Development of the South African institutional sector accounts

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Abstract

The paper discusses the work undertaken by the South African Reserve Bank to further the development of integrated economic accounts for the South African economy. This is done from the vantage point of national interest but also as part of South Africa's commitment to the G-20 Data Gaps Initiatives. One of the main benefits foreseen from this undertaking is the improved insight it ought to provide into financial vulnerabilities and risks associated with institutional sector balance sheets. It could be a useful tool for identifying potential stress-points in the financial sector as well as the transmission channels through which these risks could be propagated to the real economy. In addition, it also potentially provides a data set that ought to be of value in better understanding the transmission of monetary policy. Much work revolved around the measurement and estimation of the stock of non-financial assets and financial assets and liabilities for the various institutional sector balance sheets with specific emphasis on financial instrument detail and further detailed breakdowns by institutional sectors which were generally lacking. In addition to institutional sectors and financial instruments, further developments entail the presentation of these sets of accounts in terms of currency composition, maturity analysis, and on a from-whom-to-whom basis. The paper examines the concepts and methods used to compile the integrated economic accounts which follow the standard System of National Accounts 2008 framework. It discusses the South African Reserve Bank's approach to the balancing model, including the estimation of nominal holding gains and losses and financial transactions as well as the application of market valuation principles in the financial balance sheets. The public-sector debt statistics is highlighted as an example of valuation issues between nominal and market value - a mix of nominal and market values would lead to financial asset and liability inconsistencies as institutional sector counterparty asset positions are usually recorded at market values in their balance sheets whilst the liabilities of certain financial instruments are more commonly recorded at nominal value in the accounts of the debtor sector. The paper discusses selected results of the analysis of preliminary high level institutional sector balance sheet data – both non-financial and financial positions and broken down by type of non-financial category and financial instrument as well as by institutional sector. The objective of this analysis is to show the estimated size of institutional sectors in the South African economy and their positions as net lenders or borrowers, and financial positions of institutional sectors and the rest of the world on a from-whom-to-whom basis. Thereafter some areas for future development work which will lead to the dissemination of a more complete set of integrated economic accounts for South Africa will be highlighted. This includes the extension of the dataset to 2015 and later, to most recent quarterly data.

Keywords: Integrated economic accounts, non-financial assets, financial instruments.

JEL Classification Numbers: E01, E02, H63

1. Introduction

The South African Reserve Bank established a project to further develop the integrated economic accounts for the South African economy in 2015. This is in the interest of providing reliable and relevant statistics for national policy formulation and to fulfill South Africa's international statistical commitments to the G-20 Data Gaps Initiatives. One of the main benefits foreseen from this undertaking is the improved insight it ought to provide into financial vulnerabilities and risks associated with institutional sector balance sheets. It could be a useful tool for identifying potential stress-points in the financial sector as well as the transmission channels through which these risks could be propagated to the real economy. In addition, it also potentially provides a data set that ought to be of value in better understanding the transmission of monetary policy.

The further development of the integrated economic accounts entails a harmonised set of macroeconomic accounts that link the real and financial spheres of the economy. These additional data sets are intended to provide quarterly data for the period from 2010 to the present. Much work on the development of integrated economic accounts revolved around the measurement and estimation of the stock of non-financial assets and financial assets and liabilities for the various institutional sector balance sheets with specific emphasis on financial instrument detail and further detailed breakdowns by institutional sectors which were generally lacking. In addition to institutional sectors and financial instruments, further developments entail the presentation of these sets of accounts in terms of currency composition, maturity analysis, and on a from-whom-to-whom basis.

This paper draws heavily on the work of de Beer et al. (2016) on the compilation of fully integrated economic accounts for South Africa. Section 2 introduces concepts and methods used to compile the integrated economic accounts. Section 3 discusses selected results of the analysis of preliminary high level institutional sector balance sheet data. Section 4 concludes by discussing some areas for future development work which will lead to the dissemination of a more complete set of integrated economic accounts for South Africa.

2. Methodology for compiling the integrated economic accounts

In the integrated economic accounts, the real economy is represented by the current and capital accounts as well as the non-financial asset and accumulation accounts. The current account comprises the production, generation and allocation of income, distribution and redistribution of income accounts, as well as its utilisation. Currently only these accounts and high level financial assets and liabilities and non-financial assets of households are published on an annual basis by the South African Reserve Bank. However, this information needs to be extended in terms of institutional sector breakdown as well as to a quarterly frequency. The coverage of the financial sphere of the economy is obtained through the development of a full set of financial balance sheets and accumulation accounts.

2.1 Institutional sectors

One of the anchor parameters underlying the project is institutional sector delineation. The institutional sector delineation applied in the integrated economic accounts is obtained from a combination of delineation contained in the SNA 2008 as well as national requirements. The subsectors of the five main institutional sectors are shown in Table 1. Currently, various data sources are used for the different institutional sectors, except for the private non-financial corporate sector which is measured using derived data from the other counterparty sectors.

Table 1 Institutional sectors

Main institutional sectors	Subsectors		
Non-financial corporations	Public		
	Private		
Financial corporations	Monetary financial institutions	Monetary authority	Central bank
			Corporation for Public Deposits
		Other monetary financial institutions	Deposit-taking corporations (banks)
			Money-market funds
	Other financial corporations[1]	Non-money market investment funds	
		Other financial intermediaries[2]	
		Financial auxiliaries	
		Captive financial institutions and money lenders	
	Insurance corporations and pension funds	Insurance corporations	
		Pension funds	
General government	Central and provincial government		
	Local government		
Households[3]			
Rest of the world			

Source: SNA 2008

2.2 Non-financial assets

Non-financial assets consist of both produced and non-produced assets. The produced non-financial assets in turn comprise fixed assets used in production, inventories and valuables - see Table 2. Valuables are not included in the scope of the project due to data constraints. The market value of fixed assets is derived as the sum of gross fixed capital formation of such assets (i.e. expenditure on fixed assets) less consumption of fixed assets (i.e. depreciation) revalued to market prices. Fixed assets in turn consist of dwellings, buildings other than dwellings, other structures, machinery and equipment, cultivated biological resources and intellectual property. The market value of total inventory holdings in the domestic economy is derived from inventory holdings at constant prices adjusted for end-period prices.[4]

Non-produced non-financial assets consist of natural assets and assets created through legal agreement from which the owners can extract economic benefits. Natural assets include land and mineral reserves whereas leases, licenses and permits are created through legal agreements. Natural resources consist of land, mineral and energy resources, non-cultivated biological resources, other natural resources and radio spectra. Currently, only the market value of land underlying dwellings, buildings other than dwellings and other structures is reported. The market value of land underlying assets is derived as a ratio of the value of the non-depreciated produced asset situated on the land.

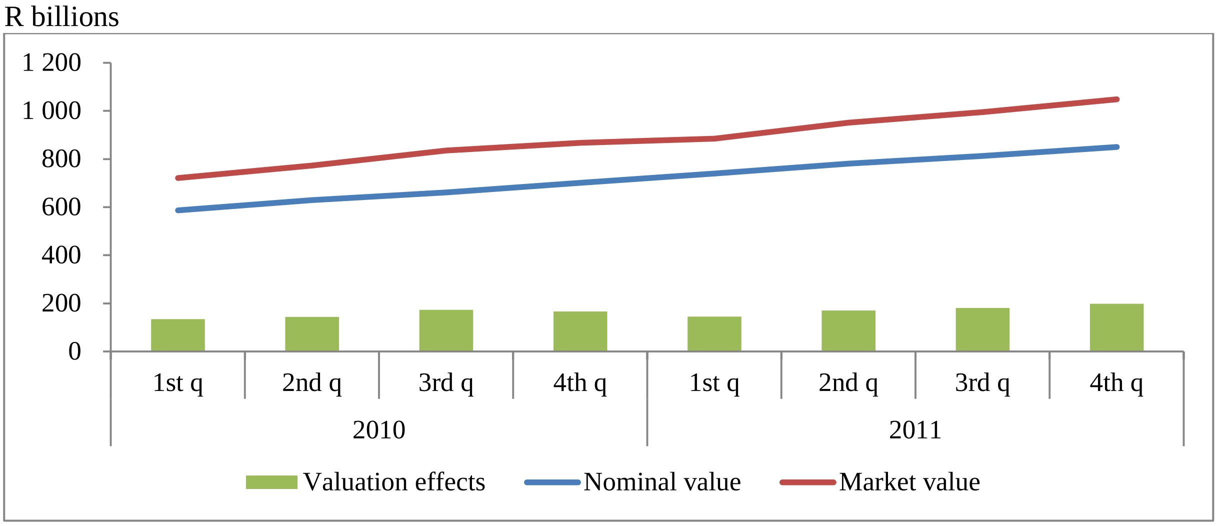
[1] Except monetary financial institutions and insurance corporations and pension funds
[2] Except insurance corporations and pension funds
[3] Including non-profit institutions serving households
[4] Excluding military inventory

The market value of land - whether residential, industrial or different types of farmland - differs markedly and sufficient price data are not available to make accurate estimations. The market value of South Africa's various national parks and other recreational holiday retreats as well as other land belonging to general government further complicates estimations. Data constraints also inhibit the estimation of mineral and energy reserves.

2.3 Financial instruments

The eight main financial asset and liability categories in the financial balance sheets and accumulation accounts consists of monetary gold and special drawing rights; currency and deposits; debt securities; loans; equity and investment fund shares/units; insurance, pension and standardised guarantee schemes, financial derivatives and employee stock options and other accounts receivable/payable. Financial assets and liabilities are valued at current market prices as at the balance sheet date. However, some datasets are only available in nominal terms which pose a problem. Figure 1 illustrates the divergence between nominal and market value due to valuation effects in the stock position of long-term debt securities of national government as an example.

Figure 1 Outstanding nominal and market value of national government long-term debt securities



Unfortunately most of the institutional sector data available only relates to stock positions, in particular in the case of financial assets and liabilities, which places a heavy burden on the South African Reserve Bank to gauge the contribution of valuation effects as opposed to actual transactions and other changes in volume. Future development work will focus in this area.

2.4 Balancing

The accumulation accounts of the financial balance sheets are divided into financial transactions, other volume changes and revaluation[5] accounts. The financial balance sheets and accumulation accounts measurement system has three major components, namely the building block component, the balancing component and the revaluation estimation component. The building block component deals with the source data inputs from contributing institutional sector compilers. Data sourcing is conducted through the utilisation of financial asset and liability templates for each institutional sector which in effect produces unbalanced balance sheets for the institutional sectors and which is based on

[5] The revaluation account is also referred to as nominal holding gains and losses.

templates provided by the International Monetary Fund. These financial asset and liability templates are introduced into the balancing system where balancing assumptions are made based on a detailed hierarchy of sources. Once the balancing assumptions have been applied to the unbalanced financial asset and liability templates the balanced financial asset and liability templates for each institutional sector is generated. This is the current status of the project and rendered the data shown and discussed in this paper.

3. Preliminary results[6]

The further development of the integrated economic accounts into all its dimensions is a project that will stretch over an extended period of time. The first milestone, to develop a high-level quarterly core dataset for 2010 and 2011, has been achieved.

3.1 Non-financial assets

Total produced non-financial assets including underlying land in the domestic economy amounted to R9,4 trillion at the end of December 2011 as indicated in Table 2.

Table 2 Non-financial asset stock positions at market prices, 31 December 2011

R millions

	Non-financial corporates	**Financial corporates**	**General government**	**Households**	**Total domestic economy**
Total produced assets	3673489	294319	1660095	1905073	7532976
Total fixed assets	3112793	278497	1656494	1872662	6920446
Dwellings	243334	10070	237628	1660831	2151863
Buildings other than dwellings	733769	113287	312168	66309	1225533
Other structures	983612	7198	938444	68365	1997619
Machinery and equipment	1042563	119189	141076	62126	1364954
Cultivated biological resources	8781			14659	23440
Intellectual property	100734	28753	27178	372	157037
Inventories	560696	15822	3601	32411	612530
Non-produced					
Total underlying land	563191	33113	525811	760363	1882478
Dwellings	85424	5331	114941	744668	950364
Buildings other than dwellings and other structures	477767	27782	410870	15695	932114
Total real estate*	2523906	163668	2014051	2555868	7257493
Dwellings	328758	15401	352569	2405499	3102227
Buildings other than dwellings and other structures	2195148	148267	1661482	150369	4155266
Total produced including underlying land	**4236680**	**327432**	**2185906**	**2665436**	**9415454**

*Fixed assets and underlying land.

[6] These are experimental results subject to future adjustment.

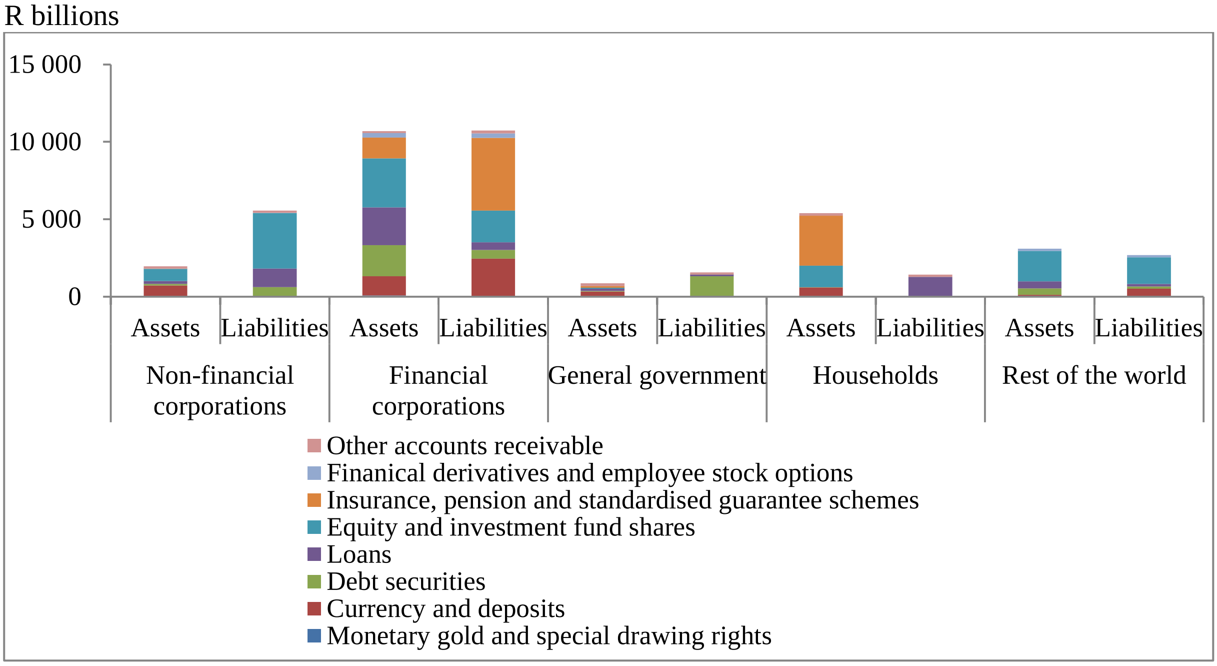
The total produced fixed assets accounted for roughly 74 per cent of non-financial assets, with the largest contribution, about 39 per cent, originating from non-financial corporations. The household sector dominated non-produced assets, with 98 per cent related to dwellings. Of all four institutional sectors, financial corporations held the smallest portion of non-financial assets in the domestic economy.

3.2 Financial assets and liabilities

The overall size of the market value of the balanced stock of financial assets and liabilities held by both residents and non-residents in the South African economy amounted to R22 trillion as at 31 December 2011 as shown in Table 3, or about seven times gross domestic product recorded for the year. The distribution by value of financial assets and liabilities by institutional sector and financial instrument is shown in Figure 2.

Three important observations emerge from viewing the financial asset and liability data sets. The first is that the overall values of the financial assets and liabilities of the financial corporate sector are fairly similar. The second observation is that the financial liabilities of the household sector are significantly less than its financial assets. Thirdly, the financial liability position of the non-financial corporate sector is markedly larger than its financial asset position.

Figure 2 Market value of total financial assets and liabilities by institutional sector and financial instrument, 31 December 2011



Additional insight into the financial instrument-specific make-up of the financial assets and liabilities of the institutional sectors reveal that the majority of the financial assets of the non-financial corporate sector, financial corporate sector, and the rest of the world are concentrated in equity and investment fund shares or units. On the other hand, a significant portion of household assets are in the form of pension claims on the financial sector while the general government has a fairly small financial asset position. On the liability side, both the non-financial corporate sector and the rest of the world had a high exposure to equity and investment fund shares or units; the financial corporate sector to insurance, pension and standardised guarantee schemes; households to loans; and general government to debt securities.

3.3 From-whom-to-whom positions

The analysis done thus far does not reveal any information on institutional sector-by-sector linkages or the extent of these linkages. It is precisely these linkages that are of importance to understand the possible implications for financial stability. The balanced financial asset and liability stock positions of the four domestic institutional sectors as well as the rest of the world, on a from-whom-to-whom basis, as at 31 December 2011 is shown in Table 3. For the resident institutional sectors, aggregated (i.e. non-consolidated) data are presented. This means that intra-sectoral positions, transactions, nominal holding gains and losses as well as other volume changes are not eliminated.

Total financial assets amount to just more than R22 trillion, with total financial liabilities amounting to just less than R22 trillion. The difference of R51 billion, relates to the monetary gold assets of the central bank which does not have a counterparty liability.

The horizontal view of Table 3 provides total financial assets of each institutional sector vis-à-vis the institutional sector against which these claims are held. For example, of the R10,7 trillion financial assets of the financial corporate sector R2,5 trillion represents claims against the non-financial corporate sector and R4,1 trillion represents claims against the financial corporate sector itself. Similarly, the vertical view of Table 3 provides an institutional sector counterparty breakdown of an institutional sector's liabilities.

Table 3 From-whom-to-whom market value positions of total financial assets and liabilities between resident institutional sectors as well as the rest of the world, 31 December 2011

R billions

<table>
<tr><th colspan="2" rowspan="2">Institutional sectors</th><th colspan="7">Liabilities by resident institutional sector and residency</th></tr>
<tr><th>Non-financial corporations</th><th>Financial corporations</th><th>General government</th><th>Households</th><th>Rest of the world</th><th colspan="2">Total</th></tr>
<tr><td rowspan="6">Assets by resident institutional sector and residency</td><td>Non-financial corporations</td><td>60</td><td>966</td><td>15</td><td>77</td><td>848</td><td>1 965</td><td rowspan="5">22 020</td></tr>
<tr><td>Financial corporations</td><td>2 525</td><td>4 075</td><td>1 002</td><td>1 270</td><td>1 773</td><td>10 696</td></tr>
<tr><td>General government</td><td>162</td><td>537</td><td>89</td><td>74</td><td>1</td><td>863</td></tr>
<tr><td>Households</td><td>1 070</td><td>4 149</td><td>102</td><td>0</td><td>73</td><td>5 394</td></tr>
<tr><td>Rest of the world</td><td>1 738</td><td>1 007</td><td>355</td><td>0</td><td>0</td><td>3 101</td></tr>
<tr><td>Total</td><td>5 555</td><td>10 734</td><td>1 563</td><td>1 421</td><td>2 696</td><td>-405*</td><td></td></tr>
<tr><td colspan="2"></td><td colspan="5">21 969</td><td></td><td>51**</td></tr>
</table>

* 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 monetary gold held by the South African Reserve Bank as at 31 December 2011; it equates to the difference between the balanced assets and liabilities because monetary gold has no counterparty classification in the financial balance sheets.

Important to note is that the rest of the world sector is compiled from the perspectives of foreign economies – which basically results in the inverse of South Africa’s international investment position. The financial assets of the rest of the world issued by the rest of the world are not covered and will thus always be zero due to the fact that this data are not relevant from South Africa’s perspective. Holdings of financial instruments by non-residents (vis-à-vis resident sectors as debtors) are shown as South African liability positions (rest of the world asset positions) in the rest of the world balance sheet, while acquisitions and disposals by non-residents of financial instruments issued by residents are shown as financial transactions in the rest of the world financial account. Similarly, holdings of financial instruments by residents vis-à-vis non-residents are shown as South African asset positions (rest of the world liability positions) in the rest of the world balance sheet. Thus, the rest of the world financial asset position of R3,1 trillion and financial liability position of R2,7 trillion in Table 3 reflect the inverse of South Africa’s international investment position. The positive difference of R0,4 trillion indicates South Africa’s negative international investment position.

3.4. Institutional sector balance sheet

An overall assessment of the first preliminary and experimental results of institutional sector balance sheets, as shown in Table 4, reveal a total balanced asset position of resident institutional sectors of R28,3 trillion, or approximately 9 times the gross domestic product recorded for the year. Total assets of the domestic economy consisted of non-financial assets of R9,4 trillion and financial assets of R18,9 trillion. The liability side comprised of financial liabilities of R19,3 trillion and net worth (non-financial and financial assets minus financial liabilities) of R9 trillion. The non-financial corporate sector held 45 per cent of non-financial assets while the financial corporate sector accounted for more than half of both total financial assets and liabilities. The household sector had the largest net worth position at R6,7 trillion. The rest of the world sector had assets in South Africa of R3,1 trillion while South African sectors had claims on the rest of the world of R2,7 trillion.

Table 4 Summary balance sheet by institutional sector at market prices, 31 December 2011

R trillions

	Non-financial corporations		**Financial corporations**		**General government**		**Households**		**Total domestic economy**		**Rest of the world**	
	A	**L**	**A**	**L**	**A**	**L**	**A**	**L**	**A**	**L**	**A**	**L**
Non-financial assets*	4.2		0.3		2.2		2.7		9.4			
Financial assets and liabilities	2.0	5.6	10.7	10.7	0.9	1.6	5.4		18.9	19.3	3.1	2.7
Net worth**		0.6		0.3		1.5		1.4		9.0		
Total assets and liabilities	6.2	6.2	11.0	11.0	3.1	3.1	8.1	6.7	28.3	28.3	3.1	

A = assets and L = liabilities
*Total produced assets including underlying land
**Total assets minus financial liabilities

4. Conclusion

The data shown and discussed in this note are the outcome of the project thus far and should be treated as preliminary and experimental. In addition, it should be noted that certain source data need to be broadened and improved to close material data gaps. Future development work will focus on the utilisation of the balanced asset and liability stock positions to estimate nominal holding gains and losses at detailed financial instrument level where after financial transactions will be derived as the residual. This data set will facilitate detailed from-whom-to-whom accounts of stock positions, transactions (flow of funds), revaluations and other volume changes.

The further development of integrated economic accounts for South Africa is an ongoing process. The first phase, discussed above, has laid the foundation and the subsequent phases will build on this. A first priority is to expand the dataset to cover the period from 2012 to 2016. Further effort will be directed at expanding the institutional sector and financial instrument coverage as well as improving the data coverage and quality. There is a significant advantage in using the sector accounts approach contained in the SNA 2008 framework as it ensures data consistency and international comparability. This allows for a systematic understanding of the important relationships in the South African economy, such as the relationship between economic flows in the real and financial spheres as well as the issue of financial interconnectedness and linkages among the various components in the economic value chain.

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