since stagflation, as well as this last premise that theory has failed to predict the crisis, I felt myself obliged to talk about the financial crisis in this lecture. And while there is a number of avenues that can be taken to explore the financial crisis, I intend to focus on the theoretical deficiencies that urged 2008 Nobel prize winner, Paul Krugman, to state that much of macroeconomics over the past 30 years have been “spectacularly useless at best, and positively harmful at worst” (Anon., 2009a).

But firstly I will present a brief background on the financial crisis, followed by an analysis of the effect of the crisis on the South African economy. This will be followed by an overview of the theory of macroeconomics that everyone believed in, and which brought the science into disrepute. Finally, the influence of asset prices, credit extension and monetary policy on the real economy are analysed before I will conclude.

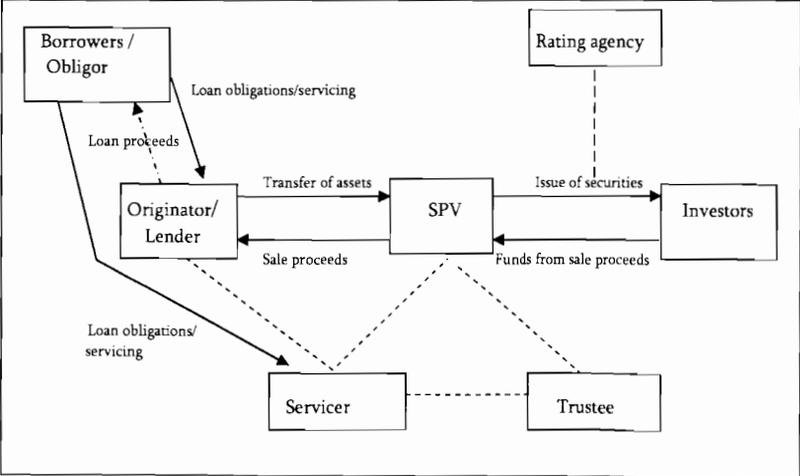
## A brief background on how it all started

I will start at the beginning. The housing credit market collapsed in the United States of America (USA) during the Great Depression, and in an attempt to start a secondary mortgage market, the National Housing Act was proclaimed in 1934. The Act saw the creation of the Federal Housing Administration (FHA) to insure loans made by private investors and made housing credit less risky. The FHA established the Federal National Mortgage Association (Fannie Mae) in 1938, to buy and sell federally insured mortgages, but less than five percent of all mortgages were sold on the secondary market by the early 1960s. Fannie Mae was split into two corporations, a privately-owned Fannie Mae and a new federal

agency called the General National Mortgage Association (Ginnie Mae) (Feeney, 1995 and Elmgren, 1995). In 1970, the Federal Home Loan Mortgage Corporation (Freddie Mac) was established and it became a private corporation in 1989 (Hayre *et al.*, 2001). Ginnie Mae issued securities to finance a fordable mortgages already in 1968 and these securities were backed by the “full faith and credit” of the US government (Mizen, 2008). Freddie Mac was the first to successfully issue mortgage-backed securities in the late 1970s through a financial engineering process referred to as *securitisation*, followed by Fannie Mae. By the early 1980s, securitisation became the primary funding vehicle for mortgage lending in the USA (Ranieri, 1996).

Securitisation is a process through which a large number of similar loans or assets are pooled. These assets are then sold to a special purpose vehicle whose main purpose is to buy these loans and to finance the purchase by issuing securities in the market to a number of investors. These securities are referred to as mortgage-backed securities or asset-backed securities, since the investors are repaid from the funds received from the pool of assets. Thus, all funds received on the mortgage are now forwarded to the special purpose vehicle, which uses the funds to make payments to investors (Saayman, 2002). A rating agency assigns a credit rating to the securities and this provides a view of the credit risk of the security to the investor. In addition, a servicer is appointed, which provides administration for the duration of the issue, while a trustee is appointed to protect the interest of the investors (Saayman & Styger, 2003). A typical securitisation process in indicated in Figure 1.

Figure 1: Securitisation Process



Source: Saayman and Styger, 2003

What makes securitisation different from any other market-related lending is that the originators of the loans are treated as being separated from the value of

the securities, with limited recourse to the originators. Thus, the credit rating should only reflect the credit risk of the underlying assets, and additional layers of safety should provide protection to investors. Since there is limited liability to the originator, securitisation means that the risk taken by one institution is now transferred to a number of investors.

This clearly has its advantages, but also its disadvantages. On the positive side, Alan Greenspan (1999) praised the mortgage-backed securities market in the US for keeping residential mortgage credit from collapsing when house prices declined and banks experienced difficulties in the 1990s. The development of securitisation made the financial system more flexible to handle a financial crisis, since credit markets may be accessed in case of bank liquidity dry-outs. Greenspan concluded that “diversity within the financial sector provides insurance against a financial problem turning into economy-wide distress...”. On the other hand, we have now also seen that the effect of a crisis in the asset-backed market has widespread implications due to the risk that was spread. In the words of the Commission on Growth and Development (2010) “New financial instruments have knotted financial institutions into a complex network.”

Why have so many institutions and countries invested in these securities? There are several reasons of which three will be highlighted: Firstly, since there is quite a number of mortgages or assets in the pool that serve as the collateral for the loan, sufficient diversification impacted positively on the credit risk grading assigned to these securities. And while the earlier mortgage-backed securities issued by the state-sponsored agencies, such as Freddie Mac and Fannie Mae, had no default risk due to government backing, the private mortgage-backs had substantial default risk (Mizen, 2008). However, private mortgage originators enjoyed the same benefits derived from the reputation of these state-sponsored companies, although many of their mortgages were not of the same quality. Therefore, there occurred gross mispricing of these assets as they were disguised as low risk asset, but with yields higher than similarly rated ‘vanilla’ bonds, due to their structural complexity.

Secondly, more exotic types of securitisation occurred in the form of collateral debt obligations (CDOs). CDOs are debt obligations that are backed by a variety of loans and assets, with varying degrees of risk and maturity. This made it even more difficult to determine the correct risk associated with the security and thus to price the risk correctly.

Thirdly, the net savers of the world – Japan, Germany and a number of emerging economies that were battered by crises in the 1990s – searched for new investment opportunities. Asset- and mortgage-backed securities proved to provide just that after the collapse of the information technology market and due to the low interest rate environments that reigned in most countries. These low interest rates sparked investment in interest-sensitive sectors, such as vehicles and housing, and subsequently caused house prices to rise sharply (Rajan, 2009).

The crisis was therefore pre-empted by a significant increase in asset prices – most notably, those of property. The boom in house prices encouraged the growth in mortgages, especially in the USA. However, at the end of 2006, the property cycle turned and banks and financial firms exposed to mortgages and mortgage-related securities, realised losses on their investments (Bullard *et al.*, 2009). The asset bubble created in the housing market in the USA therefore burst, and together with bad mortgage-lending practices, caused the first financial crisis of the century.

According to Mizen (2008), the first signs of financial distress occurred in February 2007 in the USA, when lower quality mortgage lenders experienced problems. A number of these low quality mortgages – referred to as sub-prime mortgages that are offered to people with a poor credit history at a higher cost – have defaulted, and in April 2007 a sub-prime specialist – New Century Financial – filed for bankruptcy. This was followed by the closure of the Swiss-owned bank, UBS, Dillon Reed hedge fund after losses in the sub-prime mortgage market, and Moody's that announced the review of the securities of 21 US sub-prime mortgage securitisations. In June of that year, Bear Sterns supported two failing hedge funds, and in August, German Bank IKB and French bank BNP Paribas closed hedge funds due to sub-prime losses. This saw the onset of the “credit crunch”, characterised firstly by a shortage of liquidity in money and capital markets that affect credit availability between banks, and the subsequent moderation of credit supply.

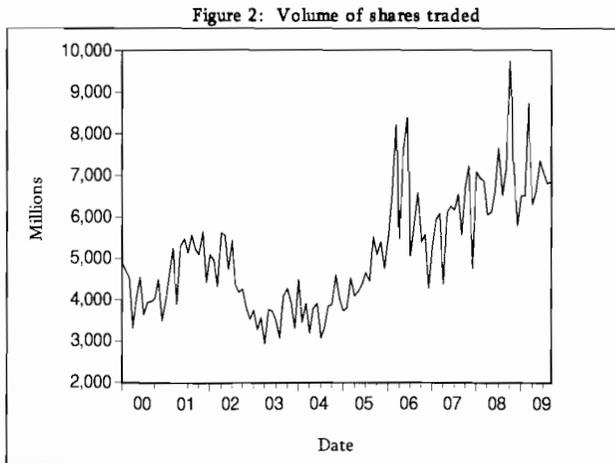
And while banks started hoarding cash in order to improve their liquidity positions worldwide, the inter-bank markets tightened due to the credit crunch. Banks that were funding long-term assets through short-term liabilities experienced the pain first, with the United Kingdom (UK) bank, Northern Rock, taking the first fall, followed by the US bank, Bear Sterns. Before the crisis reached its peak with the failure of Lehman Brothers in September 2008, Freddie Mac and Fannie Mae already received financial support from the US government, while governments in Germany, Switzerland, the Netherlands and Belgium also had to step in with bank bailouts (Strydom, 2009 and Mizen, 2008).

Liquidity dried up in the markets and funds were provided on a large scale by central banks worldwide in order to keep the financial system afloat. These capital injections, government guarantees of bad debt and cleansing of bank balance sheets have sparked debate on too-big-to-fail firms, regulation and moral hazard (Zamil, 2009). However, the credit crunch influenced funding not only to financial institutions, but also to companies, and the real sector contracted causing a loss in employment, undermining confidence and fuelling a reduction in demand and the subsequent fall in economic activity (World Bank, 2009).

## Analysing the effect it had on the South African economy

While South Africans have not seen the major bailouts of banks that countries such as the USA, UK and Germany experienced, the country has not escaped the effects of the financial crisis. South African banks were mostly sheltered from investments in sub-prime securities due to foreign exchange restrictions, with Investec, through its exposure to the UK sub-prime lender Kensington (Rose & Theobald, 2007), and ABSA through its Barclays link, taking some strain.

However, the international drain of liquidity after the fall of Lehman Brothers also affected the South African money and capital markets and the availability of finance dried up. The capital flight from emerging economies in a search for safety also affected South Africa, and this 'financial channel' through which the crisis affected other economies became visible very quickly. The capital market became increasingly volatile during this period, as shown in Figure 2, with the volume of shares traded fluctuating substantially since the onset of the financial crisis. Foreigners withdrew funds from the South African markets in the flight to safety and sales of bonds and shares exceeded purchases by approximately R50 billion, as illustrated in Figure 3. Not only has there been volatility, but also a substantial loss in value in the capital market with the industrial index losing 27% and the all-share index losing 41% of its value between June and November of 2008.

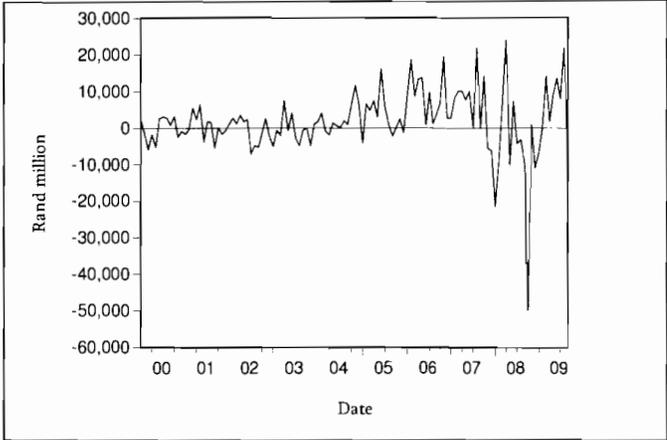


*Source of data: SARB*

The volume of securitisation transactions has also been affected in South Africa. While our securitisation market is small compared to that of the USA and European countries, it has shown huge growth during 2007 and 2008, especially in mortgage-backed securities and asset-backed securities backed by instalment sale

and leasing finance. Strydom (2009) reports that the first mortgage-backed securities in South Africa that resemble the sub-prime mortgages in the USA were issued by Standard Bank in 2007 and that the total value of the transaction amounted to R2,4 billion. In that same year, more than R30 billion worth of asset- and mortgage-backed securities were issued by private banks in South Africa. However, the issuance of new asset-backed securities totally dried up in 2008, and only a small amount (less than R2 billion) of mortgage-backed securities were issued (SARB, 2009a).

Figure 3: Net purchases of bonds and shares by foreigners



Source of data: SARB

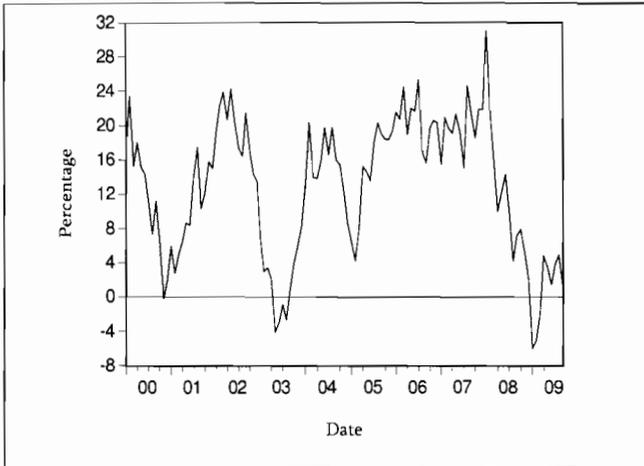
Figure 4: Percentage change in credit to domestic private sector



Source of data: SARB

The dramatic change in the liquidity in the economy not only affected the money and capital markets, but also financial institutions and the private sector of the economy. This can be seen in Figure 4, which shows the dramatic turnaround in the growth rate of credit extension to the private sector by monetary institutions in South Africa. Banks tightened credit extension in an attempt to remain liquid, since the liquidity in the markets was tight, and there was a widespread flight to cash – as *The Economist* (Anon., 2009b) put it, “a furious dash for cash”. These actions influenced the growth in money supply according to the narrow definition (notes, coins and demand deposits in circulation), from a more than 31% in January 2008 to -6% in January 2009, as is shown in Figure 5.

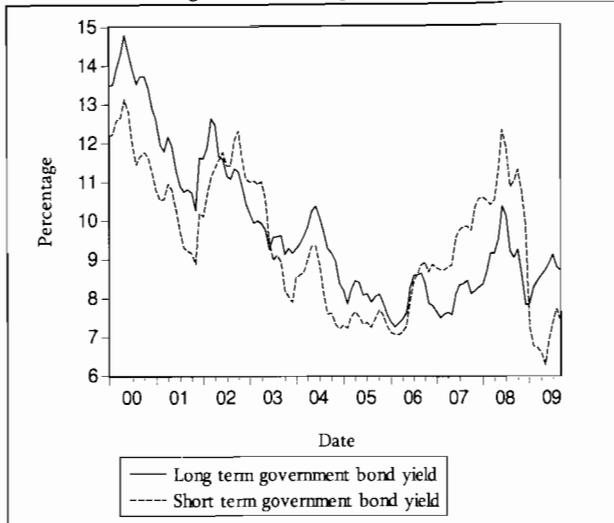
Figure 5: Change in the M1 money supply



Source of data: SARB

In terms of interest rate movements, the repurchase rate offered to banks by the South African Reserve Bank (SARB) reached its lowest level of 7% in April 2005 until June 2006, after which it started to increase steadily to counter the inflationary pressures that the country experienced. A high of 12% was reached in June of 2008. Together with the increase in inflation, both the short- and long-term yield on government bonds started to increase in order to retain a positive real interest rate in South Africa (see Figure 6). The financial crisis, however, caused a decline in world demand and alleviated pressures on resources, which led to a decline in inflation. Given the decline in world demand and the turnaround in inflation due to the financial crisis, expansionary monetary policy started in December of 2008 with a 50 basis points decline in the repurchase rate. By August 2009, the repurchase rate was back at its lowest level of 7%, and both long-term and short-term government bond rates followed a similar pattern (see Figure 6).

Figure 6: Yield on government bonds

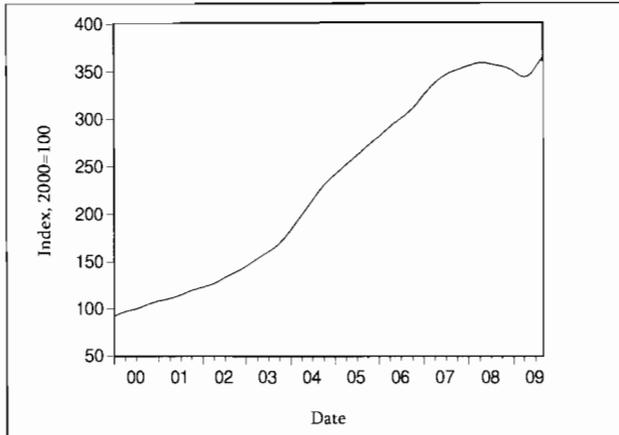


Source of data: SARB

The stock market was also not the only asset market in South Africa that was influenced. House prices declined steadily from the middle of 2008 to mid-2009, before the trend turned around. The exponential growth in house prices that South Africans experienced between 2003 and 2007, as well as the slowdown of growth and the subsequent fall in house prices, are clearly visible in Figure 7. Many argued that we were not experiencing an asset bubble, but rather a catch-up to the rest of the world in terms of house prices. As such, the consensus in 2007 seemed to be that the housing market would not be influenced by the decline in house prices experienced in the USA and other developed economies (Radebe & Fife, 2007). However, South African house prices were affected by the financial market turmoil, as is evident from the figure.

The turmoil in the financial markets was not contained in the monetary side of economies worldwide, and led to a global recession in the real sector. Developed economies, including the USA, UK and Europe, saw a decline in real economic activity as economic growth slipped below 0% by the last quarter of 2008. These economies remained in a recession throughout 2009, with negative growth rates reaching -5%. It was also the first time since World War II that world output declined (World Bank, 2009).

Figure 7: ABSA house price index

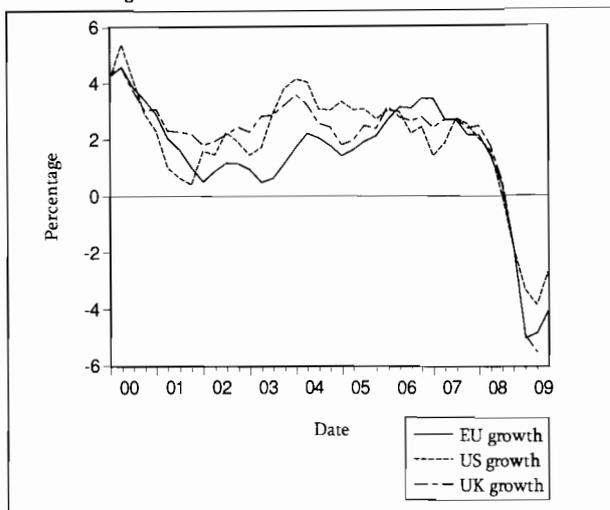


Source of data: ABSA

Less developed economies did not escape the negative real effects of the financial crisis and the World Bank (2009) predicted that the producers of capital goods in the world would be hit hardest by the global recession, via the so-called 'trade channel'. These include countries in Eastern Europe and Central Asia, who saw a decline in industrial production of more than 20% since the onset of the crisis. However, the crisis also had long lasting implications for other developing countries due to a decline in the demand for and price of commodities, which is typically exported by these countries, as well as the decline in foreign investment, foreign aid and remittance flows. The effect on the poor and vulnerable is huge, and while developed countries are showing signs of recovery, the economic climate in many developing countries continues to dwindle (Naudé, 2009).

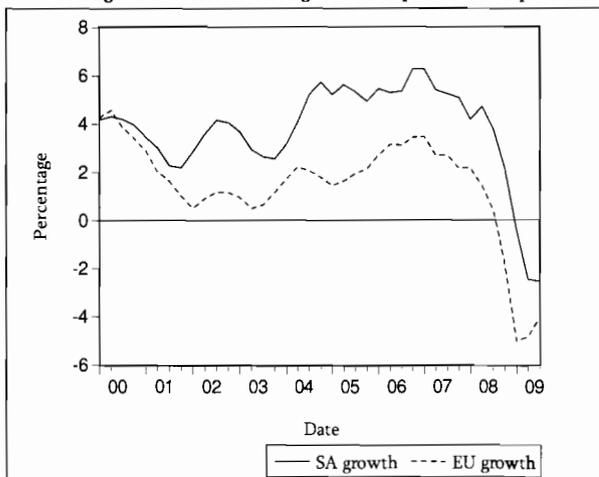
The real side of the South African economy was also not spared, and the country slipped into a recession in the last quarter of 2008 – the first in a decade. Figure 9 shows the decline in the economic growth rate in South Africa compared to Europe and it is evident that the South African economy followed developed economies, such as the European economy, quite closely. South Africa's economy contracted by approximately 2.5% in the second and third quarters of 2009, before turning to positive growth territory in the last quarter of 2009. The sharpest contraction occurred in the manufacturing industry, which reported a decline of more than an annualised rate of 20% in the fourth quarter of 2008 (SARB, 2009a), while the mining sector also experienced a contraction due to a decline in international demand.

Figure 8: Growth rates of the UK, USA and Europe



Source of data: IFS

Figure 9: South Africa's growth compared to Europe's



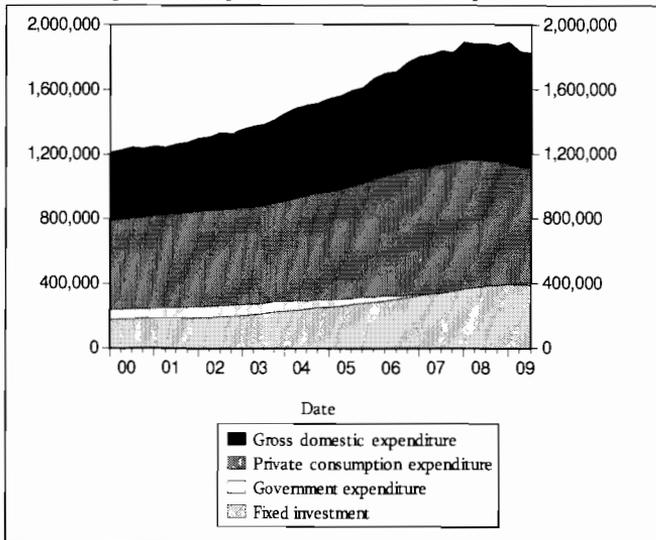
Source of data: IFS

A decline in production worldwide meant a loss in employment opportunities, and unemployment in the USA almost doubled from 5% to just below 10%. Europe's unemployment also increased to just below 10%, while unemployment in the UK touched 8% by the end of 2009 (SARB, 2009c). In South Africa, private

sector unemployment increased, but total unemployment figures were softened by an increase in public sector employment. Job losses were especially severe in the manufacturing, financial services and trade and accommodation industries. Yet all industries, except electricit supply, have shed jobs. The SARB (2009b) reports that employment has shrunk by almost 205,000 in the first half of 2009 and that the economy now provides employment opportunities for only 8.3 million people. The official unemployment rate has increased by 1.3 percentage points from 23.2% to 24.5% by the end of 2009.

Which spending components in the South African economy were most affected by the financial crisis? Figure 10 shows that spending in South Africa consists mainly of private consumption expenditure by households (60% of gross domestic expenditure), followed by fixed investment spending and government spending, which is both approximately 20% of gross domestic expenditure (GDE). From the third quarter of 2008 up to the third quarter of 2009, GDE contracted by approximately 3.2%. This was mainly due to the 4% decline in private household consumption, since both fixed investment and government spending continued to increase with fixed investment showing a slight decline in the third quarter of 2009 relative to the previous quarter. The decline in consumption also caused firms to reduce their inventories and this substantial reduction in inventories had the subsequent negative effect on manufacturing and other producers in the South African economy.

Figure 10: Components of Gross Domestic Expenditure

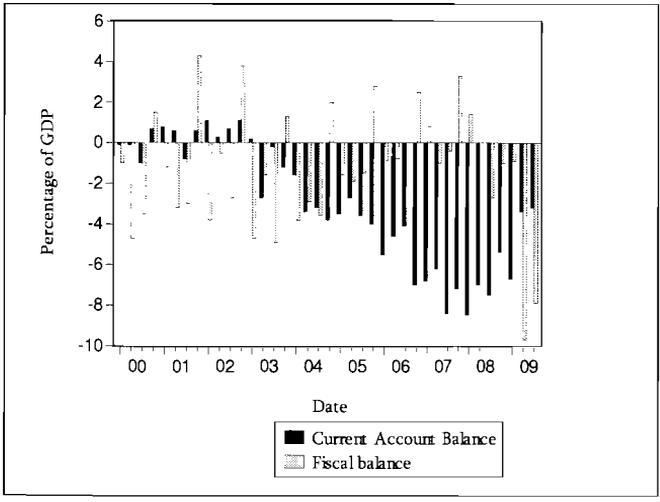


Source of data: SARB

As expected, international trade between South Africa and the rest of the world was notably affected, with both imports and exports declining sharply. This saw a decline in the deficit on the country's current account to 3.2% of GDP compared to 7.5% of GDP in the third quarter of 2008. However, while the deficit on the current account of the balance of payments became more controllable, the increase in government spending and the reduction in tax receipts due to the income contraction associated with the financial crisis, caused the surplus on the government budget experienced during 2006 and 2007 to turn into a deficit quickly (see Figure 11).

The 4% growth in government expenditure during 2009, but the decline in tax receipts, clearly shows towards expansionary policy in order to stimulate the economy. This is not only true for South Africa, since growing fiscal deficits have become a point of concern in many of the developed countries, including Britain, the USA, Greece, Spain and Portugal.

**Figure 11: Fiscal and current account balances as a percentage of GDP**



*Source of data: SARB*

With the most expansive monetary and fiscal policies that we have ever seen applied in the USA and Europe, most of the global economy showed signs of economic revival in the last quarter of 2009 (SARB, 2009b). And while growth in the emerging Asian economies is again strong, the adverse effect of these expansionary policies on capital flows to less developed countries suggests that not all countries would recover quickly from the crisis (Naudé, 2009).

## Some thoughts on the failure of macroeconomics

Clearly, the events in the financial markets of the USA had widespread consequences for both the South African and other economies worldwide. And this leads again to the question why the crisis was not foreseen by many macroeconomists and policy makers<sup>1</sup>. Has macroeconomics failed? Again, the beginning of macroeconomics is the starting point.

While Adam Smith is regarded as the father of Economics, the separate study areas of macroeconomics and microeconomics only became apparent after the publication of *The General Theory of Employment, Interest and Money*, by John Maynard Keynes in 1936. Macroeconomics is typically defined as the study of the economy as a whole, investigating the problems of growth, employment, inflation and economic cycles, and modern macroeconomics evolved based on Keynes' work.

Keynes reacted to the theories of the Classical economists who believed that the economy will always be at full employment and, if not, demand and supply will interact to ensure that prices adjust and full employment is restored. For the Classical economist, understanding the forces that influence the supply of goods and services in the economy, was paramount and dominated thoughts. However, the Great Depression of the 1930s saw economies moving away from full employment for a substantial period of time and showed no intention of returning to levels of full employment. Against this backdrop, Keynes proposed the active intervention of governments in the market in order to stimulate the demand for goods and services – the so-called demand-management strategies.

White (2009) concludes that one of greatest achievements of Keynes was the establishment of a framework that allows the simultaneous determination of a number of economic variables, including output, interest rates and prices. This formed the backbone of macroeconomic models used today in policy decisions. Already in 1990, Gregory Mankiw mentions that the Keynesian models augmented by the expectations-adapted Phillips curve are still the main tools used by business and government and that the “theoretical developments ... have had little impact on applied macroeconomics”. Yet, he continues to explore how the theory itself has evolved. There thus seems to be a distinction between macroeconomic theory and macroeconomic practices, and this was again pronounced during the recent financial crisis.

Some of the most popular models currently used include dynamic stochastic equilibrium models of the economy, which are based on the Keynesian framework and include wage and price rigidities as well as rational expectations (White, 2009). Rational expectations imply that all economic agents base their expectations about the future on all available information and therefore adjust

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<sup>1</sup> It has to be mentioned that there were some lone prophets who have warned that a crisis is looming and that not everyone was fooled (see for example the list in Naudé, 2009).

their actions rationally (Mankiw, 1990). The effect of rational expectations on empirical and policy results was startling, with Sargent showing that the effect of a change in money on economic activity would then only be temporary. Thus, by assuming rational expectations, the effect of money on output in the economy has no lasting effect (Blanchard, 2000).

The Keynesian models have also been criticised for their inability to forecast turning points in economic activity – even Keynes was sceptical about the forecasting ability of such models, since they do not account for economic behaviour, which is often guided by “animal spirits” (as Keynes called it) and sharp changes in behaviour (White, 2009).

However, the sharpest critique has come from the fact that there is a lot of concern about modelling the prices of goods and services, while asset price formation is neglected (Anon., 2009b). Asset prices are assumed to be formed according to the efficient market hypothesis (EMH), developed by Eugene Fama in 1970. The EMH postulates that the price of an asset reflects all the information that is available and relevant to its price. Therefore, it logically flows that financial markets would always price assets correctly – thus there is no such thing as asset bubbles – and that it is impossible to beat the market. However, the 1987 stock market crash in the USA was a clear sign that the market is not always efficient and academic economists have examined the flaws in the EMH. Behavioural economists in particular have been studying human tendencies to contribute to asset bubbles, by investing as if the same trend will always continue in the market. They postulate that investors’ irrational behaviour when the market changes then contributes to the fall in prices – the bursting of the bubble (Anon., 2009c).

In addition, little provision is made for the role of financial institutions in modern macroeconomic models. Although banks are seen as the creators of money in the economy, they are not included in an analysis of how prices and interest rates are determined. In fact, banks are not included in most DSGE models, since it complicates the models significantly (Anon., 2009b).

One person who has studied the role of financial institutions in the economy is Hyman Minsky (1982). Minsky built on Irving Fisher’s ideas of 1933. Fisher explains that an upswing in economic activity is caused by profitable opportunities in the economy, which encourage more investment, rising prices and speculation. This is accompanied by an increase in debt finance, which increases money supply and prices. At some stage, ‘over-indebtedness’ is reached and economic agents cannot repay their debt, which causes a frantic sale of assets, price declines, bankruptcy and thus a decline in economic activity (Bordo *et al.*, 2003).

In the same line as Fisher, Minsky identified stages of credit provision that threaten the existence of banks. According to Minsky, the last stage of credit provision is characterised by loans that are made to repay interest on other loans, and as soon as lenders recognise their mistakes, they would mistrust other lenders

as well. This concern about the solvency of other lenders then leads to credit creation that is brought to a standstill, with serious consequences to the real sector of the economy (White, 2009).

It is therefore evident that the models applied by policy-makers today are based on some simplifying assumptions and that these assumptions are rarely believed by economists. However, it is the simplicity of the models that makes it easy to apply and understand, and thus influence policy and practice (Anon., 2009b). And naturally it takes a model to beat a model. Blanchard wrote in 2000 the following about the Asian crisis of the 1990s “Macroeconomists did not predict either the time, place, or scope of the crisis. ...So when the crisis started, macroeconomic mistakes ... were made. But, fairly quickly, the nature of the crisis was better understood, and the mistakes corrected. And most of the tools needed were there to analyze events and help the design of policy ...”.

Does it then mean that macroeconomics has failed this time and also during previous crises? Maybe the words of *The Economist* (Anon., 2009a) describes it best when stating “Economics is less a slavish creed than a prism through which to understand the world. It is a broad canon, stretching from theories to explain how prices are determined to how economies grow.”

### **Credit extension, asset prices and monetary policy**

In 2000, Olivier Blanchard wrote that macroeconomists should be concerned about imperfections that may be the source of new shocks to the economy. He mentions, for example, bank runs and how they influence not only money supply in the short run, but that they may have a long-lasting effect on output due to the malfunctioning of the financial system. Fluctuations in economic activity caused by credit crunches and liquidity problems used to dominate early discussions of the causes of business cycles, but again he notes that the Keynesian framework neglected these issues.

Instead, the standard practice is to explain monetary policy without even mentioning monetary aggregates, and money supply accommodates money demand perfectly. But Favara and Giordani (2009) show that shocks to monetary aggregates, which are neglected by the current Keynesian framework used in modelling policy decisions, do play an influential role in determining the future paths of prices, output and interest rates in the economy. Thus, money does matter.

In general, an analysis of credit requires a distinction between lenders and borrowers in any economy. Borrowers base their decision on how much to borrow on the value of their assets. A similar decision is faced by lenders. Since intermediaries act between lenders and borrowers, the value of their assets also matters in the credit decision. However, it is not only the value of assets that plays

a role, but also the distribution of income and wealth between lenders and borrowers (Blanchard, 2000).

And once one starts talking about financial imbalances, credit creation and asset prices in the economy, one returns to the Austrian school of economic thought, and more specifically to *The theory of money and credit*, written by Ludwig von Mises in 1912. The Austrian school of thought is fierce supporters of a market economy with no government intervention, since government intervention in the market only leads to distortions. In this line, von Mises argues that intervention of government in the credit-creating abilities of the financial system will cause imbalances over time that will end in an economic crisis (White, 2009). As such, he has predicted that the events preceding the 1930s would lead to widespread consequences for the economy – and the subsequent Great Depression was the result. He has always taken a fierce stand against Keynesian demand-side policies and wrote that “For the demagogue does not bother about the remoter consequences of his policies. He chooses inflation and credit expansion although he knows that the boom they create is short-lived and must inevitably end in a slump. He may boast of his neglect of the long-run effects. In the long run, he repeats, we are all dead; it is only the short run that counts. ... It seems statesmen and politicians have considerably over-rated the duration of the short run” (Von Mises, 1953).

More specifically, by keeping interest rates artificially low, people’s preferences are distorted and saving is sacrificed in favour of consumption. However, a decline in interest rates persuades an increase in capital spending (investment) and thus in borrowing. Since saving declines and borrowing increases, an imbalance is created that leads to a temporary increase in employment, wages and consumption. But there is not only imbalance in savings and loans – there is also imbalance in the real side of the economy, since unprofitable business expansions have been financed by the artificially low interest rates. The end result is, however, a credit contraction and even banking collapses (Spitznagel, 2009). Von Mises pleads for market forces to determine interest rates and no government intervention, since demand and supply interaction would quickly restore imbalances in the economy. If not, he states that the magnitude and duration of the catastrophe will be “... stronger, the longer the period during which the rate of interest on loans has been below the natural rate of interest and the greater the extent to which ... processes of production that are not justified by the state of the capital market have been adopted” (Von Mises, 1953).

In line with von Mises, Llewellyn already warned in 2006 about the global and financial imbalances that may have detrimental effects for financial stability. He refers, in particular, to the saving deficit in the USA – a notoriously consumer economy – and how foreign savings are financing both the US government and consumers. In addition, he comments that there is an atypical transfer of real production and goods from low-income countries (i.e. China) to high-income countries (i.e. the USA). He concludes that “... the policy process [must take] into

account the risk that financial markets might become unstable and that growth in the world economy could be seriously threatened if adjustment is eventually forced in a particular way" (Llewellyn, 2006).

There is also renewed research interest in the relationship between asset prices, credit and the real economy worldwide, which started after the Asian crisis of 1997/8. Khor and Kee (2008), of the Monetary Authority in Singapore, note that there are remarkable similarities between the current financial crisis and that of Asian countries, just about a decade ago. Both were preceded by abundant liquidity, imprudent credit expansion and a rapid increase in property and asset prices. And while asset bubbles are not new phenomena, they are extremely hard to control. How much policy contributed to the crisis and how policy-makers react to asset bubbles are themes that are currently being explored.

### *On house prices and the economy*

When considering asset prices in the economy, the prices of real estate (or houses) and prices of shares on the local stock exchange are generally considered. The stock market crash that pre-empted the Great Depression of 1929 to 1932, the notorious October 1987 stock market crash and the crash of the dot-com bubble in 2000 are all examples of asset bubbles in stock markets. Zhou and Sornette (2009) showed that there has also been a mini-crash in mid-June 2006 in the South African stock market (JSE). However, there has been a number of housing bubbles as well, with the most notorious probably the UK housing bubble of the 1980s.

Caballero and Krishnamurthy (2006) argue that the lower levels of development of emerging countries' financial markets and banking systems mean that their economies are prone to asset bubbles and that these economies experience consecutive periods of 'bubble-bust' dynamics. They cite a basket of Latin-American countries that experienced crises over the past two to three decades, as well as the South East Asian countries as examples. In many of these cases, the countries experienced both a decline in the price of shares as well as a decline in property prices, with Sarno and Taylor (1999) confirming the existence of stock market bubbles in the East Asian countries during the 1997/8 crisis.

Yet, it may be argued that house price bubbles are worse than stock market bubbles and that there is co-movement between international house prices and global business cycles. Based on research between the G-7 countries, the following conclusions are reached by Beltratti and Morana (2010): (i) house prices are influenced by both global macroeconomic shocks as well as 'pure real estate' shocks; (ii) there are bidirectional influences between house prices and macroeconomic variables, and while investment, consumption and output are influenced by house price shocks, the influence on investment is stronger than on the other variables; (iii) in general the effect of house price shocks on the macroeconomy is greater than that of stock market shocks, and (iv) shocks in

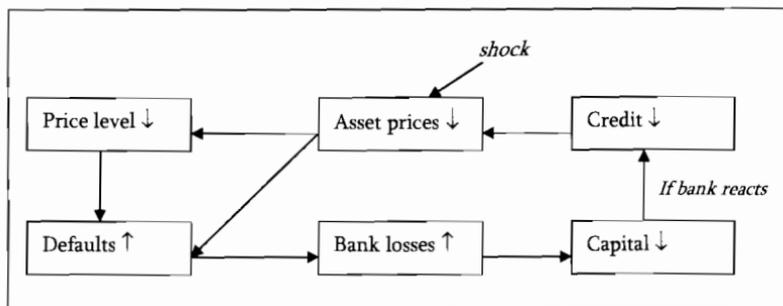
house prices tend to have a greater influence on the stock market than stock market shocks have on house prices.

The reason why house price shocks tend to hold far-reaching consequences for the economy was explored by, among others, Oikarinen (2009) and von Peter (2009). Both these authors cite the link between house prices and bank credit as the main reason for the importance of house price shocks to the macroeconomy.

Oikarinen (2009) shows that house prices are affected by the availability of credit, since an increase in credit extension leads to an increase in the demand for housing, which causes the prices of houses to increase. This is particularly true when households are facing a borrowing constraint prior to the increase in credit availability. But an increase in house prices increases the wealth of consumers, which again influences the credit growth due to the following three reasons: (i) the borrowing constraint of households diminish and they borrow more, since the value of their collateral (the house) increases; (ii) households' perceived lifetime wealth increases and this causes them to increase their current consumption relative to their saving, causing an increase in the demand for consumer credit, and (iii) banks become more willing to extend credit, since the increased price of houses improve their balance sheet positions. He finds two-way causality between house prices and house credit, as well as a positive effect of house prices on other consumer credit and concludes that this is likely to increase boom-bust cycles as well as financial system fragility.

Von Peter (2009) focuses directly on the link between asset prices and the banking system and illustrates the relationship as follows:

Figure 12: Asset prices and the banking system



Source: Von Peter, 2009

The model is based on an overlapping-generations model with banks acting as intermediaries to facilitate the intermediation process. The model starts with a firm that purchases commercial property (real estate) as a productive asset using bank credit. Bank assets thus consist of mortgages and their liabilities of household deposits.

In the next period, the firms sell their assets to a new generation of firms, but there is a shock that decreases the price of property (in von Peter's example, productivity declined, which caused the return on investment to decline and the price of property falls to take into consideration the decline in return on investment.) The old firms thus sell the assets at a loss and consumer spending tends to fall due to decrease in wealth. This causes prices to decline as well. When the decline in asset prices and the price level are sufficiently large, banks start to experience defaults, causing an increase in losses associated with loans. As a result of a decline in the value of assets and profits, bank capital decreases as well and a bank crisis occurs (von Peter, 2009). In response to the decline in bank credit, banks cut back on lending activities, since they find it increasingly difficult to obtain alternative sources of funds (Chen, 2001).

Von Peter (2009) continues by showing that when banks react by restricting credit, the situation worsens by causing asset prices to decline even further. Thus, the feedback from the banking system to asset prices and back again results in "spiral of credit contraction, falling prices and mounting losses", in other words, financial instability. Note that the effect of falling asset prices on the banking system depends on the magnitude of losses. Small losses only pass through the system, but large losses lead to constrained bank lending (i.e. credit crunches), or credit contractions (i.e. financial instability), which eventually causes banking crises when banks have weak fundamentals.

We can therefore conclude that bubbles in house prices are more damaging to the economy than stock market bubbles, and the reason for this lies in the link between house prices and the banking system – in particular, credit extension by the banking system. This theme is further explored.

### *On credit growth and the economy*

In addition to the increase in asset prices, the period preceding the current financial crisis was also characterised by a rapid expansion of credit. It was the period referred to as the 'Great Moderation' or 'Great Stability' with high economic growth and low levels of inflation in the developed economies that started in the late 1980s (Hume & Sentance, 2009). The period was characterised by a decline in volatility in many macroeconomic variables, including output, consumption and prices, and was dubbed 'The Great Moderation' by the Federal Reserve Governor, Ben Bernanke, in 2004 (Owyang *et al.*, 2008). The reason for this 'Great Moderation' was not certain, but some owed it to better monetary policy, others to pure good luck or less volatility in productivity shocks, and some suggest that financial innovation has contributed to this decline in volatility (Guerron-Quintana, 2009). Whatever the cause, many believed that the developed economies would never again experience economic declines to the proportions of the Great Depression and expansionary policies were at the order of the day.

Already in 2002, Borio and Lowe warned that excessive asset price growth accompanied by excessive credit growth will increase the likelihood of financial problems in a country, and that low inflation environments are breeding grounds for financial imbalances to occur. Hume and Sentance (2009) investigated the extent of the financial boom in 33 countries worldwide. They show that 15 countries were experiencing bank lending booms in 2007 – most of them developed (OECD) countries, but with South Africa and India included in the group. They also indicate that, compared to historical credit booms, the most recent boom was almost twice as long and mainly concentrated in advanced economies with the USA taking the lead. In addition to bank credit, Hume and Sentance (2009) show that there has been a growth in non-bank credit to households and firms since the mid-1990s, mainly in the USA.

They highlight the fact that the OECD countries, where the credit boom was mainly concentrated, experienced an era of low interest rates, an increase in firstly equity prices and then house prices, as well as a stronger currency and a deterioration of the current account balance. And while the inflation environment remained low, what is surprising is that these countries did not experience a marked increase in output growth. Instead, emerging economies, outside the OECD, experienced a high growth phase and inflationary pressures.

To answer the question how credit growth influences business cycles, one has to return to the ideas of Minsky, von Mises and the behavioural economists. However, the events preceding the current crisis also urge one to go beyond their thoughts and re-examine the magnitude of financial and production imbalances in the world economy, as explained by Professor Llewellyn (2006), as well as the role that monetary policy played.

On the financial side, the largest and richest country – the USA – is dissaving and their spending is financed by relatively poor emerging economies. While on the real side of the economy, manufacturing has shifted from the developed countries to emerging countries, with more than 50% of manufacturing now produced by the Asian countries. These countries therefore trade financial resources for real resources (Llewellyn, 2006). The credit growth in the developed economies has stimulated demand for assets, but also for products. These products are now supplied not by their local economies, but due to a loss of competitiveness, by the developing countries. Hume and Sentance (2009) contribute this loss in competitiveness to a number of factors, including (i) the increase in capital inflows that led to nominal exchange rate appreciations; (ii) trade liberalisation and trade agreements with China, and (iii) the policy of fixed exchange rates followed by many emerging economies. The end result was therefore not an increase in demand for local goods in the developed countries, leading to higher growth and inflationary pressure to correct the imbalance, but rather an increase in their current account deficit. On the other hand, the emerging economies experienced high growth and inflationary pressures with rising current account surpluses.

In terms of monetary policy, the previous Federal Reserve Governor, Alan Greenspan, decreased interest rates after the dot-com bubble in order to avoid the pending recession in the USA. This action – referred to as ‘The Greenspan Put’ – succeeded in keeping volatility in macroeconomic variables under control and created the impression that monetary policy would safeguard the economy against extreme fluctuations. However, it led to very low interest rates and a new wave of credit growth. It also created the environment for financial markets and investors to under-estimate macroeconomic risks and misjudge the risk associated with many financial assets, with the now-obvious consequences (Hume and Sentance, 2009).

Maybe it is again the correct time to quote Von Mises (1953) on the source of macroeconomic problems, “They are off-shoots of doctrines that ascribe to governments the magic power of creating wealth out of nothing and of making people happy by raising the national income. ... There cannot be any question of monetary reconstruction and economic recovery as long as such fables as that of the blessing of ‘expansionism’ form an integral part of official doctrine and guide the economic policies of the nations.”

#### *On policy reactions to asset prices*

Clearly the increase in asset prices as well as the growth in credit should have attracted the attention of policy-makers? But should policy react to asset prices? Alan Greenspan took a clear stance against this and proclaimed that it is firstly difficult to detect asset bubbles, and secondly, taking monetary action based on asset bubbles will negatively affect the real economy (Hayford & Malliaris, 2005). Bernanke and Gertler (1999, 2001) identify the practical problems with making policy decisions based on assets prices, and state that it would require knowledge of whether the price increase is driven by fundamental factors or non-fundamental factors.

Given that asset prices and credit growth have been notoriously associated with financial instability, the real question is rather whether central banks should be concerned with financial stability. The mandate of most central banks worldwide is to ensure price stability for their countries. Some also argue that price stability and financial stability are complementary objectives of a central bank (Bernanke *et al.*, 1999 in Bordo *et al.*, 2003). However, we have seen that low levels of inflation are breeding grounds for financial instability and therefore price stability does not necessarily mean financial stability. Kontonikas and Ioannidis (2005) reiterate that monetary authorities should decide whether they will react to asset prices proactively, or reactively. The current consensus worldwide seems to support the reactive approach, and this is consistent with the inflation targeting framework, also employed in South Africa, as well as the Taylor rule monetary framework, employed by the USA.

Gilchrist and Leahy (2002) provide the following reasons why monetary policy should not react to asset prices: firstly, asset prices are a poor forecaster of inflation; secondly, asset prices are more flexible than prices of goods and services and often move in the opposite direction of goods and services, making it impractical to add as a measure of the price level in an economy, and thirdly, although asset prices influence consumption and investment, they do not provide enough evidence to base policy decisions upon.

And while the policy stance in the USA is not to act proactively on asset price increases, research by Siklos (2008), Hayford and Malliaris (2005), and Hume and Sentance (2009) show that monetary policy actions have been instrumental in fuelling the asset booms during the Great Depression, the dot-com bubble and the recent financial crisis. As such, two research papers – one by Kantonikas and Ioannidis (2005) and another by Cecchetti *et al.* (2000) – have shown that by adjusting policy instruments based on the traditional inflation pressures and output gap together with asset prices, can improve both price stability and output stability in an economy. Thus, proactive monetary action based on asset price misalignments will provide a more favourable outcome to the economy than a reactive strategy. However, it may cause a slower return to the inflation target and therefore represents a compromise to central banks (Disyatat, 2009).

Inflation targeting, the current monetary policy framework employed by the SARB, together with other policy rules, such as the Taylor rule used by the Federal Reserve in the USA, allow for limited use of judgement and policy decisions based on asset price movements, or financial imbalances. In contrast, the approaches that give more attention to credit and debt movements, such as the policy implemented by the European Central Bank, provide more flexibility to adjust policy in reaction to unsustainable trends. However, it is advised that policy action based on financial imbalances should only be taken when (i) a bubble can be identified, (ii) the bursting of the bubble is expected to hold significant adverse effects for the economy, and (iii) it is expected that the imbalance can be solved through the policy action (Disyatat, 2009).

### **Concluding remarks on South Africa and the financial crisis**

In conclusion I would like to turn back to South Africa again. Given what we now know about asset prices, financial imbalances, credit growth and monetary policy, we can draw some conclusions on our economy's reaction to the financial crisis.

Firstly, in terms of financial imbalances, we have seen (see Figure 11) that South Africa had a substantial deficit on its current account of the balance of payments before the onset of crisis. Thus, we were importing more than we are exporting. In addition, the country has a low and falling saving rate, meaning that our spending is mainly financed by other countries that are saving. However,

unlike the USA, our fiscal government was not spending more than it collected in tax revenue.

We have also seen that South Africans had a growing demand for consumer goods, and private consumption expenditure grew steadily since 2000. The surge in consumer spending was accompanied by a growth in asset prices, with both the housing market and equity market experiencing a boom since 2000. The wealth effect of an increase in property and asset prices thus clearly played a role, with people increasing their demand.

In addition, the low interest rate environment made credit more affordable and loans to the private sector grew dramatically. This growth in asset prices, accompanied by an increase in credit extension, increases the likelihood of financial instability, according to Borio and Lowe (2002), and was a cause of concern to many – especially since household saving turned negative during the last quarter of 2005 and showed no signs of turning positive again. However, on a positive note, the decline in interest rates has contributed to stimulating investment and investment increased to above 20% of GDP for the first time in almost two decades.

In terms of monetary policy framework, South Africa follows an inflation targeting approach with no formal modelling of asset prices in the behavioural equation of monetary policy decision-making. The SARB sees financial stability as a precondition for creating an environment for economic growth and it is not a primary objective of the Bank. As such, it states that “the Bank relies on market forces to the fullest possible extent and believes that any of its actions to contain systemic risk should be at the minimum level ...” (SARB, 2009c).

Given these characteristics of the South African economy prior to the financial crisis, it should not be surprising that the economy did not show the same resilience to the crisis as that of our emerging peers – China, Brazil and India – who had much healthier savings rates and current account balances and who continued to grow strongly. Rather, the financial crisis and the subsequent dry-out of liquidity through the financial channel caused the asset price–banking system link, as proposed by von Peter (2009), to come into action. It triggered a decline in credit extension, which reinforced asset price declines and led to increased loan defaults and bank losses. The decline in the real economy via the wealth loss of consumers, as well as the international trade channel and subsequent decline in exports, placed even more strain on the financial sector of the economy. Good governance and capitalisation of the banking industry prevented a large-scale crisis in the financial industry to the extent experienced in economies such as that of the USA, UK and Germany.

However, the recent events in the world economy should be seen as a wake-up call for South Africa, since the weaknesses in our economy were clearly exposed by the crisis. Clearly, money matters and financing asset growth through credit creation and other countries’ savings, are not sustainable practices.

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