Note on the development of South Africa's integrated economic accounts[1]

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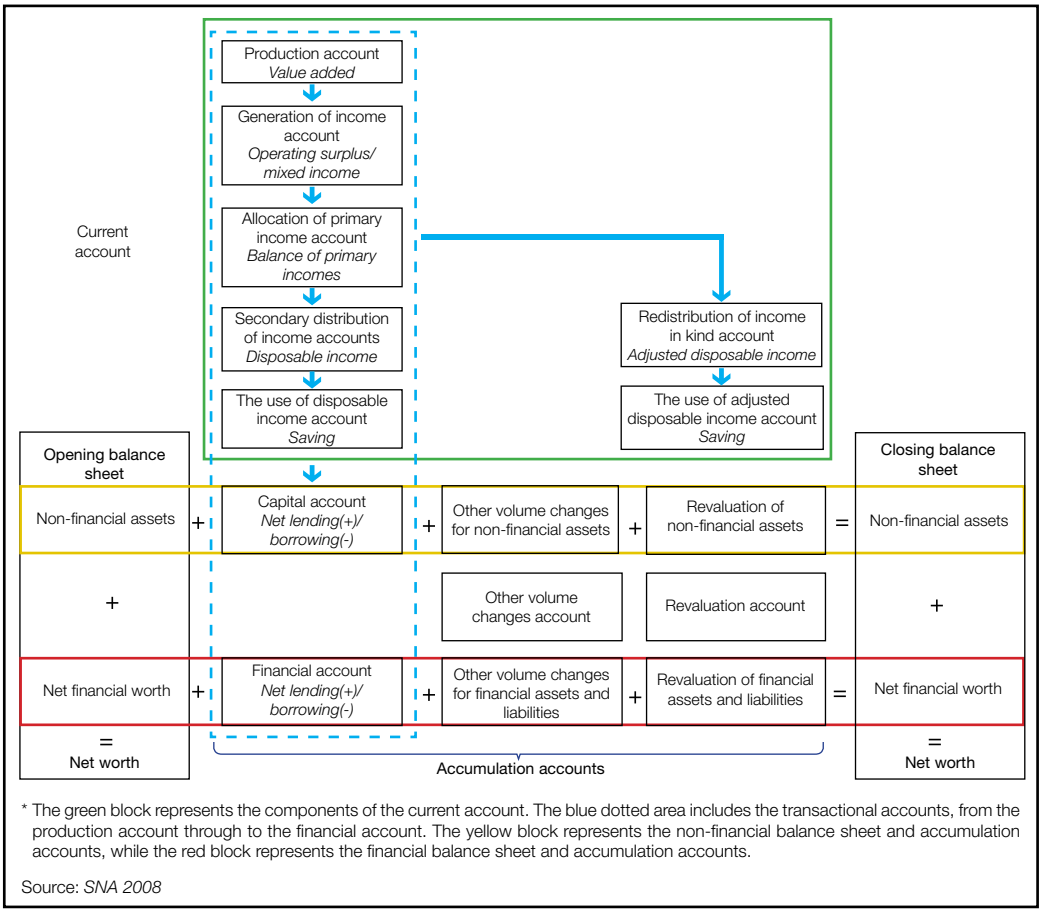
Introduction

The development of an integrated economic accounts (IEA) framework for the South African economy, which started in 2015, has progressed further. When completed, the IEA framework will extend the range of macroeconomic statistics available for policy formulation and contribute to the fulfilment of the Group of Twenty (G20)[3] Data Gaps Initiatives (DGI) commitments, although some data gaps will remain.

Methodology

The methodology underlying the compilation of the IEA is guided by the *System of National Accounts 2008 (SNA 2008)*[4] and the statistical framework is illustrated in Figure 1. In the IEA, the current and capital (non-financial assets) accounts reflect real economic activity, the financial accounts show financial intermediation, and transactions, revaluations and other volume changes are reflected in the accumulation accounts for the five main institutional sectors.[5]

Figure 1 Integrated economic accounts*



* The green block represents the components of the current account. The blue dotted area includes the transactional accounts, from the production account through to the financial account. The yellow block represents the non-financial balance sheet and accumulation accounts, while the red block represents the financial balance sheet and accumulation accounts.

Source: *SNA 2008*

1 This note is the fourth in a series highlighting the development of South Africa's integrated economic accounts (IEA). The statistics published and discussed in this note should be treated as experimental and subject to further adjustment.

2 The views expressed are those of the authors and do not necessarily reflect those of the SARB.

3 The Group of Twenty (G20) is an international forum for ministers of finance and central bank governors of the 19 largest advanced and emerging economies as well as the European Union.

4 The compilation methodology is based on the guidelines of the *System of National Accounts 2008 (SNA 2008)*, available at https://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf

5 The main institutional sectors are non-financial corporations, financial corporations, general government, households (including non-profit institutions serving households), and the rest of the world.

Current and capital accounts

The current and capital accounts record transactions related to real economic activity in the process of production, the generation and distribution of income, consumption and saving as well as capital formation that renders an institutional sector's net lending/borrowing position. The sub-accounts of the current and capital accounts, their purpose and the balancing items among the accounts which articulate the type of economic activities recorded, are shown in Table 1.

Table 1 Sub-accounts of the current and capital account

Main accounts	Sub-accounts	Purpose	Balancing items
Current	Production	Transactions related to economic production activities	*Gross value added* for institutional sectors *GDP* for the total economy after adjusting for taxes and subsidies on products
	Generation of income	Distribution of value added/GDP between labour and capital as factors of production	*Gross operating surplus* for institutional sectors *Mixed income* for households
	Allocation of primary income	Primary income derived from the production process as well as income from property received for the use of land, financial resources or other assets	*Gross balance of primary income*
	Secondary distribution of income	Redistribution of the primary income through current taxes, social contributions and benefits, and other current transfers	*Gross disposable income*
	Use of disposable income	Spending of gross disposable income on final consumption expenditure	*Net saving*
Capital		Spending on non-financial assets	*Net lending(+)/borrowing(-)*

Source: *SNA 2008*

Annual current and capital accounts for the five main institutional sectors are currently published in the South African Reserve Bank's (SARB) *Quarterly Bulletin* on pages S–131 to S–136. On completion of the IEA, these accounts will be available in more detail at a quarterly frequency.

Non-financial assets

Transactions in non-financial assets are recorded in the capital account and related accumulation accounts. Non-financial assets consist of produced and non-produced assets, and are valued at end-of-period market prices[6] which, in some instances, are calculated as the replacement value minus the consumption of fixed capital.

The produced assets consist of fixed assets[7] used in production and inventories as well as valuables, with the latter not currently measured due to data constraints. The non-produced assets consist of natural resources[8] and those created through legal agreement[9] from which the owners can extract economic benefits. Currently, only the annual abridged household sector balance sheet, with residential buildings and other non-financial assets, is published in the *Quarterly Bulletin* on page S–136. On completion of the IEA, these accounts will produce detailed non-financial statistics for the five main institutional sectors which will be available on a quarterly basis, with the lack of source data impeding the comprehensive compilation of non-produced assets.

6 The market value of fixed assets is calculated as the sum of gross fixed capital formation (i.e. expenditure on fixed assets) less the consumption of fixed capital (i.e. depreciation) revalued to market prices. The market value of total inventory holdings in the domestic economy is derived from inventory holdings at constant prices adjusted for end-of-period prices.

7 Fixed assets consist of dwellings, buildings other than dwellings, other structures, machinery and equipment, cultivated biological resources and intellectual property. Intellectual property includes, among other things, research and development as well as computer software.

8 Natural resources include land, minerals and energy, non-cultivated biological and other natural resources as well as radio spectra.

9 Leases, licences and permits are created through legal agreements.

Financial account and related accumulation accounts

Transactions in financial assets and liabilities are recorded in the financial and related accumulation accounts. Currently, balance sheets are published for selected financial intermediaries on a quarterly basis from page S–2 to S–27 in the *Quarterly Bulletin* for the monetary sector, from page S–36 to S–47 for non-bank financial intermediaries, as well as for components of the general government and public sector from page S–78 to S–81, and also the annual abridged household sector balance sheet on page S–136. A quarterly national financial account, or flow of funds, is also published on pages S–48 to S–49.

The IEA will integrate all the data sets into a consistent, coherent and balanced framework. On completion, the financial balance sheets, with inter-institutional sector balanced financial asset and liability stock positions as well as transactions, revaluations and other volume changes, will be available on a quarterly basis for the five main institutional sectors.

In the IEA, the quarterly stock positions are balanced based on a hierarchy-of-sources matrix according to the quality of input data. The matrix includes financial assets and liabilities by type of instrument for each institutional sector vis-à-vis each counterparty sector. Each sector-by-sector financial asset and liability position is evaluated at an instrument level before the balanced outcome is generated.

The financial asset and liability source data for the accumulation account (transactions, revaluations and other volume changes) are not obtained directly, but estimated indirectly by applying a revaluation model which was developed internally according to best international statistical practice.

Analysis of preliminary sectoral balance sheet results[10]

10 These are experimental results and are subject to future revisions.

An overview of South Africa's macroeconomic balance sheet by main domestic institutional sector as well as the rest of the world (ROW), broken down into non-financial assets as well as financial assets and liabilities as at 31 December 2018, is provided in Table 2.

Table 2 Summary balance sheet at market value, as at 31 December 2018*

R trillions

	Non-financial corporations[1]		Financial corporations		General government		Households[2]		Total domestic economy		Rest of the world[3]	
	A	L	A	L	A	L	A	L	A	L	A	L
Non-financial assets[4]	7.9		0.2		3.7		4.8		16.6			
Financial assets and liabilities	5.1	10.4	18.1	19.0	2.7	3.1	9.4	2.3	35.3	34.8	6.4	6.9
Net worth[5]		2.6		-0.7		3.3		11.9		17.1		-0.5
Total assets and liabilities	13.0	13.0	18.3	18.3	6.4	6.4	14.2	14.2	51.9	51.9	6.4	6.4
Memo item: Net financial worth[6]		-5.3		-0.9		-0.4		7.2		0.5		

A = assets
L = liabilities
* The balance sheet shows the market value of non-financial assets as well as financial assets and liabilities as at a specific point in time.
1 Private non-financial corporations' data are not directly sourced, but derived from counterparty positions. It should therefore be treated as preliminary and will be revised when administrative data sources are incorporated.
2 Including non-profit institutions serving households
3 In the IEA, the rest of the world is shown as a separate sector.
4 Total produced assets, including underlying land
5 Total assets *minus* total liabilities
6 Financial assets *minus* liabilities

Components may not add up due to rounding off.

Source: SARB

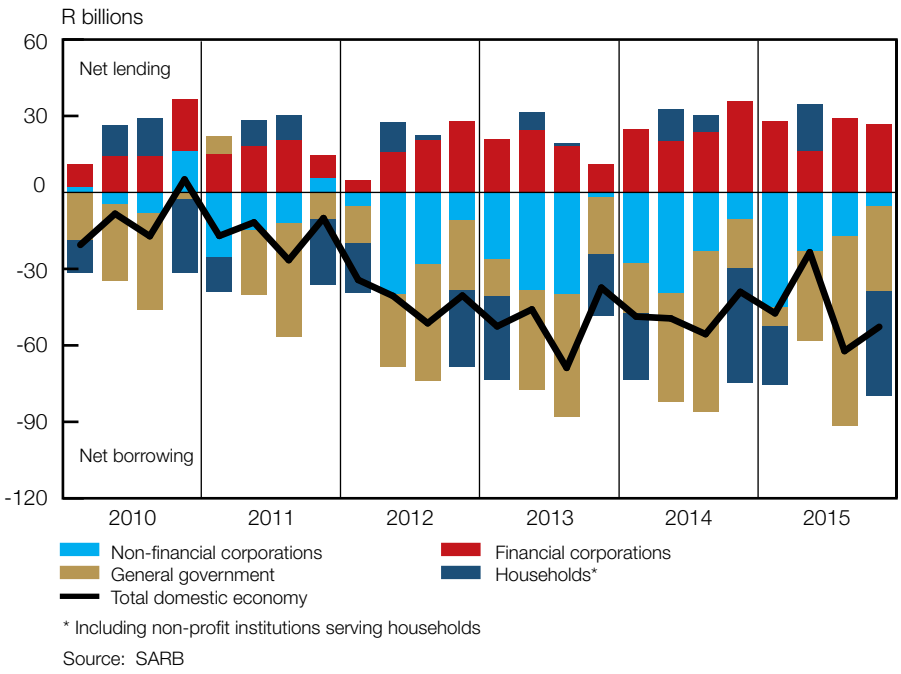
At the end of 2018, the total assets of the domestic economy amounted to R51.9 trillion and comprised financial assets of R35.3 trillion and non-financial assets of R16.6 trillion, resulting in a total net worth of R17.1 trillion and a net financial worth of R0.5 trillion.

Non-financial corporations held just less than half of all non-financial assets at 48% and financial corporations held just more than half of all financial assets at 51%. The household sector was the only sector with a positive net financial worth position while the non-financial corporations had the largest negative net financial worth position.

Current and capital accounts

The balancing items of the sub-accounts render analytically useful indicators of net flows and culminate in institutional sector net lending and borrowing positions. An analysis of the quarterly net lending and borrowing positions of the main institutional sectors shows that the financial corporations sector was a persistent net lender from 2010 to 2015. In contrast, general government and the non-financial corporations were mostly net borrowers over the period reviewed, except on occasion in 2010 and 2011. The size of general government's borrowing requirement indicates the revenue-versus-expenditure shortfall experienced. The aggregate of the domestic institutional sectors' net lending and borrowing positions reflects South Africa's funding gap and dependency on the ROW to fund the balance on the current account of the balance of payments.

Figure 2 Sectoral net lending and borrowing positions



* Including non-profit institutions serving households

Source: SARB

Non-financial assets

South Africa's balance sheet of non-financial assets shows institutional sector holdings by type of asset. The market value of capital stock almost doubled to R16.6 trillion from 2010 to 2018. In the fourth quarter of 2018, non-financial corporations (both private and public) accounted for almost half of total non-financial assets and households for almost a third, mainly in the form of dwellings.

Table 3 Stock of non-financial assets at market value

R trillions

	Non-financial corporations	Financial corporations	General government	House-holds*	Total domestic economy
Opening stock: first quarter 2010	3.6	0.1	2.0	2.8	8.5
Closing stock: fourth quarter 2018	7.9	0.2	3.7	4.8	16.6
Change in stock over period	4.3	0.1	1.7	2.0	8.1
Contribution in per cent to change in holdings over period	52.5	1.8	21.3	24.4	
Institutional sector's holdings as a per cent of total non-financial assets in 2018	47.7	1.5	22.2	28.7	

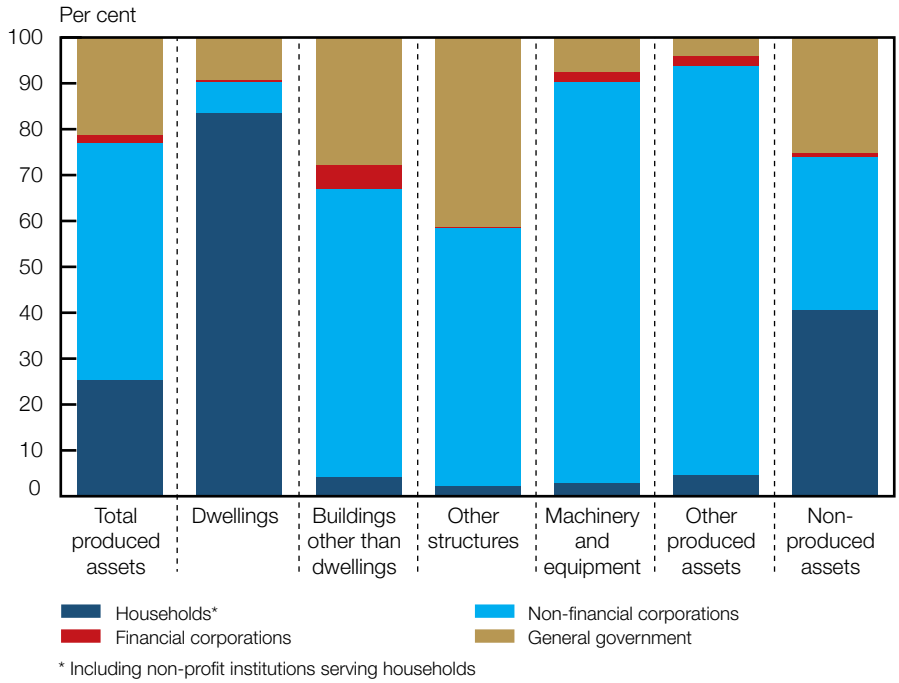
* Including non-profit institutions serving households

Source: SARB

The market value of non-financial corporations' stock of non-financial assets increased by R4.3 trillion from 2010 to 2018, and contributed more than half of the total increase. This reflects the net outcome of gross fixed capital formation, the consumption of fixed capital as well as revaluations. The increase in financial corporations' stock of non-financial assets accounted for only 1.8% of the total increase. Institutional sector ownership changed somewhat over the period, with the contribution of households decreasing from 32.7% to 28.7% and that of non-financial corporations increasing from 43.0% to 47.7%.

Institutional sector non-financial asset holdings by type of asset differ significantly, as shown in Figure 3. As at the end of 2018, households held 83% of dwellings and the non-financial corporations held 63% of buildings other than dwellings. The non-financial corporations and general government had the largest share of other structures such as roads, bridges and harbours. Machinery and equipment as well as other produced assets were largely held by the non-financial corporations. Non-produced assets, currently only the value of land, were fairly evenly distributed among households, non-financial corporations and general government. The non-financial balance sheet statistics presented are subject to revisions.[11, 12]

Figure 3 Institutional sector of non-financial asset holdings by type, as at December 2018



* Including non-profit institutions serving households

Source: SARB

11 Statistics South Africa (Stats SA) will publish benchmarked and rebased national accounts statistics in September 2020.

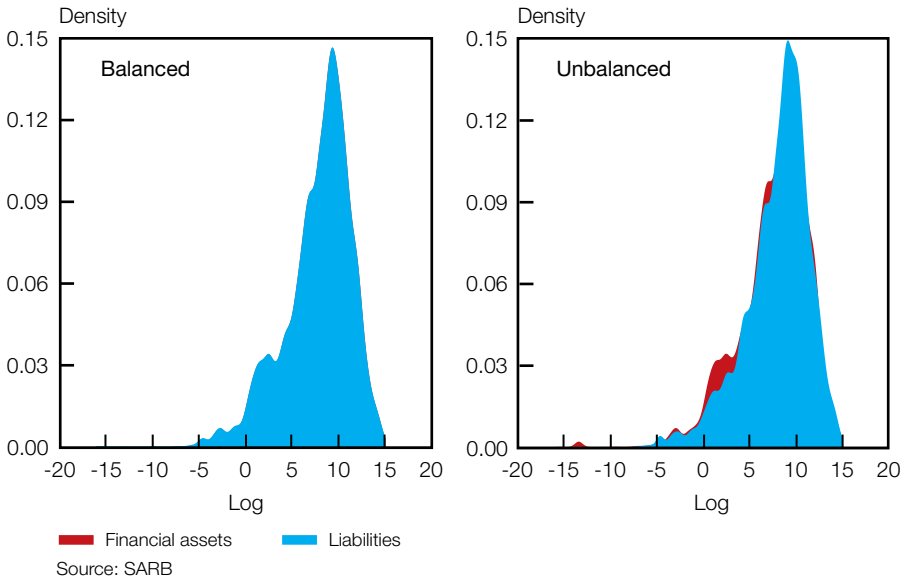
12 The SARB will introduce a new method for calculating the consumption of fixed capital, moving from straight line to geometric, where assets are assumed to lose value at a constant rate over their service life. The geometric method for calculating the consumption of fixed capital is empirically supported and will open up a larger suite of analytical possibilities.

Financial assets and liabilities

The distributional characteristics of unbalanced and balanced financial assets and liabilities are shown in Figure 4. The logarithmically transformed data cover the period from the first quarter of 2010 to the fourth quarter of 2018. Despite minor discrepancies, the respective distributional outcomes of financial assets and liabilities prior to being balanced are fairly similar.

The distribution obtained after applying a balancing exercise is skewed to the left. A basic implication of this outcome is that more observations are concentrated on the right-hand side of the distribution, meaning that relatively large values are observed more frequently compared to smaller values. It is also generally the case that the mean of the distribution will then be less than the median.

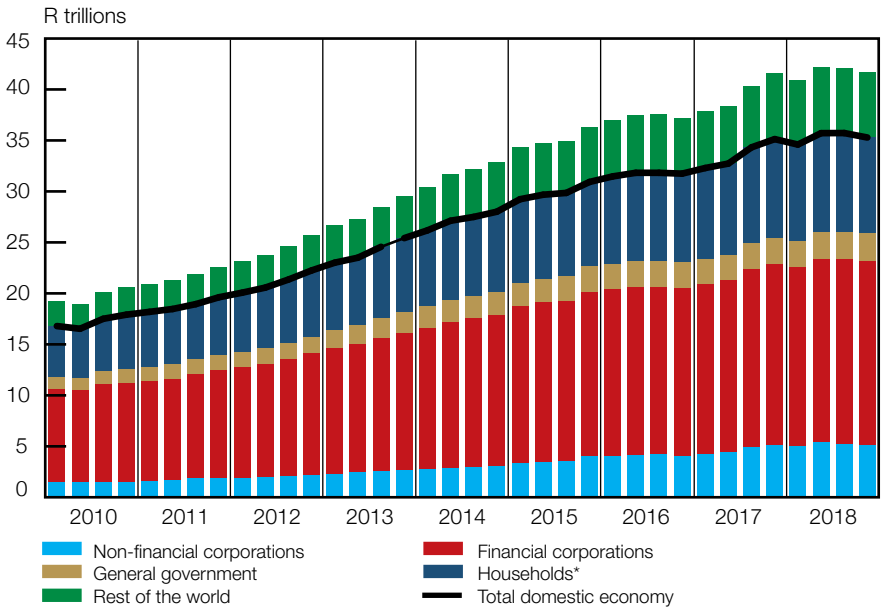
Figure 4 Distribution of balanced and unbalanced financial assets and liabilities



Source: SARB

The market value of financial assets held by all the domestic institutional sectors increased from R16.8 trillion in the first quarter of 2010 to R35.3 trillion in the fourth quarter of 2018, as shown in Figure 5. The financial corporations contributed the most to this R18.5 trillion increase at 48%, followed by households at 24% and the non-financial corporations and general government at 20% and 8% respectively. The financial assets of the ROW vis-à-vis the domestic institutional sectors increased from R2.4 trillion in the first quarter of 2010 to R6.4 trillion in the fourth quarter of 2018.

Figure 5 Market value of total financial assets by institutional sector

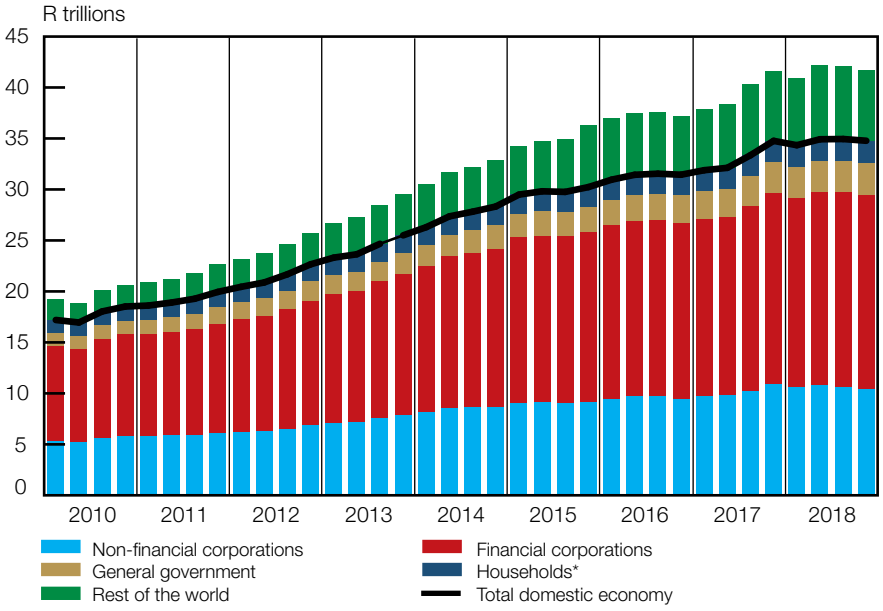


* Including non-profit institutions serving households

Source: SARB

In the harmonised IEA, financial assets equal liabilities in aggregate, but the institutional sector counterpart holdings differ significantly, as shown in Figure 6. The financial corporations' large contribution to the increase in financial assets from the first quarter of 2010 to the fourth quarter of 2018 was also mirrored in their share in the increase in liabilities of 55% over the period. The liabilities of the ROW vis-à-vis the domestic institutional sectors increased from R2.0 trillion in the first quarter of 2010 to R6.9 trillion in the fourth quarter of 2018.

Figure 6 Market value of total liabilities by institutional sector

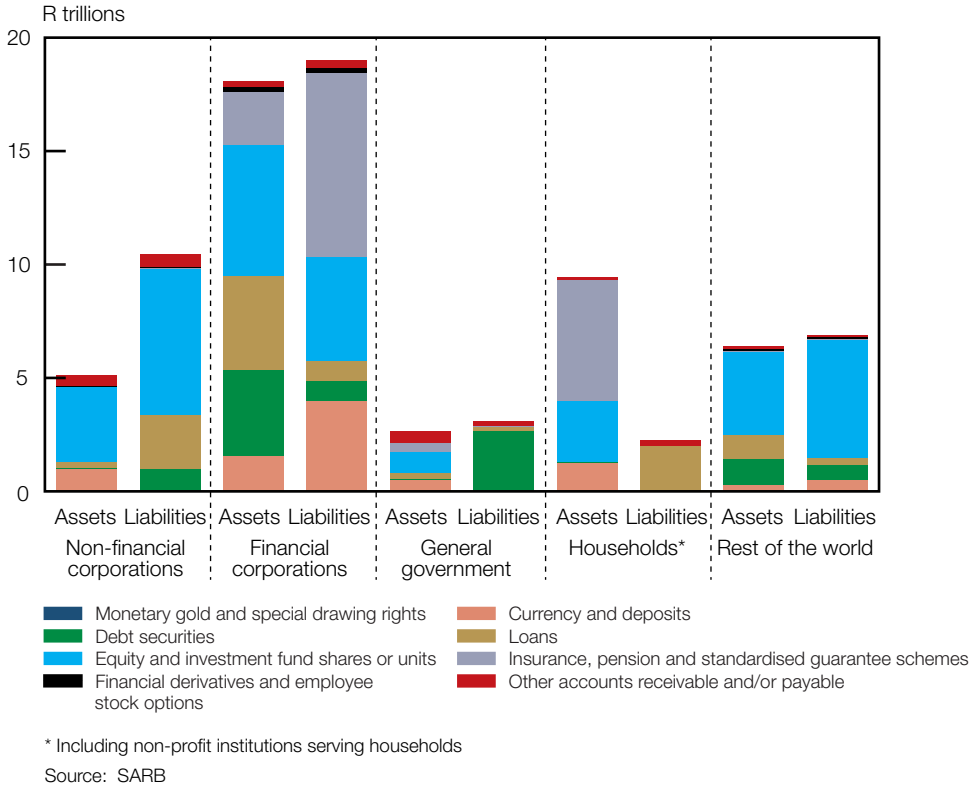


* Including non-profit institutions serving households

Source: SARB

The breakdown of total financial assets and liabilities by institutional sector and by type of financial instrument as at 31 December 2018 is shown in Figure 7. Equity and investment fund shares, or units, as well as insurance, pension and standardised guarantee schemes had a combined share of 55% in the domestic economy's financial assets and liabilities. Asset holdings of equity and investment fund shares, or units, were concentrated in the financial and non-financial corporations sectors followed by households, with the non-financial corporations having the largest liability exposure. The ROW showed strong preference for equity and investment fund shares, or units, as these comprised 57% and 76% of their financial assets and liabilities respectively. Insurance, pension and standardised guarantee schemes account for most of households' financial assets, with the liability against financial corporations. General government mostly funds through the issuance of debt securities and households through loans.

Figure 7 Market value of total financial assets and liabilities by institutional sector and financial instrument, as at 31 December 2018

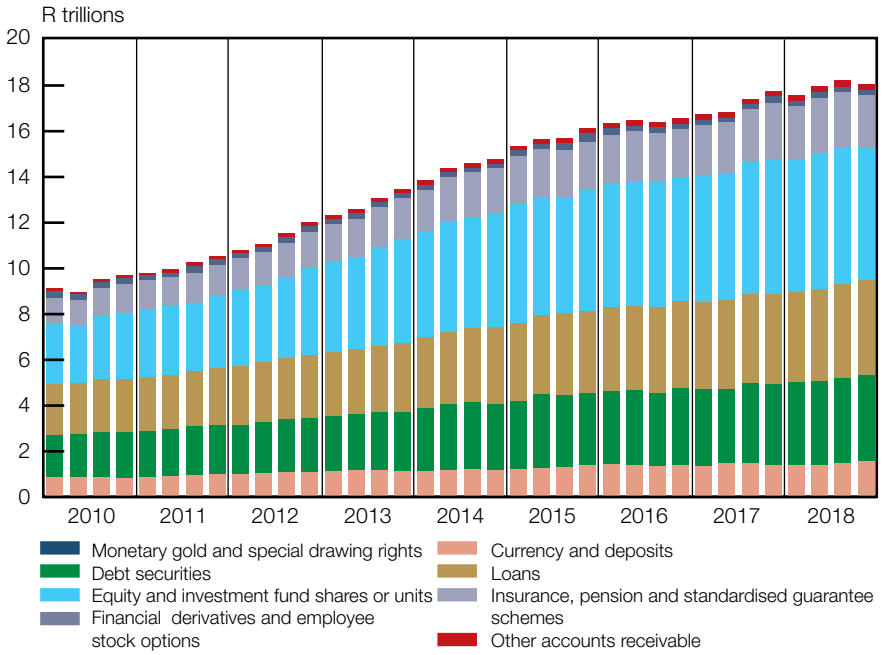


* Including non-profit institutions serving households

Source: SARB

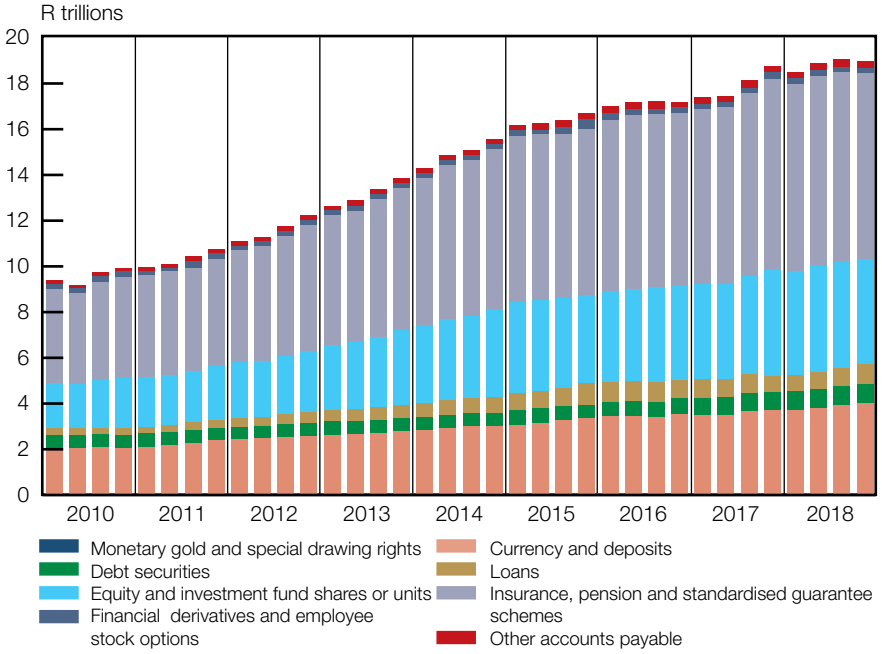
The evolution of financial corporations' financial assets and liabilities by financial instrument, as shown in Figures 8 and 9, reveals that equity and investment fund shares, or units, recorded the highest average annual growth rate of about 10% from the first quarter of 2010 to the fourth quarter of 2018. Equity and investment fund shares, or units, as a share of total financial assets increased from 29% in 2010 to 33% in 2018, while that of currency and deposits, loans as well as financial derivatives and employee stock options decreased. Similarly, the share of equity and investment fund shares, or units, to total liabilities also increased from 22% to 25% over the same period, as shown in Figure 9, while that of currency and deposits, debt securities as well as financial derivatives and employee stock options decreased marginally.

Figure 8 Market value of total financial assets of financial corporations by financial instrument



Source: SARB

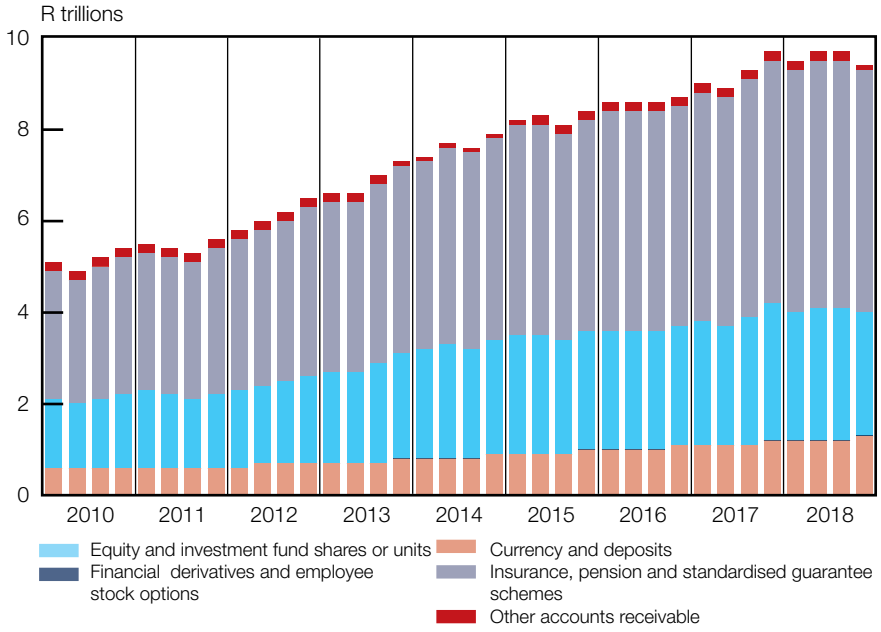
Figure 9 Market value of total liabilities of financial corporations by financial instrument



Source: SARB

The composition of households' financial assets and liabilities remained broadly unchanged from the first quarter of 2010 to the fourth quarter of 2018, as shown in Figures 10 and 11. The average annual growth rate in households' equity and investment fund shares, or units, currency and deposits as well as insurance, pension and standardised guarantee schemes instrument assets was between 8% and 10% over this period. Households' loan liabilities and other accounts payable increased by, on average, 6% and 7% respectively over the same period.

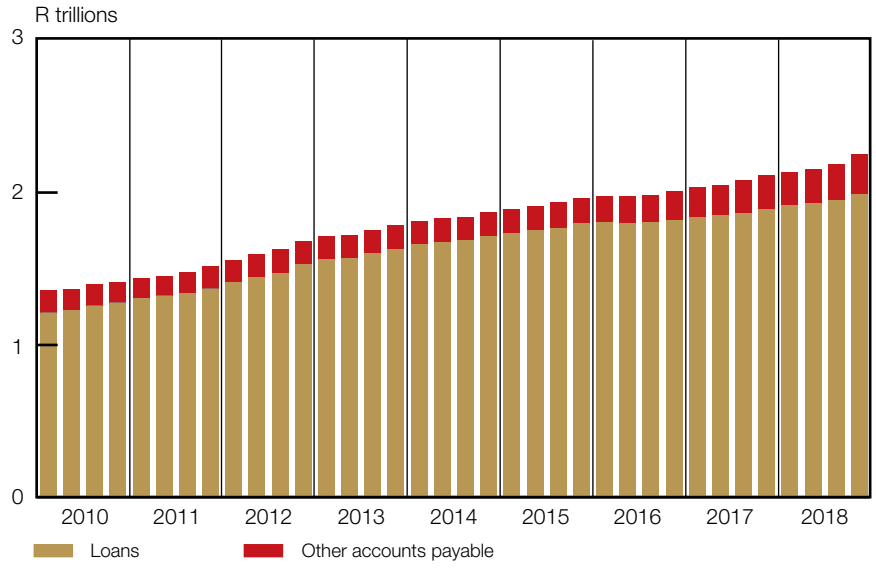
Figure 10 Market value of total financial assets of households* by financial instrument



* Including non-profit institutions serving households

Source: SARB

Figure 11 Market value of total liabilities of households* by financial instrument



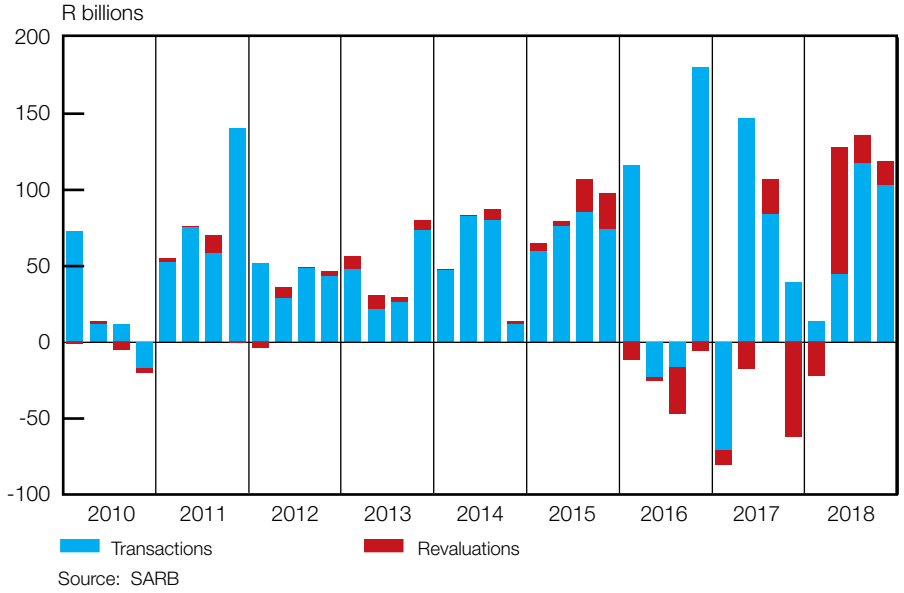
* Including non-profit institutions serving households

Source: SARB

Transactions and revaluations in the accumulation account

The change in the market value of financial assets and liabilities between opening and closing balances is explained by transactions, revaluations and other volume changes.

Figure 12 Attribution of change in currency and deposit balances



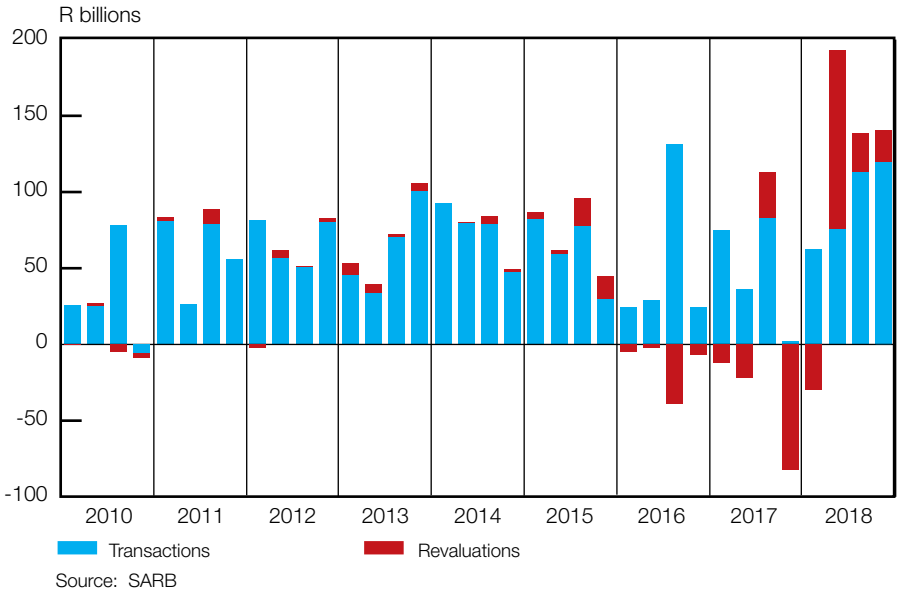
Source: SARB

The attribution of the change between the stock positions for currency and deposits[13] as well as loans[14] is shown in Figures 12 and 13. For both of these financial instruments, the changes from the first quarter of 2010 to the fourth quarter of 2015 mainly originated from transactions. From the first quarter of 2016 to the fourth quarter of 2018, revaluations had a larger effect due to the appreciation in the exchange value of the rand between the first quarter of 2016 and the first quarter of 2018, and its depreciation between the second and fourth quarter of 2018.

13 Currency and deposits consist of currency, transferable deposits and other deposits.

14 Loans include both short- and long-term loans.

Figure 13 Attribution of change in loan balances



Source: SARB

From-whom-to-whom positions

An institutional sector's financial assets and liabilities vis-à-vis a counterparty institutional sector reveal financial linkages within the economy as well as vis-à-vis the ROW. The from-whom-to-whom balanced financial asset and liability stock positions of the four domestic institutional sectors and the ROW, as at 31 December 2018, are shown in Table 4. The horizontal view (rows) shows the total financial assets of each institutional sector vis-à-vis the institutional sector against which claims are held. Similarly, the vertical view (columns) shows the counterparty breakdown of an institutional sector's total liabilities. For example, households' financial assets of R7.3 trillion represent a claim against financial corporations.

Table 4 From-whom-to-whom market value positions of financial assets and liabilities between resident institutional sectors and the rest of the world, as at 31 December 2018

R billions

		Liabilities by institutional sector (vertical)						
Institutional sectors		Non-financial corporations	Financial corporations	General government	House-holds*	Rest of the world	Total assets	
Financial assets by institutional sector (horizontal)	Non-financial corporations	137	1 351	87	74	3 467	5 115	
	Financial corporations	4 008	7 049	1 749	1 989	3 276	18 070	
	General government	978	1 421	80	186	0	2 665	41 663
	Households*	1 919	7 264	104	2	145	9 434	
	Rest of the world	3 404	1 896	1 078	0	0	6 378	
	Total liabilities	10 445	18 982	3 098	2 250	6 888	552**	
				41 589				74***

* Including non-profit institutions serving households
** This value is equal to the net international investment position, excluding monetary gold, which has no counterparty classification in the financial balance sheets.
*** This is the value of the monetary gold held by the SARB as at 31 December 2018; it equates to the difference between the balanced assets and liabilities, because monetary gold has no counterparty classification in the financial balance sheets.

Source: SARB

The net stock positions between domestic institutional sectors and the ROW derived from an analysis of the from-whom-to-whom market value positions of financial assets and liabilities depicted in Table 4, are shown in Table 5 and Figure 14. The areas of the circles in Figure 14 are proportional to the net asset and liability positions of each institutional sector, with green indicating a positive position and red a negative position. The arrows show inter-sectoral flows, with the width of the arrow proportional to the magnitude of the flow. Households were the only sector with a net asset position in the fourth quarter of 2018, while the non-financial corporations had the largest net liability position.

Table 5 From-whom-to-whom net stock positions between resident institutional sectors and the rest of the world, as at 31 December 2018

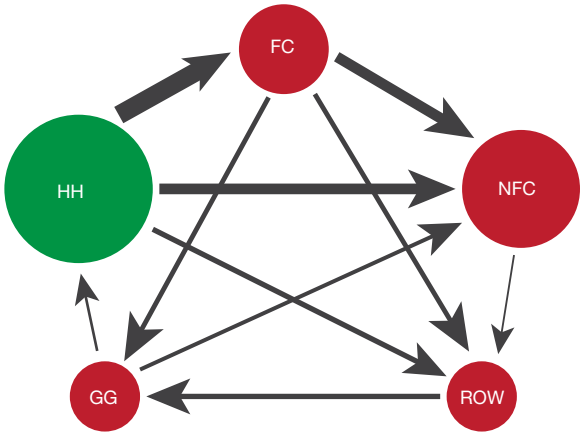
R billions

		Debtor sectors					
	Institutional sectors	Non-financial corporations	Financial corporations	General government	House-holds*	Rest of the world	Total
Credit sectors	Non-financial corporations	0	-2 656	-892	-1 845	63	-5 330
	Financial corporations	2 656	0	328	-5 275	1 380	-911
	General government	892	-328	0	82	-1 078	-432
	Households*	1 845	5 275	-82	0	145	7 184
	Rest of the world	-63	-1 380	1 078	-145	0	-510

* Including non-profit institutions serving households

Source: SARB

Figure 14 Network analysis of net stock positions between resident institutional sectors and the rest of the world, as at 31 December 2018



NFC = non-financial corporations
FC = financial corporations
GG = general government
HH = households*
ROW = rest of the world

* Including non-profit institutions serving households

Source: SARB

Conclusion

The preliminary and experimental statistics analysed in this note reflect progress made with the further development of the current and capital account, the non-financial assets, and the financial account of South Africa's IEA. Future work on the establishment of the IEA will focus on closing the remaining data gaps and on the refinement of financial instrument and institutional sector measurement as well as the vertical balancing of these accounts.