



South African Reserve Bank

**An introduction to key
concepts commonly used in
the analysis of the economy
by the Economic Research
and Statistics Department**

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31 May 2017

“The views expressed herein are those of the author and do not reflect the
official views of the SARB Group.”

Introduction

- Artists = Economists (Red tool box)
- Theory vs practice
- Accounting \neq Economics
- Practical high-level overview
- Visually orientated introduction
- Economists usually focus on economic growth, stability and equity
- Evaluating the state of the economy:
 - Economic growth SNA 1993 / 2008
 - Full employment (BC)
 - Balance of payments (BoP) stability BPM2005/6
 - Price and financial market stability MFSM2000
 - An equitable distribution of income GFSM2001/2014

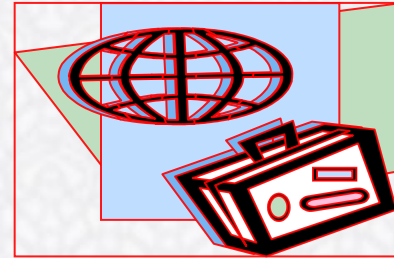
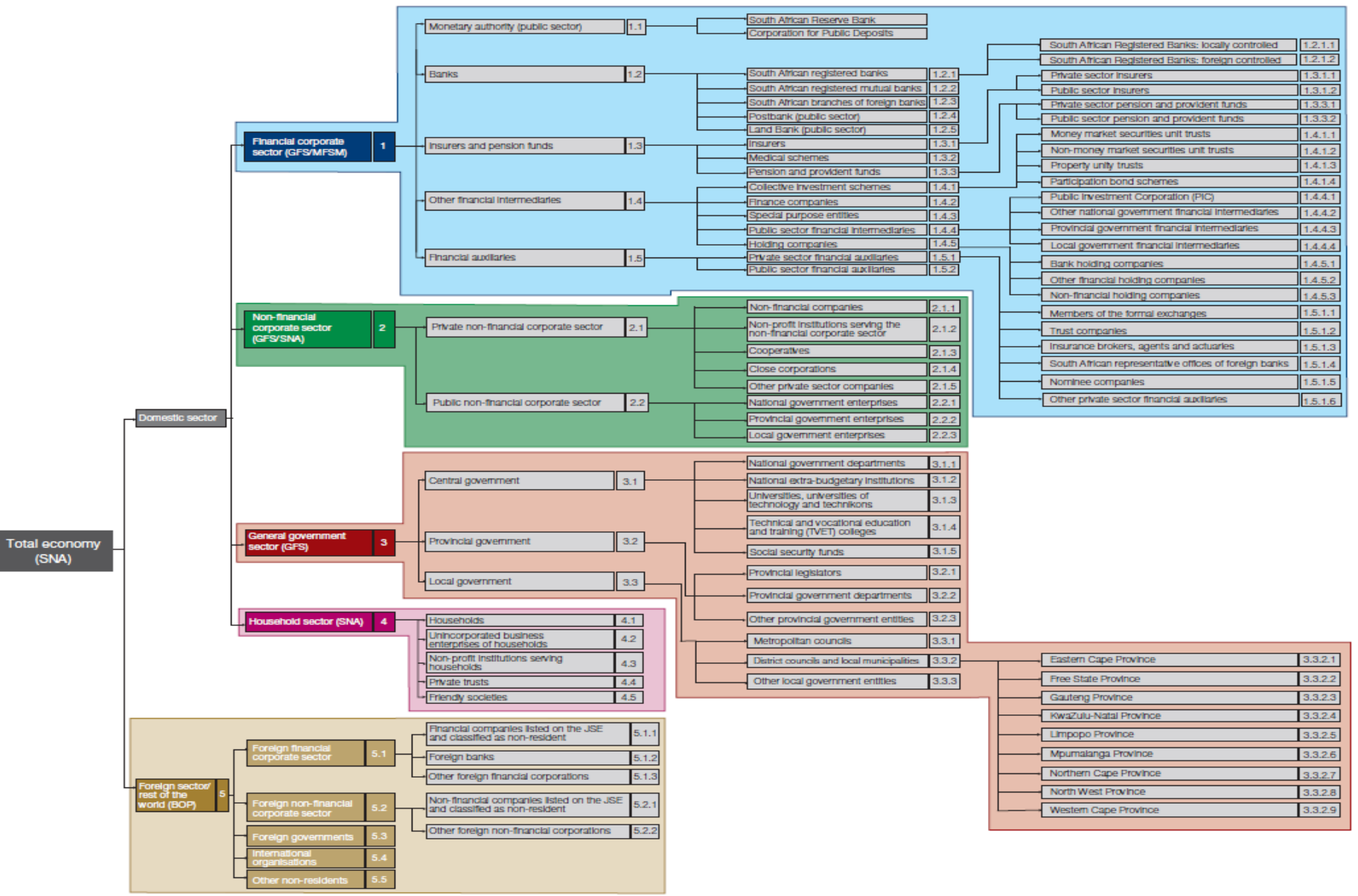


Figure 1: Institutional units and sectors



<http://www.resbank.co.za/Publications/Guides/Documents/Institutional%20Sector%20Classification%20Guide%20for%20SA%20-%202017.pdf>

Reasons for chart

- Cannot analyse economy without taking into account all four macroeconomic accounts
- All institutions must fit in somewhere in the four macroeconomic accounts
- According to the four manuals
 - Calendar year 1 Jan – 31 Dec
 - Fiscal year 1 Apr – 31 Mar
 - Three accounts accrual basis (SNA, BoP, MFSM)
 - One account cash-flow (GFS)
 - Adjustments between cash and accrual (challenged)
- Economic analysis /interlinkages in the economy
- Sectors (financial) and instruments (bonds and equity)
- Training and development

Economic analysis/interlinkages

- Design of the Chart
- Colour coded
- Segments 1-38
- Follow format of the Quarterly Bulletin
- BIG BLOCKS (Economic indicators) Philip Mohr
- SNA
 - Domestic output 2.1
 - Gross domestic expenditure 2.2
- MFSM
 - Money supply 4.1
 - Credit extension 4.2
- GFS
 - Deficit /surplus 5.8

Economic relationships

- Identity relationship:

- $GDP = GDP_{\text{agriculture}} + GDP_{\text{mining}} + GDP_{\text{manufacturing}}$
..... $GDP_{\text{Gov.Services}}$

- Trade account = $X_{\text{mining}} + X_{\text{agriculture}} + X_{\text{manufacturing}} -$
 $M_{\text{mining}} - M_{\text{agriculture}} - M_{\text{manufacturing}}$

- Money supply = $M1 + M2 + M3$

- $G - T = \text{Deficit}$

- Behavioural relationship:

- $C_t = a + b.Yd_t + d.\text{interestrate}_t + \varepsilon_t$

G-20 Integrated Economic Accounts

- Global financial crisis of 2007/08 underscored the gaps in availability of *key information (economic data)* for policy making and for the timely assessment of risks across countries
 - 85% global GDP
 - 75% global trade
- October 2009 (G-20 – Data Gaps Initiatives) 20 Recommendations
- Recommendation 15 (sectorial balance sheets)
 - Financial sector (public and private)
 - Non-financial sector (public and private)
 - General government sector
 - Household sector
 - Foreign sector
- Bubbles in the economy (enough assets to cover liabilities = financial net worth) = strong feedback between financial sector and real sector
- Financial stability analysis and global monitoring of financial stability risks
- A set of Integrated Economic Accounts
 - SNA 1993/2008
 - GFS 2001/2014
 - BOP 2005/2006
 - MFSM 2000 (revised)

History of the System of National Accounts (SNA)

Historic Versions of the System of National Accounts

The broad objective of the System of National Accounts (SNA) is to provide a comprehensive conceptual and accounting framework for compiling and reporting macroeconomic statistics for analysing and evaluating the performance of an economy.

1947 The origins of the SNA trace back to the **1947 Report** of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts under the leadership of Richard Stone.

At its first session in 1947, the United Nations Statistical Commission (UNSC) emphasized the need for international statistical standards for the compilation and updating of comparable statistics in support of a large array of policy needs.

In view of the emphasis on international statistical standards throughout the history of the Commission, the following national accounts standards were produced:

1953 The **1953 SNA** was published under the auspices of the UNSC. It consisted of a set of six standard accounts and a set of 12 standard tables presenting detail and alternative classifications of the flows in the economy. The concepts and definitions of the accounts were widely applicable for most countries, including developing countries. Two slightly modified editions of the 1953 SNA were published.

1960 The **first revision in 1960** reflected comments on country experience in the implementation of the 1953 SNA.

1964 The **second revision in 1964** improved consistency with the International Monetary Fund's Balance of Payments Manual.

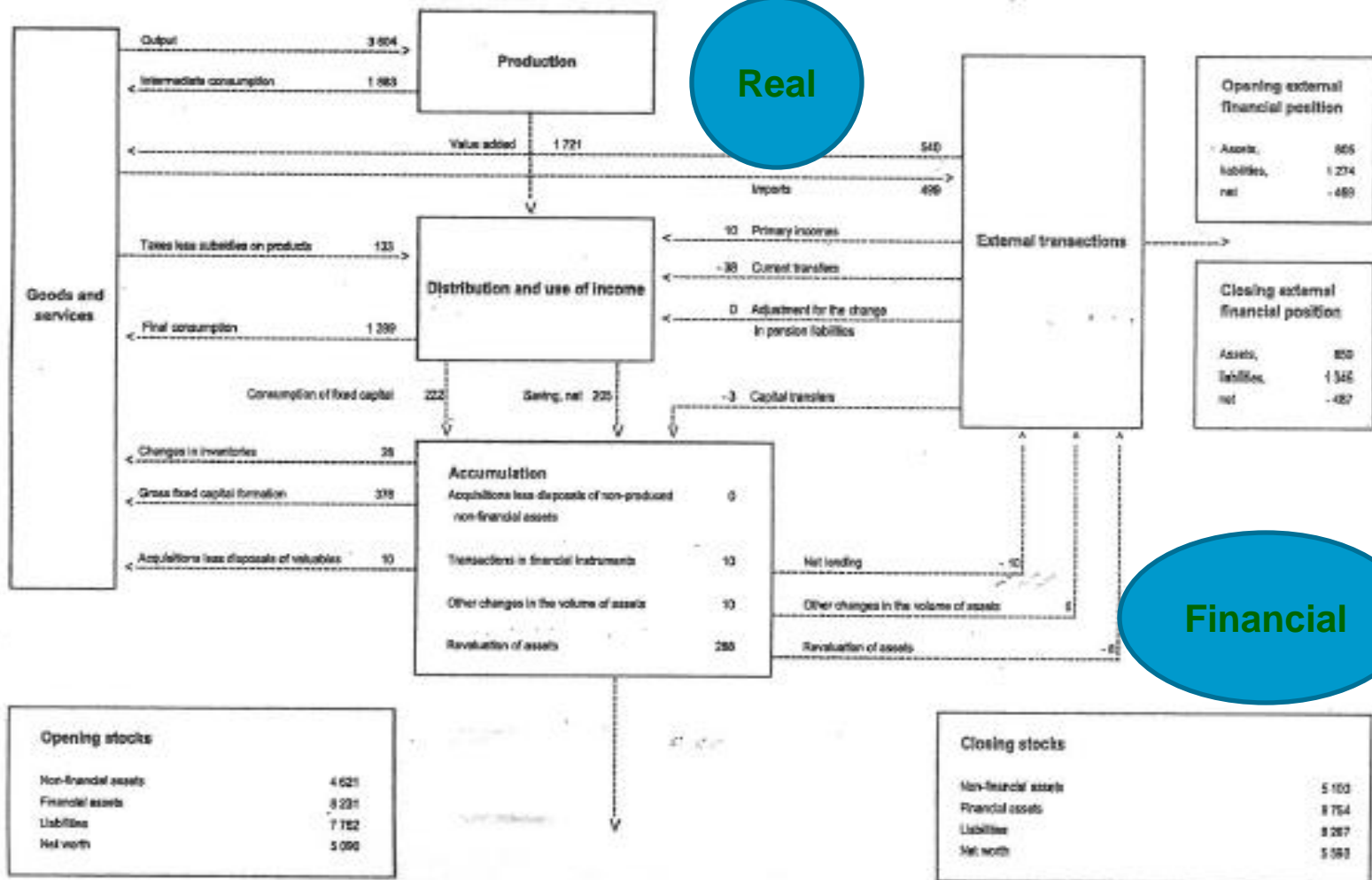
1968 The **1968 SNA** extended the scope of the national accounts substantially by; adding input-output accounts and balance sheets; giving more attention to estimates at constant prices; and making a comprehensive effort to bring the SNA and the Material Product System (MPS) closer together.

1993 The **1993 SNA** represents a major advance in national accounting and embodies the result of harmonizing the SNA and other international statistical standards more completely than in previous versions.

2008 The **2008 SNA**, which is an update of the 1993 SNA, addresses issues brought about by changes in the economic environment, advances in methodological research and the needs of users.

Integrated analytical framework of SNA 2008

$$Y = C + I + G + X - M$$



Statistical table S-133

Production, distribution and accumulation accounts of South Africa

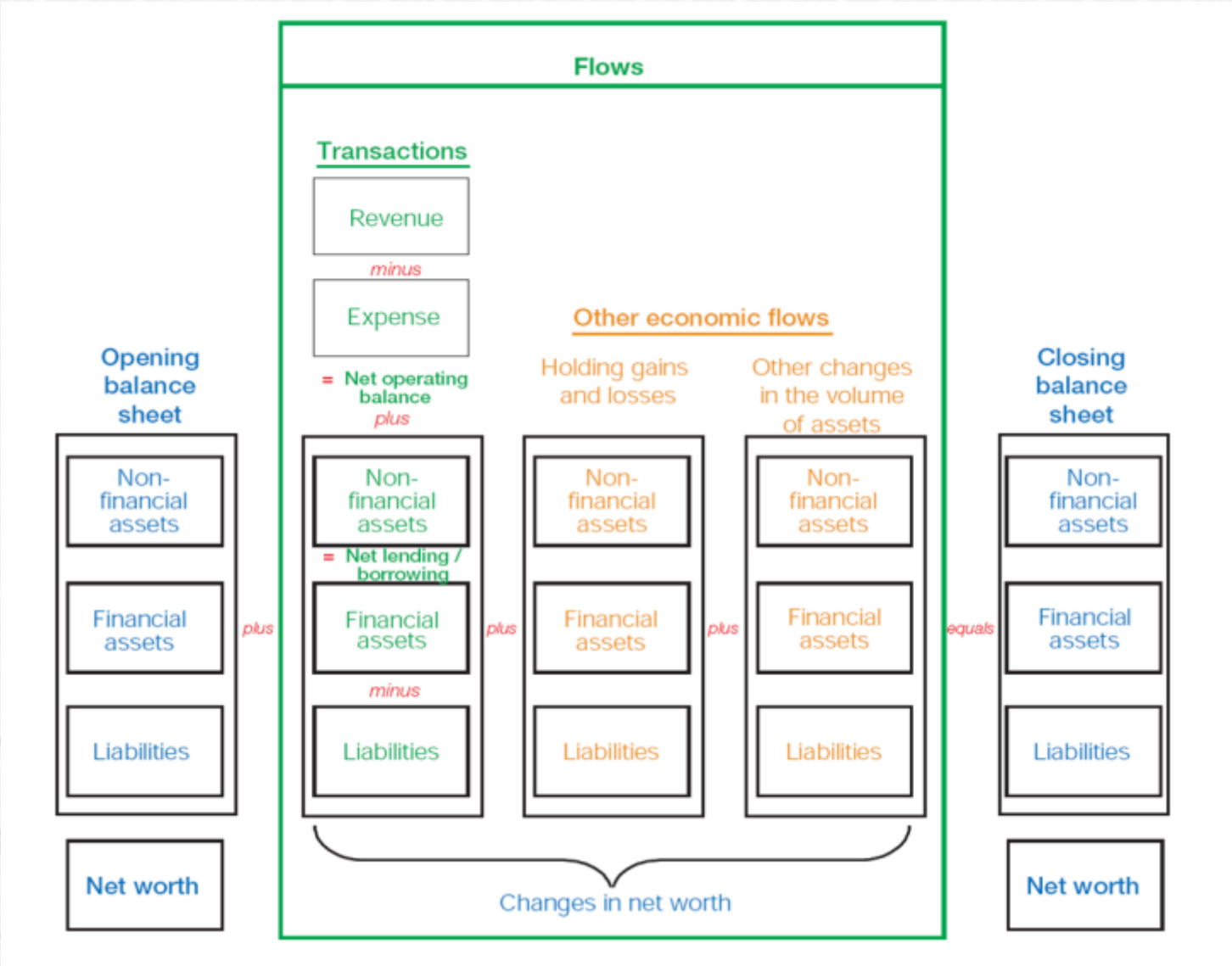
Total domestic economy

At current prices

R millions

		2007	2008	2009	2010	2011	2012	2013	2014	
Production account	Output at basic prices ¹ (6870J)	4 268 063	4 859 903	5 063 907	5 461 575	5 932 595	6 461 086	6 976 884	7 429 270	
	Less: Intermediate consumption (6871J)	2 383 340	2 722 713	2 786 761	2 966 715	3 207 572	3 521 443	3 803 922	4 024 170	
	Gross value added at basic prices (6645J)	1 884 723	2 137 190	2 277 146	2 494 860	2 725 023	2 939 643	3 172 962	3 405 100	
	Taxes on products (6603J)	230 000	242 456	237 117	264 191	310 304	336 480	373 564	404 939	
	Less: Subsidies on products (6604J)	5 221	10 583	6 586	11 043	10 376	13 578	12 199	12 972	
	Gross domestic product at market prices (6006J)	2 109 502	2 369 063	2 507 677	2 748 008	3 024 951	3 262 545	3 534 327	3 797 067	
Generation of income account	Less: Compensation of employees (6000J)	897 739	1 020 736	1 106 193	1 234 706	1 358 111	1 473 852	1 610 646	1 732 809	
	Less: Taxes on production and imports (6004J)	264 044	278 640	278 015	309 273	360 771	391 516	437 316	476 588	
	Subsidies (6005J)	12 321	19 330	15 976	20 833	17 041	22 536	19 702	20 993	
	Gross operating surplus/mixed income (6212J)	960 040	1 089 017	1 139 445	1 224 862	1 323 110	1 419 713	1 506 067	1 608 663	
Allocation of primary income account	Compensation of employees ² (6240J)	895 074	1 017 963	1 103 863	1 232 646	1 356 173	1 471 904	1 606 592	1 730 845	
	Taxes on production and imports (6004J)	264 044	278 640	278 015	309 273	360 771	391 516	437 316	476 588	
	Less: Subsidies (6005J)	12 321	19 330	15 976	20 833	17 041	22 536	19 702	20 993	
	Property income received (6872J)	657 204	790 317	713 072	667 660	730 177	778 326	792 415	861 251	
	Interest (6873J)	456 131	604 094	543 401	494 139	497 726	526 999	549 182	614 436	
	Dividends (6874J)	200 406	185 095	168 185	168 856	226 041	244 846	235 358	259 980	
	Rent ³ (6875J)	665	1 128	1 486	4 665	6 410	6 461	7 675	6 635	
	Less: Property income paid (6876J)	723 357	861 419	766 901	724 199	805 570	864 714	883 149	960 831	
	Interest (6877J)	459 364	617 553	558 540	510 803	518 767	558 501	590 349	661 343	
	Dividends (6878J)	263 326	242 738	206 675	208 731	290 393	299 732	284 925	312 653	
	Rent ³ (6879J)	665	1 128	1 486	4 665	6 410	6 461	7 675	6 635	
		Gross national income (6016J)	2 040 684	2 295 188	2 451 518	2 689 409	2 947 620	3 174 209	3 441 539	3 695 523
	Secondary distribution of income account	Other current transfers received (6880J)	31 766	37 984	43 693	34 761	45 432	49 003	67 066	79 820
Current international co-operation (6881J)		1 107	2 109	1 342	1 333	1 870	1 845	3 271	1 633	
Miscellaneous current transfers (6882J)		30 661	35 675	42 351	33 428	43 562	47 158	63 617	78 187	
Less: Other current transfers paid (6883J)		48 343	56 890	66 121	51 523	59 631	60 372	97 754	114 268	
Current international co-operation (6884J)		21 450	26 489	27 172	20 491	19 353	35 732	41 533	47 873	
Miscellaneous current transfers (6885J)		26 893	30 401	38 949	31 032	40 278	44 640	56 221	66 395	
	Gross disposable income (6018J)	2 024 109	2 276 282	2 429 090	2 672 647	2 933 421	3 142 840	3 410 873	3 661 075	
Use of disposable income account	Less: Final consumption expenditure (6620J)	1 672 783	1 863 813	1 990 406	2 177 748	2 400 720	2 625 456	2 859 263	3 071 067	
	Individual consumption expenditure (6686J)	1 471 005	1 629 166	1 728 618	1 868 165	2 062 465	2 275 022	2 475 178	2 651 023	
	Collective consumption expenditure (6606J)	201 778	234 647	261 788	289 583	318 255	350 434	384 105	420 044	
	Less: Residual ⁴ (6011J)	22 199	-4 801	-12 110	-74	18 906	23 526	44 220	23 844	
	Gross saving (6203J)	329 127	417 270	450 794	494 973	513 795	493 858	507 370	566 164	
	Less: Consumption of fixed capital ⁵ (6002J)	263 686	314 533	344 437	362 397	379 044	412 994	461 065	522 116	
	Net saving (6887J)	65 439	102 737	106 357	132 576	134 751	80 864	46 305	44 048	
Capital account	Gross saving (6203J)	329 127	417 270	450 794	494 973	513 795	493 858	507 370	566 164	
	Capital transfers, receivable (6888J)	36 803	44 000	38 782	39 933	45 844	45 610	49 367	48 894	
	Capital transfers, payable (6889J)	-36 606	-43 792	-38 566	-39 706	-45 603	-45 371	-49 124	-48 658	
	Less: Change in assets (6180J)	442 690	548 442	519 212	536 218	579 082	655 562	711 144	772 806	
	Gross fixed capital formation (6009J)	435 548	556 997	539 440	529 431	566 676	614 505	706 357	769 230	
	Change in inventories ⁶ (6010J)	7 142	-8 555	-20 226	6 787	12 406	41 057	2 787	3 576	
	Net lending (+)/net borrowing (-) (6672J)	-113 366	-130 964	-68 202	-41 020	-65 046	-161 465	-203 531	-206 408	

Integrated analytical framework of GFSM 2014



Statistical table S-65

Government finance statistics of national government¹ Statement of sources and uses of cash

R millions

Year ended 31 March	2013/2014			2014/2015					2015/2016	
	04	01	2014	02	03	04	01	2015	02	03
Net cash flow from operating activities (4700K)	-22 277	-24 881	-138 417	-25 012	-77 365	-20 442	-23 732	-146 550	-32 301	-80 210
Cash receipts from operating activities..... (4701K)	242 763	255 773	924 176	233 807	228 546	264 593	279 428	1 006 375	247 387	263 225
Taxes..... (4702K)	235 720	252 262	898 413	220 771	224 842	259 361	279 385	984 359	242 417	243 915
Social contributions..... (4703K)	-	-	-	-	-	-	-	-	-	-
Grants ² (4175K)	288	97	1 722	571	528	111	741	1 951	274	1 298
Other receipts ³ (4704K)	6 754	3 414	24 040	12 465	3 176	5 121	-698	20 065	4 696	18 012
Cash payments for operating activities..... (4705K)	265 040	280 655	1 062 592	258 819	305 911	285 035	303 160	1 152 925	279 688	343 435
Compensation of employees..... (4706K)	28 674	30 282	115 569	29 449	30 402	29 947	30 219	120 016	31 414	33 872
Purchases of goods and services..... (4707K)	12 131	10 564	37 088	10 541	11 484	14 964	12 321	49 309	12 949	13 270
Interest..... (4178K)	18 395	33 571	101 090	20 181	36 327	20 108	38 088	114 704	19 577	43 044
Subsidies..... (4708K)	9 658	9 658	38 634	6 386	8 137	8 137	9 889	32 550	8 805	8 805
Grants ⁴ (4709K)	164 597	163 222	639 711	158 330	182 232	174 964	174 023	689 549	170 178	196 213
Social benefits..... (4710K)	27 967	29 621	113 013	29 001	32 496	32 067	33 512	127 077	33 454	33 812
Other payments ⁵ (4711K)	3 618	3 736	17 488	4 931	4 834	4 848	5 108	19 720	3 311	14 419
Net cash flow from investment in non-financial assets (4712K)	-5 602	-8 819	-20 232	-2 527	-4 440	-4 937	-9 783	-21 686	-3 080	-4 354
Purchases of non-financial assets..... (4181K)	5 603	8 823	20 269	2 533	4 447	4 945	9 840	21 764	3 089	4 382
Sales of non-financial assets..... (4173K)	2	5	37	6	7	8	57	78	9	28
Cash surplus (+)/deficit (-) (4713K)	-27 879	-33 700	-158 649	-27 538	-81 805	-25 379	-33 514	-168 237	-35 380	-84 564
Net cash flow from financing activities (4714K)	64 610	16 803	180 280	46 125	71 432	55 884	9 823	183 263	43 587	38 689
Net acquisition of financial assets other than cash ⁶ (4715K)	-81	-119	-1 208	-922	-79	-65	842	-223	-897	-12 668
Net incurrence of liabilities ⁷ (4716K)	64 691	16 922	181 488	47 047	71 510	55 949	8 980	183 486	44 485	51 357
Domestic..... (4717K)	65 722	17 308	175 756	54 501	48 944	56 868	9 338	169 650	45 390	51 682
Foreign..... (4718K)	-1 031	-385	5 732	-7 454	22 567	-919	-357	13 836	-905	-324
Net change in stock of cash ⁸ (4719K)	36 731	-16 897	21 631	18 586	-10 373	30 505	-23 692	15 026	8 207	-45 875

Economic interpretation

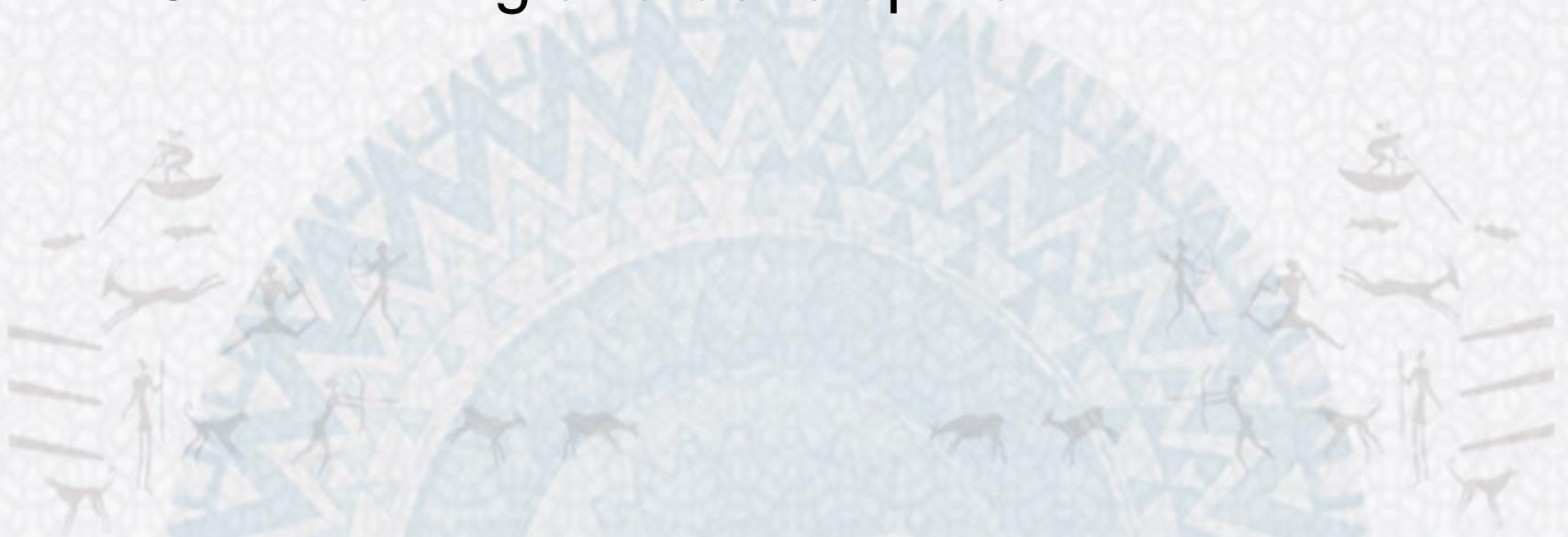
Economic interpretation

- = Accounting → Economics
- = Financial statements
 - Income statement
 - Cash-flow statement
 - Balance sheet
- = Surveys
 - Population
 - Sample
- = Time series (D,W,M,Q,Y,F)
- = Data
- = Interpretations
- = Economic sense
- = Forecasting
- = Policy makers



Training and development

- Career planning further studies
 - Masters or PhD
- Rotation
- Circular flow
- Specialisation
- Own training and development



Booklet

- Real sector vs Financial sector
- Definitions
- Flow of chart
- Slice and dice
- Sectors and instruments
- Use for Pre-MPC (discussion)
- Various forms being used in the Department (NO1, B03, C68 and F02)
- Balance sheet or income statement
 - Balance sheet – stock position
 - Income statement – flow position

CHART



Integrated economic approach

G-20 requirements (20)

Recommendation 15 - Sectoral balance sheet

		ASSETS						LIABILITIES							
		NFC's	FC's	GG	HH	NPISH	ROW	NFC's	FC's	GG	HH	NPISH	ROW		
Opening BS	Non-financial assets						N/A	N/A	N/A	N/A	N/A	N/A	N/A	Non-financial liabilities	Opening BS
	Non-produced non-financial assets						N/A	N/A	N/A	N/A	N/A	N/A	N/A	Non-produced non-financial liabilities	
	Financial assets													Financial liabilities	
Total changes	Non-financial assets						N/A	N/A	N/A	N/A	N/A	N/A	N/A	Non-financial liabilities	Total changes
	Non-produced non-financial assets						N/A	N/A	N/A	N/A	N/A	N/A	N/A	Non-produced non-financial liabilities	
	Financial assets	NOT PART OF BS PROJECT SCOPE						NOT PART OF BS PROJECT SCOPE						Financial liabilities	
Closing BS	Non-financial assets						N/A	N/A	N/A	N/A	N/A	N/A	N/A	Non-financial liabilities	Closing BS
	Non-produced non-financial assets						N/A	N/A	N/A	N/A	N/A	N/A	N/A	Non-produced non-financial liabilities	
	Financial assets													Financial liabilities	

Balance sheet –financial assets/liabilities

Monetary gold and SDRs	
F11	Monetary gold
F12	SDRs
Currency and deposits	
F21	Currency
F22	Transferable deposits
F29	Other deposits
Debt securities	
F31	Short-term
F32	Long-term
Loans	
F41	Short-term
F42	Long-term
Equity and investment fund shares	
F51	Equity
F52	Investment fund shares/units
F521	Money market fund shares/units
F522	Non MMF investment fund shares/units
Insurance, pension and standardized guarantee schemes	
F61	Non-life insurance technical reserves
F62	Life insurance and annuity entitlements
F63+F64+F65	Retirement entitlements
F66	Provisions for calls under standardized guarantees
F7 Financial derivatives and employee stock options	
F71	Financial derivatives
F72	Employee stock options
F8 Other accounts receivable/payable	
F81	Trade credits and advances
F89	Other accounts receivable/payable

Balance sheet –non-financial assets

Net cash outflow from investments
Fixed assets
<i>Buildings and structures</i>
Dwellings/residential
Buildings other than dwellings/non-residential buildings
Other structures/construction works
Land improvements
<i>Machinery and equipment</i>
Transport equipment (including military transport equipment)
Machinery and equipment not elsewhere classified (including military weapons)
Information, computer, and telecommunication (ICT) equipment
Office furniture
<i>Other fixed assets</i>
Cultivated biological resources
Intellectual property products
Research and Development (R&D)
Mineral exploration and evaluation
Computer software and databases
Entertainment, literary, and artistic originals
Other intellectual property products
Inventories
Materials and supplies (including military weapons)
Work in process
Finished goods
Goods for resale
Valuables
Non-produced assets
Land
Subsoil assets
Other naturally occurring assets
Intangible non-produced assets
Unallocable non-financial assets - net

CONCLUSION

- No means exhaustive
- Each division use area to expand
- Time series structure
- Overview
- Reasons for changes
- Should be able to read the *Quarterly Bulletin* from cover to cover- ultimate
- Statistical tables:
<http://www.resbank.co.za/Publications/Detail-Item-View/Pages/Publications>.
 - Money and banking S2-S29
 - Capital markets S30-S47
 - Public Finance S48-S79
 - International economic relations(BoP) S80-S107
 - National accounts S108-S135
 - General economic indicators S136-S145
 - Key information S146-S157





South African Reserve Bank

Thank you

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