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PREFACE

This report contains the final social accounting matrix (SAM) for 1998, constructed according to the recommendations of the 1993 System of National Accounts (1993 SNA), which Statistics South Africa (Stats SA) has been implementing since 1995. It is closely linked to the 1998 Supply and Use tables (SU-tables) (Report No. 04-04-01(1998) updated for the purpose of the construction of the 1998 SAM), as well as the Integrated Economic Accounts compiled by the South African Reserve Bank (SARB).

The 1993 SNA defines a SAM as “..... *the presentation of SNA accounts in a matrix which elaborates the linkages between Supply and Use tables and institutional sector accounts*”.

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Pretoria
November 2002

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INTERPRETIVE SUMMARY

Building various kinds of econometric models by using the information on the numerous variables contained in the social accounting matrix (SAM) is one of the main applications of a SAM. These econometric models are then used to design policies in order to address the key focus areas of government, the reduction of poverty being one example.

As the main focus of the 1998 SAM is on households, their consumption expenditure is broken down into four population and twelve expenditure groups. The information contained in this SAM will therefore be very useful in the analysis of poverty and income distribution.

The aim of this report is not to do a detailed analysis or any policy simulations but rather to construct a SAM and to give a theoretical background on how this was done. Statistics South Africa (Stats SA) plans to publish a detailed analysis document on the SAM during 2003.

The following figures, however, gives some indication of how useful the data contained in the SAM can be.

Figure 1 – Total household expenditure on products: 1998

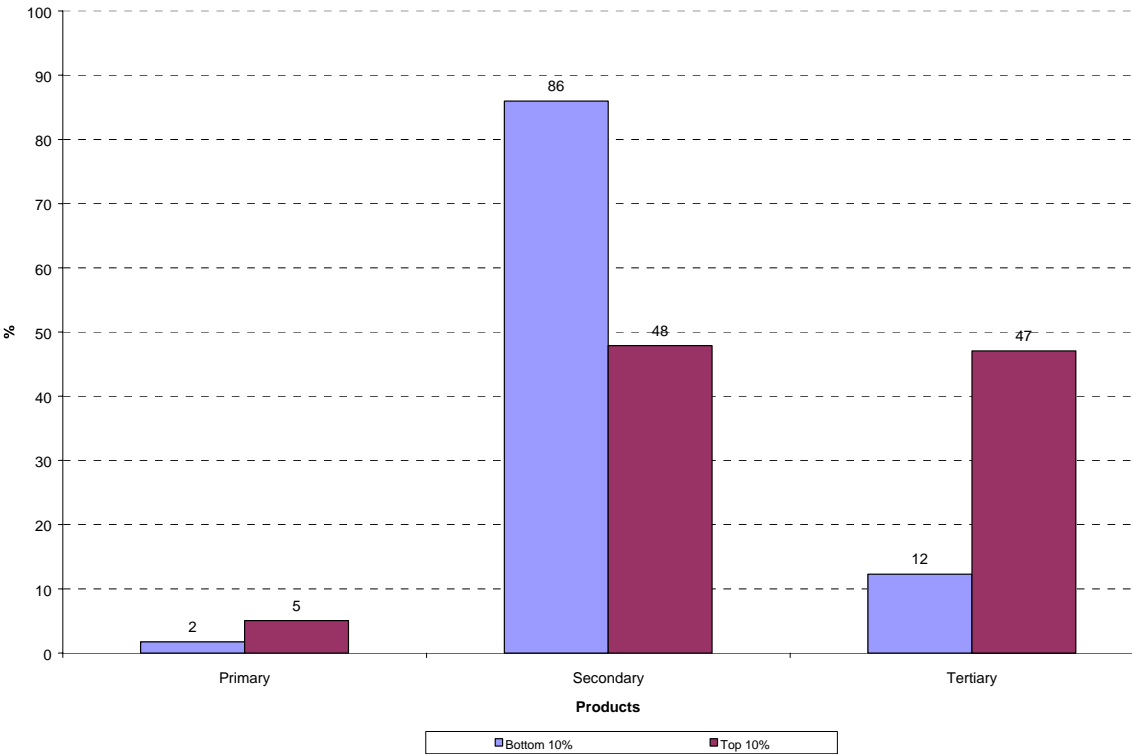


Figure 1 shows that in 1998, the bottom 10% of households spent 86% of their total expenditure on secondary products. Of this amount, 77% was spent on food, beverages and tobacco products and 8% on petroleum, chemical, rubber and plastic products (SAM.xls on diskette).

The bottom 10% of coloured and African households spent 88% and 86% respectively of their total household expenditure on secondary products. For both groups, the major portion of this was on food, beverages and tobacco products (79% and 77% respectively). The second highest contribution to total expenditure on secondary products by coloured and African households was on petroleum, chemical, rubber and plastic products (6% and 8% respectively) and electricity (6%) by coloured households.

A similar pattern is observed in the bottom 10% of white and Indian households, where 81% and 80% of total household expenditure was on secondary products. Again the highest contribution of this expenditure was on food, beverages and tobacco products (71% and 75% respectively). The second highest contribution to total household expenditure on secondary products by Indian households was on petroleum, chemical, rubber and plastic products (7%) and electricity (7%), with white households spending the second highest contribution on electricity (11%).

The top 10% of households (figure 1, p. 1), however, spend 48% and 47% respectively on secondary and tertiary products. Of the amount spent on secondary products, the major portion of this was spent on food, beverages and tobacco products (34%) whilst the major contribution towards tertiary products was spent on real estate (26%).

The top 10% of coloured, Indian and African households spend most of their total expenditure on secondary products (59%, 57% and 53% respectively), compared with white households who spend the largest proportion of their total expenditure (49%) on tertiary products.

The major contribution to total household expenditure on secondary products by African and coloured households in the top 10% of total households was on food, beverages and tobacco products (34% and 38% respectively), whilst the major contribution of these groups to total household expenditure on tertiary products was on financial intermediation and financial services indirectly measured (FSIM) (21% and 24% respectively). The major contribution to total expenditure on secondary products by the top 10% of Indian and white households was also on food, beverages and tobacco products (35% and 33% respectively). The major contribution to total expenditure on tertiary products by the top 10% of Indian and white households was on financial intermediation and FSIM (19% and 23% respectively) as well as on real estate (19% and 30% respectively).

Figure 2 – Total salaries and wages earned in different industries: 1998

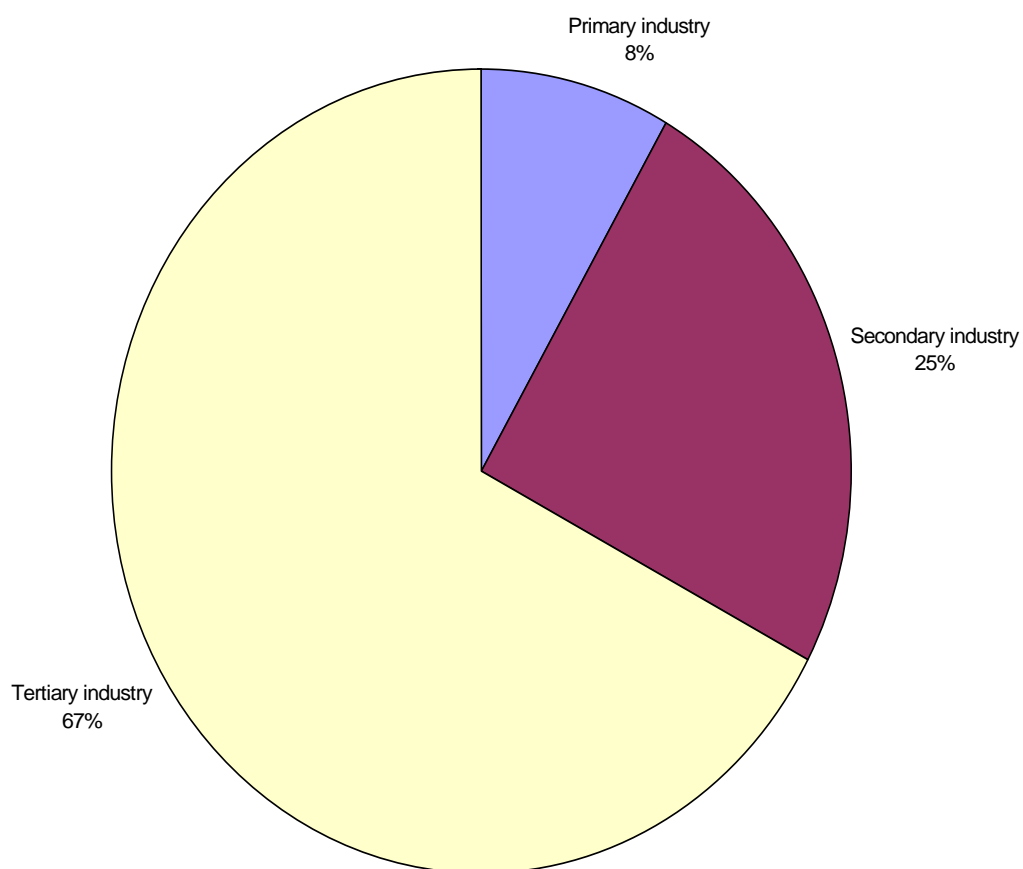


Figure 2 indicates that 67% of total salaries and wages earned in 1998 was earned in tertiary industries (67%), followed by secondary (25%) and primary industries (8%).

Figure 3 – Salaries and wages according to skill level and industry: 1998

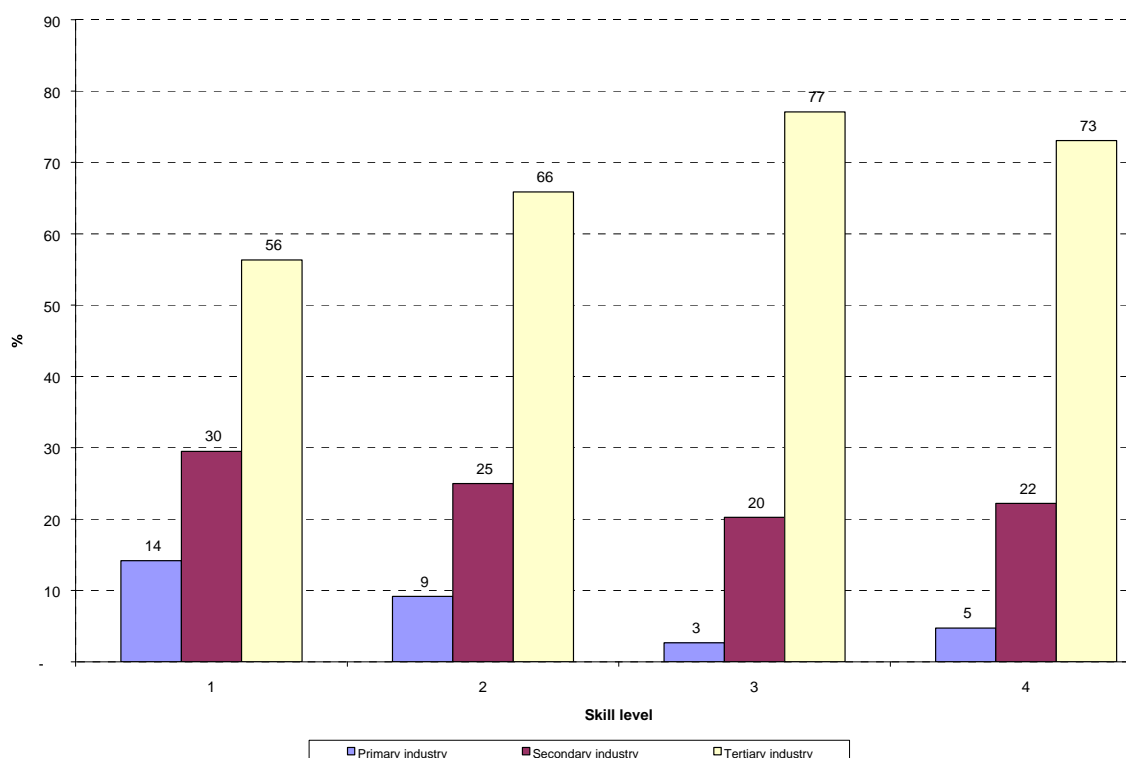


Figure 3 shows that workers from all skill levels earned most of their salaries and wages in tertiary industry in 1998. Workers with skill levels of 1 and 2 earned 14% and 9% respectively of their total salaries and wages in primary industry. This is in contrast with workers with skill levels of 3 and 4 where workers earned 3% and 5% respectively of their total salaries and wages in the primary industry.

Africans (46%) formed the major part of workers with a skill level of 2, followed by whites (37%), coloureds (12%) and Indians (5%) (SAM.xls on diskette). The major part of total salaries and wages for all four population groups with a skill level of 2 was earned in the general government industry with whites (38%) forming the majority followed by Africans (35%), coloureds (30%) and Indians (24%). The second highest earnings for workers with a skill level of 2 was in the trade industry with Indians (19%) forming the majority followed by coloureds (16%), Africans and whites (11%).

The other activities/ services industry was the industry where the major part of Africans (42%), coloureds (29%) and Indians (20%) with a skill level of 4 earned their salaries and wages. The major part of whites with a skill level of 4, however, earned their money in the general government industry (18%). The second highest earnings for African (22%) and coloured (18%) workers with a skill level of 4 were in the general government industry. Indian workers with a skill level of 4, however, earned the second highest earnings in the trade industry (15%) with white workers earning it in the trade and financial intermediation industries (11%).

Figure 4 – Total salaries and wages by population group and industry: 1998

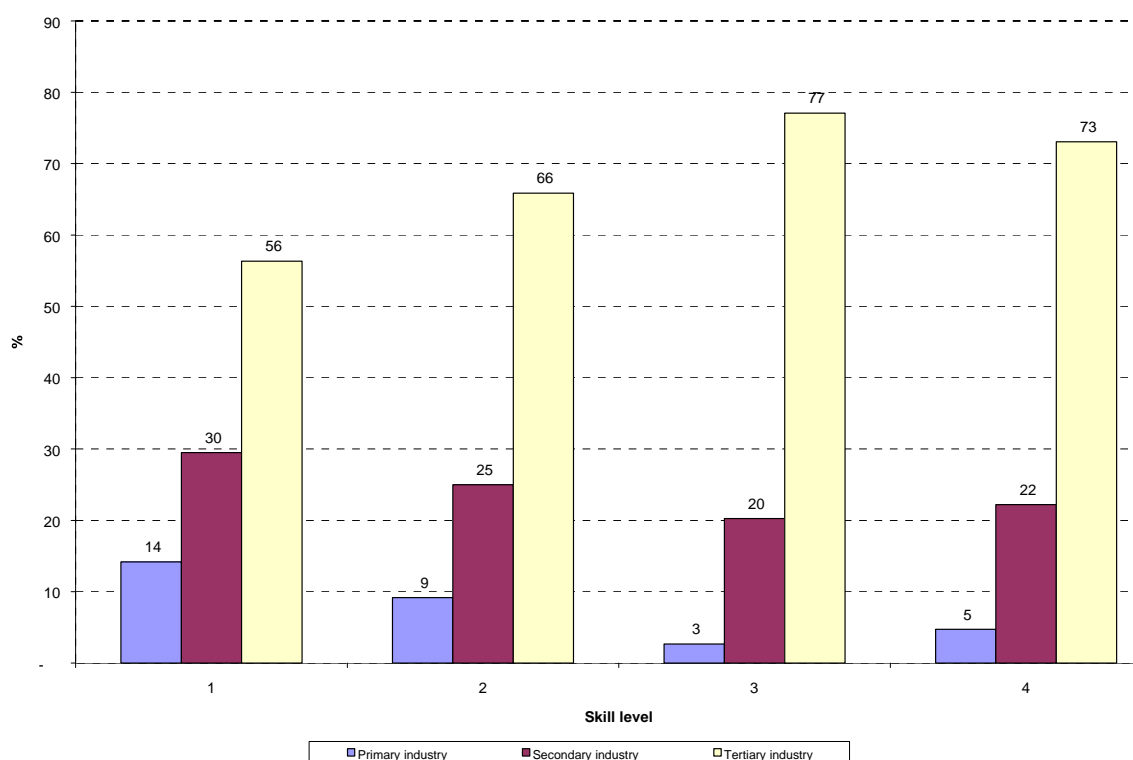


Figure 4 shows that in 1998 all four population groups earned between 64% and 70% of their total salaries and wages in tertiary industries. Of the four population groups, Africans earned the most in primary industries (13% of their total salaries and wages), followed by whites (6%), coloureds (5%) and Indians (2%).

The general government industry was the tertiary industry in which all four population groups earned the most of their salaries and wages, with Africans earning 48%, followed by coloureds (42%), whites (38%) and Indians (28%) (SAM.xls on diskette).

For primary industry, however, the picture looked a bit different with Indian and white workers earning the most of their salaries and wages in the other mining industry (73% and 46% respectively), African workers in the gold industry (46%) and coloured workers in the Agriculture industry (73%).

METHODOLOGICAL NOTES

Background

Statistics South Africa (Stats SA) implemented the 1993 System of National Accounts (1993 SNA) in 1999 in conjunction with rebasing and benchmarking gross domestic product (GDP) estimates. The results were published in “Statistical Release P0441 – Gross Domestic Product, Revised estimates 1993-1998 and First quarter 1999”.

Stats SA compiled the first official Supply and Use tables (SU-tables) for South Africa for the 1993 reference year according to the recommendations of the 1993 SNA and published them in December 1999. At that stage Stats SA announced that it would be compiling SU-tables annually as from the 1998 reference year, to ensure that an extended time-series of SU-tables is developed to assist in analysing and evaluating the performance of the economy over time. Stats SA has now published SU-tables for the 1993, 1998 and 1999 reference years. The SU-tables are intended to include all the transactions in goods and services in an economy for a specific year, e.g. 1998, in a matrix format. They allow for close examination of the consistency of the national accounts by linking and integrating the various components within a single framework.

The presentation of national accounts in a matrix has a long and distinguished tradition. In the System of National Accounts (SNA) the accounting structure was explained on the basis of an illustrative matrix covering the full System and in addition much emphasis was given to the System as a basis for supply and use analysis in an input-output framework. The input-output framework is a widely used matrix framework to provide detailed and coherently arranged information on the flow of goods and services and on the structure of production costs. Disaggregated linkages between the accounts for goods and services, the production and generation of income are further developed in the 1993 SNA's SU-tables, through a specification of output of categories of goods and services by industry. However, those matrices do not incorporate the interrelationships between value added and final expenditures. By extending SU-tables to show the entire circular flow of income at a meso-level, one captures an essential feature of a social accounting matrix (SAM). In many instances SAMs have been applied to an analysis of interrelationships between structural features of an economy and the distribution of income and expenditure among household groups. Evidently, SAMs are closely related to national accounts, in that their typical focus on the role of people in the economy is reflected by, among other things, extra breakdowns of the household sector and a disaggregated representation of labour markets e.g., distinguishing various categories of employed persons. On the other hand, SAMs usually encompass somewhat less detailed SU-tables. The design and construction method of SAMs are not standardised according to the SNA, in order to give countries the flexibility to design a SAM according to their specific situations.

Since every economic model has its corresponding accounting framework, and since every such framework can be set out as a SAM, it follows that every economic model has a corresponding SAM. Implicitly, if not explicitly, all multi-sector economic models require a SAM for the country, or group of countries, to which they refer. The reliability of the policy experiments conducted using such models depends upon the reliability of the SAM used to

calibrate the model. Consequently, there is an ongoing need to develop and keep current multi-sector databases consistent.

As an extension of the implementation of the 1993 SNA, Stats SA has now compiled a SAM for the 1998 reference year. A SAM is an extension of the SU-tables and elaborates the linkages between a SU-table and institutional accounts. The previous SAM compiled for South Africa by Stats SA was for the 1988 reference year and according to the 1968 SNA. Table A compares the data sources used for the 1988 and 1998 SAMs.

Developing a SAM is both difficult and time consuming. The required data are typically collected from a number of different sources, e.g., National Accounts, Integrated Economic Accounts, population censuses, household income and expenditure surveys, etc. Although some of the data should have been reconciled, such as national accounts and inter-industry tables, much of the data used will not be immediately consistent; e.g., household and manufacturing surveys often refer to different years. The problem therefore is to find an efficient method to incorporate and reconcile data from a variety of sources and time periods.

Table A – Main data sources of the 1988 and 1998 SAM

1988 SAM	1998 SAM
1988 Input-Output tables and National Accounts statistics	1998 Supply and Use tables (unpublished) and National Accounts statistics
	1998 Integrated Economic Accounts (unpublished)
1991 Population Census for South Africa	1996 Population Census for South Africa
1990 Household Income and Expenditure survey	1995 Household Income and Expenditure survey
Published and unpublished data from the South African Reserve Bank e.g. Remuneration of foreign and domestic workers	Published and unpublished data from the South African Reserve Bank e.g. Remuneration of foreign and domestic workers

Table B (p. 9) outlines the characteristics of the 1988 and the 1998 SAMs. The characteristics are compared in respect of the methodology and classification systems used as well as the level of detail available for various variables.

Table B – Comparison of the most important characteristics of the 1988 and 1998 SAM

1988 SAM	1998 SAM
<p>Compiled according to the 1968 SNA</p> <p>Compiled according to the Standard Industrial Classification of all Economic Activities (Fourth Edition)</p> <p>Emphasis on income distribution</p> <p>23 Industries</p> <ul style="list-style-type: none"> Agriculture, hunting, forestry and fishing Coal mining Gold mining Other mining activities Manufacturing of food, beverages and tobacco products Manufacturing of textiles, clothing and leather products Manufacturing of wood and wood products, including furniture Manufacturing of paper and paper products, printing and publishing Manufacturing of chemicals and chemical products Manufacturing of non-metallic mineral products Basic metal industries Manufacturing of metal products, machinery and transport equipment Other manufacturing industries Electricity, gas and water Building construction Civil engineering and other construction Wholesale and retail trade Catering and accommodation services Transport and storage Communication Financing, insurance, real estate and business services Community, social and personal services Other 	<p>Compiled according to the 1993 SNA</p> <p>Compiled according to the Standard Industrial Classification of all Economic Activities (Fifth Edition)</p> <p>Emphasis on income distribution</p> <p>27 Industries</p> <ul style="list-style-type: none"> Agriculture, hunting, forestry and fishing Mining of coal and lignite Mining of gold and uranium ore Other mining activities Manufacturing of food products, beverages and tobacco products Manufacturing of textiles, clothing and leather products (except footwear) Manufacturing of footwear Manufacturing of petroleum, chemical, rubber and plastic products Manufacturing of other non-metallic mineral products Manufacturing of metal products, machinery and office equipment Manufacturing of electrical machinery and apparatus Manufacturing of radio, television and communication equipment Manufacturing of transport equipment Manufacturing of wood and wood products, including furniture, articles of straw and plaiting materials, paper and paper products, publishing, printing and reproduction of recorded media and recycling Electricity, gas, steam and hot water Collection, purification and distribution of water Construction Wholesale and retail trade Hotels and restaurants Transport and storage Post and telecommunications Financial intermediation and insurance Real estate activities Business services General government Health and social work Other community, social and personal services

Table B – Comparison of the most important characteristics of the 1988 and 1998 SAM (continued)

1988 SAM	1998 SAM
<p>Quintiles calculated on household per capita income</p> <p>Different cut-off points were used for each quintile in each population group, namely:</p> <p>All population groups</p> <p>Q1 R1 – R375</p> <p>Q2 R376 – R912</p> <p>Q3 R913 – R1 962</p> <p>Q4 R1 963 – R5 192</p> <p>Q51 R5 193 – R10 528</p> <p>Q52 R10 529 +</p> <p>White</p> <p>Q1 R1 – R5 594</p> <p>Q2 R5 595 – R9 441</p> <p>Q3 R9 442 – R14 028</p> <p>Q4 R14 029 – R21 272</p> <p>Q51 R21 273 – R31 650</p> <p>Q52 R31 651 +</p> <p>Coloured</p> <p>Q1 R1 – R733</p> <p>Q2 R734 – R1 388</p> <p>Q3 R1 389 – R2 319</p> <p>Q4 R2 320 – R4 323</p> <p>Q51 R4 324 – R6 730</p> <p>Q52 R6 731 +</p> <p>Asian</p> <p>Q1 R1 – R1 594</p> <p>Q2 R1 595 – R2 805</p> <p>Q3 R2 806 – R4 406</p> <p>Q4 R4 407 – R7 511</p> <p>Q51 R7 512 – R10 719</p> <p>Q52 R10 720 +</p> <p>Black</p> <p>Q1 R1 – R286</p> <p>Q2 R287 – R631</p> <p>Q3 R632 – R1 225</p> <p>Q4 R1 226 – R2 607</p> <p>Q51 R2 608 – R4 462</p> <p>Q52 R4 463 +</p>	<p>Quintiles calculated on total household expenditure</p> <p>The same cut-off points were used for percentiles in all the population groups, namely:</p> <p>All population groups</p> <p>P1 R1 – R540</p> <p>P2 R541 – R5 700</p> <p>P3 R5 701 – R8 496</p> <p>P4 R8 497 – R10 716</p> <p>P5 R10 717 – R12 996</p> <p>P6 R12 997 – R15 828</p> <p>P7 R15 829 – R19 992</p> <p>P8 R19 993 – R26 556</p> <p>P9 R26 557 – R37 884</p> <p>P10 R37 885 – R57 816</p> <p>P11 R57 817 – R75 840</p> <p>P12 R75 841 +</p>
<p>6 Quintiles (calculated on household per capita income)</p> <p>Q1 – 0-20% of the population</p> <p>Q2 – 21-40% of the population</p> <p>Q3 – 41-60% of the population</p> <p>Q4 – 61-80% of the population</p> <p>Q51 – 81-90% of the population</p> <p>Q52 – 91-100% of the population</p>	<p>12 Percentiles (calculated on total household expenditure)</p> <p>P1 - 0 – 5% of the population</p> <p>P2 - 6 – 10% of the population</p> <p>P3 - 11 – 20% of the population</p> <p>P4 - 21 – 30% of the population</p> <p>P5 - 31 – 40% of the population</p> <p>P6 - 41 – 50% of the population</p> <p>P7 - 51 – 60% of the population</p> <p>P8 - 61 – 70% of the population</p> <p>P9 - 71 – 80% of the population</p> <p>P10 - 81 – 90% of the population</p> <p>P11 - 91 – 95% of the population</p> <p>P12 - 96 – 100% of the population</p>

Table B – Comparison of the most important characteristics of the 1988 and 1998 SAM (concluded)

1988 SAM	1998 SAM
4 Population groups Whites Coloureds Asians Blacks	4 Population groups Whites Coloureds Indians Africans
Gender dimension not included explicitly	Gender dimension included in external matrix
Rural/urban dimension not included	Rural/urban dimension included in external matrix
Skill levels not included	4 Skill levels (linked to occupation group) included Legislators, senior officials and managers (4) Professionals (4) Technicians and associate professionals (3) Clerks (2) Service workers and shop and market sales workers (2) Skilled agricultural and fishery workers (2) Craft and related trade workers (2) Plant and machine operators and assemblers (2) Elementary occupations (excluding domestic) (1) Domestic worker (1) Occupation unspecified (1)

Overview of the 1993 SNA

The 1993 SNA is the result of a decade-long, resource-intensive process that took place under the auspices of the Inter-Secretariat Working Group on National Accounts (ISWGNA). This group consists of the Statistical Office of the European Community (EUROSTAT), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the Statistical Division (UNSTAT) and regional commissions of the United Nation’s Secretariat and the World Bank.

The System of National Account (SNA) is a set of international guidelines for the development of country economic accounts and for the reporting of such statistics to international organisations in a manner comparable across countries. The 1993 SNA, the most recent version, consists of a coherent, consistent and integrated set of macroeconomic accounts, balance sheets and tables based on a set of internationally agreed concepts, definitions, classifications and accounting rules. It provides a comprehensive accounting framework within which economic data can be compiled and presented in a format designed for purposes of economic analysis, decision-taking and policy-making. In addition, the SNA provides for satellite extensions of the basic accounting structure that use alternative concepts and incorporate a broader range of social and economic indicators.

The System is built around a sequence of interconnected flow accounts or integrated economic accounts linked to different types of economic activity taking place within a given period of time, together with balance sheets that record the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and end of the period. Each flow account relates to a particular kind of activity such as production, or the generation,

distribution, redistribution or use of income. Each account is balanced by introducing a balancing item defined residually as the difference between the total resources and uses recorded on the two sides of the account. The balancing item from one account is carried forward as the opening balance in the following account, thereby making the sequence of accounts an articulated whole. The balancing items typically encapsulate the net result of the activities covered by the accounts in question and are therefore economic constructs of considerable interest and analytical significance. There is also a strong link between the flow accounts and the balance sheets, as all the changes occurring over time that affect the assets or liabilities held by institutional units or sectors are systematically recorded in one or another of the flow accounts. The closing balance sheet is fully determined by the opening balance sheet and the transactions or other flows recorded in the sequence of accounts.

The 1993 SNA distinguishes two types of units and two methods of subdividing the economy for different analytical purposes, namely:

- institutional units and sectors, and
- establishments and industries.

Institutional units and sectors

An institutional unit is an economic entity capable, in its own right, of owning assets, incurring liabilities and engaging in economic transactions with other entities. Either complete set of accounts including balance sheets must exist for an institutional unit, or it must at least be possible, in principle, and meaningful to compile such a set of accounts. The 1993 SNA distinguishes four main categories of institutional units:

- corporations (including quasi-corporations),
- government units (including social security funds),
- households, and
- non-profit institutions (NPI).

The four main categories of institutional units can be grouped in two types with regard to how they are formed. Households, covering the individuals making up the households, constitute one type. The other categories constitute together the other type, namely legal and social entities such as corporations, non-profit institutions and government units.

In order to describe income, expenditure, financial flows and balance sheets, institutional units are grouped into sectors on the basis of their principal functions, behaviour and objectives. There are five main institutional sectors:

- non-financial corporations,
- financial corporations,
- general government, including social security funds,
- households, and
- NPIs serving households (NPISHs).

Table C (p. 13) gives a cross-classification of institutional unit by category and sector.

Table C – Institutional units cross-classified by category and sector

Sector Category	Non-financial corporations sector	Financial corporations sector	General government sector	Household sector	NPI serving household sector
Corporations	Non-financial corporations	Financial corporations			
Government units			Government units		
Households				Households	
Non-profit institutions	Non-financial market NPIs	Financial market NPIs	Non-market NPIs controlled and financed by government		Non-market NPIs serving households

Establishments and industries

An institutional unit (an enterprise) such as a corporation may be engaged in different kinds of production activities in different locations, producing various kinds of goods and services. For purpose of analysing production in detail, it is necessary to use a more homogenous unit than the enterprise. The unit is the *establishment*, defined as an enterprise or part of an enterprise, which is situated in one location and engaged in mainly one type of productive activity, which is the *principal activity*. The principal activity must generate the major part of the value added of an establishment. The output of the principal activity consists of principal products and must be suitable for delivery to other units.

An establishment can also be engaged in *secondary activities* which generate a minor part of its value added. The output of secondary activities consists of secondary products that, like principal products, must be suitable for delivery to other units.

Finally, establishments are also engaged in *ancillary activities*. The output of such activities is not intended for use outside the enterprise. They are supporting activities e.g. keeping records, purchases of materials and equipment, cleaning and maintenance of building and premises, and sales promotion.

In order to describe processes of production, establishments are grouped into industries on the basis of their type of activity described in terms of a set of inputs, a production process, and a set of outputs.

An enterprise may contain one or more than one establishment. On the other hand, an establishment can belong to only one enterprise. Establishments are designed to be units that provide data for the detailed analysis of production and production processes. It is distinct from an institutional unit – except in cases where an enterprise has only one establishment – in that it cannot in its own right own assets, incur liabilities or engage in economic transactions with other entities. Furthermore, it is not possible to compile a complete set of accounts including balance sheets for an establishment. The only data that can be meaningfully compiled for an establishment comprise:

- the items included in the production and generation of income account,
- gross fixed capital formation and changes in inventories,

- stock of fixed capital and land, and
- number of employees, types of employees and hours worked.

Establishments are classified into industries according to the International Standard Industrial Classification (ISIC). The 1993 edition of the Standard Industrial Classification of all Economic Activities (SIC), Fifth Edition (Report No. 09-90-02), was used to classify the industries or economic activities in the South African System of National Accounts. The SIC is based on the 1990 (third revision) ISIC, with suitable adaptations for local conditions. An industry is defined as a group of establishments engaged in the same, or similar, kinds of productive activity. The classification refers to the principal activity of the establishment as defined above.

Apart from many new aspects, the 1993 SNA includes a SAM. As the role of a SAM is primarily related to the integrated economic accounts, the latter are briefly discussed before attention is given to the structure of the SAM.

Central framework

The central framework of the 1993 SNA can be described as follows.

- The integrated economic accounts (table D, p. 17) contain three groups of accounts:
 - transactions accounts with the goods and services account being of particular importance,
 - a full sequence of accounts for institutional sectors and the total economy (the sum of all institutional sectors), and
 - a full sequence of accounts for the rest of the world.

The full sequence of accounts for institutional sectors and the rest of the world together with the goods and services account give a comprehensive picture of the whole economy.

- The shortened sequence of accounts for industries and the SU-tables is designed for detailed analysis of production processes and the flow of goods and services. It consists of:
 - a shortened sequence of accounts for industries,
 - goods and services accounts for detailed products (commodity flow), and
 - detailed industry accounts and detailed goods and services accounts, which together form SU-tables.

A cross-classification of the production and generation of income account links the shortened sequence of accounts for industries to the integrated economic accounts by institutional sectors and industries.

- The flow of funds accounts provide the framework for a detailed analysis of financial transactions and stocks of financial assets and liabilities. The relations between institutional sectors are depicted by cross-classifications of debtor and creditor sectors by types of financial instruments.
- The functional analysis, in which certain transactions of institutional sectors are presented according to the purpose they serve.
- The population and employment tables.

Valuation concepts

The 1993 SNA clarifies, inter alia, the concepts and definitions used for the valuation of output of goods and services, intermediate consumption, and value added. The concepts and definitions applicable to the SU-tables and the SAM are briefly discussed below.

Output of goods and services

Output consists only of those goods and services that are produced within an establishment and that become available for use outside that establishment and for own final use in that establishment. Output may be valued in various ways. The 1993 SNA prescribes three ways in which output of goods and services may be measured, namely at basic prices, producers' prices or purchasers' prices.

- The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output *minus* any tax payable (e.g. excise duties and value added tax (VAT)) *plus* any subsidy receivable on that unit as a consequence of its production or sale. Basic prices *exclude* any transport charges invoiced separately by the producer.
- Producers' price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output *minus* any VAT, or similar deductible tax, invoiced to the purchaser. It *excludes* any transport charges invoiced separately by the producer.
- Purchasers' price is the amount paid by the purchaser, *excluding* any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good *includes* any transport charges paid separately by the purchaser to take delivery at the required time and place.

The relationship between the above-mentioned concepts can be expressed as follows:

	Output at basic prices
<i>plus</i>	taxes on products (excluding VAT)
<i>less</i>	subsidies on products
<i>equals</i>	Output at producers' prices
<i>plus</i>	trade and transport margins
<i>plus</i>	non-deductible VAT
<i>equals</i>	Output at purchasers' prices.

Basic prices are the preferred method of valuing output of goods and services produced for the market, especially when a system of VAT is in operation.

Intermediate consumption

With regard to the valuation of intermediate consumption, i.e. expenditure by enterprises on goods and services consumed as inputs in the production process, the 1993 SNA recommends that it should be valued at purchasers' prices. Intermediate inputs purchased and/ or transferred from other establishments belonging to the same enterprise, should be valued at the same prices as used to value them as outputs of those establishments, plus any additional transport charges not included in the output values.

Gross value added

The 1993 SNA recommends that gross value added by the various industries be valued at basic prices, both at current and constant prices. It is important to note that gross value added at basic prices excludes any taxes payable on products

and includes any subsidies receivable on products. As the basic price measures the amount retained by the producer it is, therefore, the price most relevant for the producer's decision-taking. Gross value added at basic prices is also the measure preferred and adopted by Stats SA.

Previously South Africa's national accounts measured value added at factor cost. This is no longer the case. In this regard it should be noted that although the 1993 SNA acknowledges that gross value added at factor cost can still be computed, it does, however, not recommend it as a measure of value added due to the non-existence of observable prices such that output minus intermediate consumption equals gross value added at factor cost. Factor cost is a concept of income rather than production. The expression "at factor cost" means that value added is valued at the cost of factors of production (e.g. capital, labour, land and entrepreneurship). Production or output valued at factor cost excludes taxes on production and imports (e.g. VAT, excise duties, business licenses and registration fees) but includes other subsidies on production.

In order to derive the GDP at market prices, taxes less subsidies on products must be added to total gross value added at basic prices. It should be noted that GDP at market prices is a measure which is only applicable to the total economy.

Revision of the classification and terminology of taxes

In accordance with the 1993 SNA recommendation, South Africa has adopted the revised classification and terminology of taxes. The 1968 SNA term "indirect taxes" has been replaced by the term "taxes on production and imports" and the 1968 SNA term "direct taxes" has been changed to "current taxes on income and wealth". Furthermore, the distinction between "commodity taxes" and "other indirect taxes and imports" has been replaced by the terms "taxes on products" and "other taxes on production".

Taxes on production and imports include taxes on products and other taxes on production. Taxes on products consist of taxes payable on goods and services when they are produced, delivered, sold or otherwise disposed of by their producers. Furthermore, they are payable per unit of a good or service produced. Important examples of taxes on products are excise and import duties and VAT. Other taxes on production consist of taxes on the ownership of land, buildings or other assets used in production or on labour employed, etc.

Current taxes on income and wealth cover all compulsory payments levied by government on the income and wealth of institutional units. These taxes include taxes on individual or household income, taxes on the income or profits of corporations, etc.

Table D – List of integrated economic accounts

Number and name of accounts		Balancing item	
Transaction accounts			
0	Goods and services account		
Full sequence of accounts for institutional sectors			
Current accounts			
I	Production account	B.1	Value added
II.I	Primary distribution of income account		
II.1.1	Generation of income account	B.2/3	Operating surplus / mixed income
II.1.2	Allocation of primary income account	B.5	Balance of primary incomes
II.2	Secondary distribution of income account	B.6	Disposable income
II.3	Redistribution of income in kind account	B.7	Adjusted disposable income
II.4	Use of income account		
II.4.1	Use of disposable income account	B.8	Saving
II.4.2	Use of adjusted disposable income account	B.8	Saving
Accumulation accounts			
III.1	Capital account	B.9	Net lending / net borrowing
III.2	Financial account	B.9	Net lending / net borrowing
III.3	Other changes in assets account	B.10	Other changes in net worth
Balance sheets			
IV.1	Opening balance sheet	B.90	Net worth
IV.2	Changes in balance sheet	B.10	Total changes in net worth
IV.3	Closing balance sheet	B.90	Net worth
Rest of the world account			
Current accounts			
V.I	External account of goods and services	B.11	External balance of goods and services
V.II	External account of primary income and current transfers	B.12	Current external balance
Accumulation accounts			
V.III.1	External capital account	B.9	Net lending / net borrowing
V.III.2	External financial account	B.9	Net lending / net borrowing
V.III.3	External account for other changes in assets		
Balance sheets			
V.IV.1	External opening balance sheet	B.90	Net external financial position of the nation
V.IV.2	External changes in balance sheet	B.10	Changes in net external financial position of the nation
V.IV.3	External closing balance sheet	B.90	Net external financial position of the nation

Integrated economic accounts

The integrated economic accounts are at the centre of the accounting framework, and contain three groups of accounts, namely:

- transaction accounts with the goods and services account being of particular importance,
- a full sequence of accounts for institutional sectors and the total economy which are divided into the current accounts, accumulation accounts and balance sheets, and
- a full sequence of accounts for the rest of the world which are divided into the current accounts, accumulation accounts and balance sheets.

Taken together, the full sequence of accounts of institutional sectors, the rest of the world accounts and the goods and services account give a comprehensive picture of the whole economy. However, the integrated economic accounts do not depict the relations between different sectors. Table D (p. 17) contains a summary of the integrated economic accounts with an indication of the balancing item of each account. As evident from the table, there are three groups of accounts for the institutional sectors and the rest of the world account i.e. the current accounts, accumulation accounts and balance sheets, in addition to the transaction account. The table indicates the SNA93 account number and the transaction code for the balancing item.

As previously indicated, a complete set of accounts including balance sheets can only be compiled for institutional units and sectors, and for the rest of the world. In fact, one criterion for an institutional unit is that it must be possible, at least in principle, to compile a full sequence of accounts. The production and generation of income accounts can also be compiled for various industries, providing the format for the calculation of GDP and value added by activity.

It should be noted that although it is necessary to present the accounts in a particular order, the activities they describe should not be interpreted as taking place sequentially in time. For example, processes of production generate incomes continuously, while expenditure on the outputs produced may also be taking place more or less simultaneously. An economy is a general equilibrium system in which interdependent economic activities involving countless transactions between different institutional units are carried out simultaneously. Feedback is continually taking place from one type of economic activity to another.

Transaction accounts

A transaction account brings together all transactions of the same type in a dummy account. For example the transaction account for interest shows, on the debit side [left side] the interest receivable by the different institutional sectors and the rest of the world, and, on the credit [right side], the interest payable by the same sectors and the rest of the world. The goods and services account is of particular importance among the transaction accounts.

Current accounts

These accounts record the production of goods and services, the generation of incomes by production, the subsequent distribution and redistribution of incomes among institutional units, and the use of incomes for purposes of consumption or saving. One [the right] side of these accounts shows resources (e.g., interest income received, receipts from sale of products, etc.) and the other [the left] shows the uses of these resources (e.g., interest paid, purchases of products, etc.). Any excess of resources over uses of resources – called a

“balancing item” – then becomes the opening entry in the next account in the sequence, ultimately passing the balancing item “Saving” to the accumulation accounts.

Accumulation accounts

Accumulation accounts cover changes in assets, liabilities and net worth that occur as a result of:

- transactions – interactions between institutional units by mutual agreement,
- other changes in the volume of assets and liabilities – e.g., discovery and depletion of subsoil assets, destruction of assets by natural disaster or war, , and
- changes in prices.

These accounts show changes in assets on one side [the left] and changes in liabilities and net worth on the other [the right]. They are flow accounts that record the acquisition and disposal of financial and non-financial assets and liabilities by institutional units through transactions or as a result of other events, as described below.

- The capital account records acquisitions and disposals of non-financial assets as a result of transactions with other units or internal bookkeeping transactions linked to production (changes in inventories and consumption of fixed capital).
- The financial account records acquisitions and disposals of financial assets and liabilities, through transactions.
- A third account, the “other changes in assets” account, consists of two sub-accounts. The first, the “other changes in volume of assets” account, records changes in the amounts of the assets and liabilities held by institutional units or sectors as a result of factors other than transactions, e.g., destruction of fixed assets by natural disasters. The second, the revaluation account, records those changes in the values of assets and liabilities as a result of changes in their prices.

The link between the accumulation accounts and the income accounts is provided by the fact that saving (B.8), that is, disposable income that is not spent on the consumption of goods or services, must be used to acquire financial or non-financial assets of one kind or another. When saving is negative, disposal of assets or the incurring of liabilities must finance the excess of consumption over disposable income. The financial account shows the way in which funds are channelled from one group or units to another, especially through financial intermediaries. Access to finance is a prerequisite for engaging in many types of economic activities.

The accumulation accounts are available only for sectors, and they are even less common because of the demands they place on a country’s statistical system. These accounts are flow accounts that record the various causes of changes in sectors’ assets, liabilities, and net worth; changes in assets are recorded on the left, changes in liabilities and net worth on the right. The same classification of assets is used for both the accumulation accounts and the balance sheets.

The basic relationship in each of the accumulation accounts is:

	change in liabilities
<i>plus</i>	change in net worth
<i>equals</i>	change in assets.

Each accumulation account includes changes in net worth from a particular source. The capital and financial accounts cover changes in assets, liabilities, and net worth that result from transactions – e.g., purchases of equipment or financial assets, borrowing, etc. The other changes in volume of assets and revaluation accounts cover changes in assets, liabilities and net worth that do not result from transactions, but rather from such causes as changes in prices, destruction of assets in natural disasters, discovery of natural assets, etc.

Balance sheets

The balance sheets show the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and end of an accounting period. These accounts show assets (e.g., equipment, bank deposits, loans held by creditors) on the left and liabilities (e.g., loans outstanding for debtors) and net worth on the right. The values of assets and liabilities held at any moment in time automatically change whenever any transactions, price changes or other changes affecting the volume of assets or liabilities held take place. These are all recorded in one or another of the accumulation accounts so that the difference between the values in the opening and closing balance sheets is entirely accounted for within the System, provided that the assets and liabilities recorded in the balance sheets are valued consistently with the transactions and other changes, that is, at current prices.

Balance sheets are only available for sectors, although it is possible to compile accounts of non-financial assets for industries. Both opening and closing balance sheets are presented. The accumulation accounts detail the sources of the difference between the two balance sheets.

The basic relationship of the balance sheet is:

	liabilities
<i>plus</i>	net worth
<i>equals</i>	assets.

Assets may be financial or non-financial; liabilities are only financial. Non-financial assets may be tangible or intangible, and non-financial assets are grouped into produced assets and non-produced assets. Both opening and closing balance sheets are given.

Structure of the accounts

The key variables and relationships of the 1993 SNA are embodied in a series of accounts and their balancing items. Each current or accumulation account in the sequence contains a set of transactions or other flows that are economically similar. Because in each account total resources and total uses must be equal by definition, the accounts in these sequences contain a balancing item. Balancing items encapsulate a great deal of information and include some of the most important entries in the SNA e.g., value added; operating surplus; disposable income; saving; net lending/net borrowing; and net worth. In the aggregate, many balancing items play an important role as macro-economic indicators for the total economy, e.g., the total of value added plus net taxes on products equals the gross domestic product, and the total of the balance of primary

incomes equals national incomes.

Goods and services account (Account 0)

The goods and services account (table E) shows, for the total economy, how the total amount of product available (resources) is equal to the total amount used. Resources are shown on the left-hand side and uses are shown on the right-hand side.

Useful aggregate relationships can be derived from the elements in this account. One of these is based on the principle that aggregate supply of goods and services must equal aggregate use of those goods and services. Aggregate supply consists of both domestic production and imported goods and services (the transaction code is indicated in brackets). Thus:

plus intermediate consumption (P.2)
plus final consumption expenditure (P.3/P.4)
plus gross capital formation (P.51/P.52/P.53)
plus exports of goods and services (P.6)
plus residual item

equals output (P.1)

plus taxes on products (D.21)
less subsidies on products (D.31)
plus imports of goods and services (P.7).

Table E – Account 0: Goods and services account: 1998

T	Resources	R million	T	Uses	R million
P.1	Output	1 345 556	P.2	Intermediate consumption	671 101
D.21	Taxes on products	70 669	P.3/ P.4	Final consumption expenditure	607 082
D.31	Subsidies on products	(5 619)	P.3	Private consumption expenditure	466 552
P.7	Imports of goods and services	181 632	P.4	Government consumption expenditure	140 530
			P.51/ P.52/ P.53	Gross capital formation	123 242
			P.51	Gross fixed capital formation	125 876
			P.52/ P.53	Changes in inventories	(2 634)
			P.6	Exports of goods and services	190 189
				Residual item	622
	Total resources	1 592 238		Total uses	1 592 238

Source: Stats SA – Unpublished updated Supply and Use tables: Report No. 04-04-01 (1998)

Note: T = Transaction code

These variables in the goods and services account can all be expressed in both value and volume terms, unlike the remaining variables in the 1993 SNA, which have only a value dimension.

Subtracting imports (P.7) and intermediate consumption (P.2) from the equation in the previous paragraph can derive another important relationship. Thus:

	final consumption expenditure (P.3/P.4)
<i>plus</i>	gross capital formation (P.51/P.52/P.53)
<i>plus</i>	net exports (exports less imports)
<i>plus</i>	residual item
<i>equals</i>	gross value added/ Gross domestic product (B.1) [GDP calculated by the expenditure approach (GDP(E))]

OR

	output (P.1)
<i>plus</i>	taxes on products (D.21)
<i>less</i>	subsidies on products (D.31)
<i>less</i>	intermediate consumption (P.2)
<i>equals</i>	gross value added/ Gross domestic product (B.1). [GDP calculated by the production approach (GDP(P))]

Theoretically, the expenditure and production methods should provide identical estimates of GDP. Unfortunately, all flows in the economy cannot be measured exactly; consequently, the totals produced by the two approaches will normally not coincide fully except by pure chance. For this reason, the “residual item” is allowed, and is derived as the difference between the GDP(E) and GDP(P) estimates.

***Production
account
(Account I)***

The production account, which is the first in the sequence of current accounts, records the production (output) of goods and services, as a resource, and the utilisation of goods and services (intermediate consumption), as a use, to establish, as the difference, the gross value added. The depreciation of fixed capital in the production process is recorded as a separate item (consumption of fixed capital (K.1)).

The production account (table F, p. 23) emphasises the concept of GDP or value added as one of the main balancing items in the 1993 SNA. The 1993 SNA recommends the calculation of GDP for the entire economy and the calculation of value added for the various industries. The GDP is essentially a production measure as it is obtained through the sum of the gross values added of all resident institutional units, in their capacities as producers, *plus* the values of any taxes, *less* subsidies, on production or imports not already included in the values of the outputs and values added by resident producers.

Table F – Account I: Production account: 1998

T	Uses	R million	T	Resources	R million
P.2	Intermediate consumption	671 101	P.1	Output	1 345 556
			D.21	Taxes on products	70 669
			D.31	Subsidies on products	(5 619)
B.1	<i>Gross value added/ Gross domestic product</i>	739 505			
K.1	Consumption of fixed capital	96 587			
B.1	<i>Net value added/ Net domestic product</i>	642 918			

Source: Stats SA – Unpublished updated Supply and Use tables: Report No. 04-04-01 (1998)

Note: T = Transaction code

Value added measures the value created by production and may be calculated either before (gross) or after (net) deducting the consumption of fixed capital (K.1) on the fixed assets used. Gross value added is defined as the value of output *less* the value of intermediate consumption. Gross/net value added is the balancing item in the production account for an institutional unit, sector, establishment or industry, while gross/ net domestic product is the balancing item in the production accounts for the total economy.

It is important to note that value added does not cover all transactions linked to the production process, but only those linked to the result of production, that is output, and to the utilisation of goods and services when producing this output, that is intermediate consumption. In other words it includes output as a resource (see right-hand side of the production account) and intermediate consumption as a use (see left-hand side of the production account).

The basic relationship in the production account is the following (the transaction code is indicated in brackets):

	intermediate consumption (P.2)
<i>plus</i>	gross value added/ gross domestic product (B.1)
<i>less</i>	taxes on products (D.21)
<i>plus</i>	subsidies on products (D.31)
<i>equals</i>	output (P.1)

where *value added* is the balancing item. The sum of value added across sectors or across industries is gross domestic product (GDP).

Generation of income account (Account II.1.1)

The generation of income account (table G, p. 24) records distributive transactions resulting from the production process. Distributive transactions consist of transactions by which the value added generated by production is distributed to, for example, labour.

Table G – Account II.1.1: Generation of income account: 1998

T	Uses	R million	T	Resources	R million
D.1	Compensation of employees ¹	372 250	B.1	Gross value added /Gross domestic product	739 505
D.2	Taxes on production and imports	86 992			
D.21	Taxes on products	70 669			
D.29	Other taxes on production	16 323			
D.3	Subsidies	(8 128)			
D.31	Subsidies on products	(5 619)			
D.39	Other subsidies on production	(2 509)			
B.2/ B.3	Gross operating surplus/mixed income	288 391			

Source: Stats SA – Unpublished updated Supply and Use tables: Report No. 04-04-01 (1998)

Notes: T = Transaction code

1 Compensation of employees (372 250) includes compensation of employees to the rest of the world (2 299) and compensation of employees from the rest of the world (503) (table N, p. 35)

Thus, the resources include gross domestic product (B.1) and the uses refer to compensation of employees (D.1) payable to workers employed in the production process, as well as taxes *less* subsidies on production and imports. The latter consist of taxes payable or subsidies receivable on goods or services produced as outputs and other taxes or subsidies on production, such as those payable on the labour, machinery, buildings or other assets used in production. Taxes on production do not include any income taxes payable by the recipients of incomes accruing from production, whether employers or employees. The balancing item is gross operating surplus/ mixed income (B.2/ B.3). The mixed income refers to the balancing item in the generation of income account for the household sector. The reason is that the surplus generated by un-incorporated household enterprises includes both remuneration for the labour of the owner as well as a return to the entrepreneurship and capital employed.

The basic relationship in the generation of income account is the following (the transaction code is indicated in brackets):

compensation of employees (D.1)
plus taxes on production and imports (D.2)
less subsidies (D.3)
plus gross operating surplus/mixed income (B.2/B.3)
equals gross value added / gross domestic product (B.1)

where *operating surplus/ mixed income* is the balancing item.

Allocation of primary income account (Account II.1.2)

The allocation of primary income account (table H, p. 25) focuses on the distribution of primary incomes to resident institutional sectors. Transactions in primary incomes also occur with the rest of the world. The households sector is the only resident institutional sector receiving compensation of employees. Likewise, the general government sector is the only resident institutional sector receiving taxes on production. Subsidies are negative taxes on production and imports from an accounting point of view. Although

subsidies constitute incomes (resources) for producers, they are recorded as a use with a negative sign on the debit side of the generation of income account. Similarly, subsidies are expenditures for government, recorded as negative incomes on the resource side of the primary allocation of income account. The balancing item of the allocation of primary income account is the *balance of primary incomes*. The total of this balance for all institutional sectors is equal to the national income, gross or net.

Table H – Account II.1.2: Allocation of primary income account: 1998

T	Uses	R million	T	Resources	R million
D.4	Property income paid ³	387 868	B.2/ B.3	Gross operating surplus/mixed income	288 391
			D.1	Compensation of employees ¹	370 454
			D.2	Taxes on production and imports	86 992
			D.21	Taxes on products	70 669
			D.29	Other taxes on production	16 323
			D.3	Subsidies	(8 128)
			D.31	Subsidies on products	(5 619)
			D.39	Other subsidies on production	(2 509)
			D.4	Property income received ²	372 333
B.5	Gross balance of primary incomes / Gross national income	722 174			

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Notes: T = Transaction code

1 Compensation of employees (372 250) excludes compensation of employees to the rest of the world (2 299) and compensation of employees from the rest of the world (503) (table N, p. 35)

2 Property income received includes property income received from the rest of the world (6 690) (table N, p. 35)

3 Property income paid includes property income paid to the rest of the world (22 225) (table N, p. 35)

Property income (D4)

Property income is receivable by owners of financial assets and tangible non-produced assets (land, subsoil asset) in return for providing funds to, or putting tangible non-produced assets at the disposal of other institutional units. The main categories of property income are as follows.

- Interest (D.41) is receivable by owners of certain categories of financial assets, namely deposits, and securities other than shares and loans. These assets represent claims of creditors over debtors. Interest is the amount that the debtor becomes liable to pay to the creditor over a given period of time without reducing the outstanding debt.
- Distributed income of corporations (D.42) includes dividends payable to shareholders of corporations and withdrawals from income of quasi-corporations.
- Reinvested earnings on direct foreign investment (D.43) are the retained earnings by direct foreign investment enterprises. This is equal to the balance of primary incomes plus any current transfers receivable minus any current transfers payable by the same enterprise.

- Property income (D.44) attributed to insurance policy holders is the income of insurance companies from investment of technical reserves. These reserves belong to the policyholders, which is the reason why the investment income is recorded as payable by insurance companies and receivable by the sectors that are policyholders.
- Rents (D.45) include rents for land and for subsoil assets. On the other hand, rentals payable for buildings constitute payments for services. In practice, it may sometimes be difficult to distinguish between rent and rentals since a single payment may contain both elements.

The basic relationship in the allocation of primary income account is (the transaction code is indicated in brackets):

	gross operating surplus/ mixed income (B.2/B.3)
<i>plus</i>	compensation of employees (D.1)
<i>plus</i>	taxes on production and imports (D.2)
<i>less</i>	subsidies (D.3)
<i>plus</i>	property income received (D.4)
<i>minus</i>	property income paid (D.4)
<i>equals</i>	balance of primary incomes (B.5)

where the *balance of primary incomes* is the balancing item.

The balance of primary incomes also includes receipts of compensation of employees in the case of households, and receipts of taxes *less* subsidies on production and imports in the case of government. The sum of the balance of primary incomes of all domestic sectors yields another familiar aggregate, the national income.

**Secondary
distribution of
income account
(Account II.2)**

The secondary distribution of income account (table I, p. 27) shows how the balance of primary incomes is further redistributed by transactions in current transfers among resident institutional sectors and between them and the rest of the world. Examples of current transfers received by NPISHs are membership dues, subscriptions, voluntary donations, etc., intended to cover the costs of the NPISHs' nonmarket production or to provide the funds out of which they may make current transfers to households. This redistribution of income represents a second stage in the income distribution, ending in the disposable income of institutional sectors.

All transactions in the secondary distribution of income account are transfers. A transfer is defined as a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as counterpart. These transfers can be either cash or in kind. Transfers may be either current or capital transfers. The recipient of a capital transfer in cash is required or expected to use it for the acquisition of an asset, or assets (other than inventories). Capital transfers are recorded in the capital account.

The balancing item in the secondary distribution of income account is *disposable income*. This can be interpreted as the maximum amount that a unit can spend on consumption goods and services without disposing of its assets or increasing its liabilities. Disposable income is not all available in cash, since part of it is derived from transactions in kind, for example produce for own consumption of wages and salaries in kind. Such income in kind is all deemed

to be consumed by the households that receive it. The total of the disposable income of all institutional sectors is equal to the national disposable income, gross or net.

The basic relationship in the secondary distribution of income account is (the transaction code is indicated in brackets):

	gross balance of primary incomes/ gross national income (B.5)
<i>plus</i>	current taxes on income, wealth etc received (D.5)
<i>plus</i>	social contributions received (D.61)
<i>plus</i>	social benefits other than social transfers in kind received (D.62)
<i>plus</i>	other current transfers received (D.7)
<i>plus</i>	residual
<i>less</i>	current taxes on income, wealth etc paid (D.5)
<i>less</i>	social contributions paid (D.61)
<i>less</i>	social benefits other than social transfers in kind paid (D.62)
<i>less</i>	other current transfers paid (D.7)
<i>equals</i>	gross disposable income (B.6)

where *disposable income* is the balancing item.

Disposable income also includes current taxes received in the case of government, and current taxes paid in the case of households and corporations. A sector's disposable income is its income from production, as modified by receipts and payments of property incomes, taxes and transfers. It represents the amount available for current consumption and for saving.

Table I – Account II.2: Secondary distribution of income account: 1998

T	Uses	R million	T	Resources	R million
D.5	Current taxes on income, wealth, etc paid	105 306	B.5	Gross balance of primary incomes/ Gross national income	722 174
D.61	Social contributions paid	76 358	D.5	Current taxes on income, wealth, etc. received	105 306
D.62	Social benefits other than social transfers in kind paid	48 691	D.61	Social contributions received	76 358
D.7	Other current transfers paid	105 661	D.62	Social benefits other than social transfers in kind received	48 691
			D.7	Other current transfers received	101 568
				Residual	(622)
B.6	Gross disposable income	717 459			

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

Current taxes on income, wealth, etc. (D.5)

Current taxes on income, wealth, etc. consist mainly of taxes levied on incomes, capital gains and profits of households and corporations. Pay-as-you-earn taxes, deducted by the employer, are included. The following are two examples of other current taxes:

- taxes payable periodically on net wealth. Taxes on assets used in production are excluded; they are classified as taxes on production (primary incomes); and
- payments by households to obtain certain licences, namely licences to own or use vehicles, boats and aircrafts and licences to shoot, hunt or fish. Such licences payable by producers, on the other hand, are classified as taxes on production (primary incomes).

Social contributions and benefits (D6)

Social benefits are current transfers received by households intended to provide for the needs that arise from certain events or circumstances, for example, sickness, unemployment, retirement, housing, education or family circumstances. The most important categories are described below.

Social contributions (D.61)

There are four kinds of social contributions recorded in national accounts.

- Employers' actual social contributions (D.6111) are payable by employers on behalf of their employees to social insurance schemes. Although they are payable by the employers, they are recorded as a component of compensation of employees and, hence, as an income from households, who are then also recorded as paying the social contributions to the social security schemes. Thus, in the secondary distribution of income account this type of social contribution is recorded as payable by the household sector and receivable by the institutional sectors that administer the schemes, most commonly the financial corporations or general government sectors.
- Employees' social contributions (D.6112) are payable directly by employees.
- Social contributions by self-employed or non-employed persons (D.6113) are payable by the said categories of persons for their own benefits.
- Employers' imputed social contributions (D.612) are recorded when employers provide social benefits, e.g. pensions, to their employees or former employees out of their own resources without engaging any insurance company or without creating funds or reserves. In this case a social contribution has to be imputed, in practice often being equal to what is actually paid during the accounting period. This imputed contribution is recorded in a way similar to actual contributions, but is always recorded as receivable by the institutional sector of the employer.

Social benefits (D.62)

Social benefits consist of all social benefits except social transfers in kind. They therefore consist of:

- all social benefits in cash – both social insurance and social assistance benefits – provided by government units, including social security funds and NPISHs; and
- all social insurance benefits provided under private funded and unfunded social insurance schemes, whether in cash or in kind.

There are two kinds of social benefits in cash:

- Social security benefits in cash (D.621) are payable in cash to households by social security funds. Examples are sickness benefits, maternity allowances, unemployment benefits, and retirement and survivors' pensions.

- Social assistance benefits in cash (D.624) are current transfers payable to households by government units or NPISHs to meet the same needs as social insurance benefits but which are not made under a social insurance scheme incorporating social contributions and social insurance benefits. They therefore exclude all benefits paid by social security funds. They may be payable in cash and in kind. Those in kind are part of social transfers in kind, entered in the redistribution of income in kind account. Social assistance benefits may be payable for example when no social insurance scheme exists to cover the circumstances in question. Social assistance benefits, however, do not cover transfers in cash or in kind made in response to natural disasters such as drought, floods or earth quakes. Such transfers are recorded separately under other current transfers.

Social insurance benefits are divided into:

- Private funded social insurance benefits (D.622). These are social insurance benefits payable to households by insurance enterprises or other institutional units administering private funded social insurance schemes. Examples are sickness benefits, maternity allowances, unemployment benefits, and retirement and survivors' pensions. No distinction is made between benefits in cash and in kind as private funded benefits cannot be social transfers in kind. Both type of benefits are recorded in the secondary distribution of income account, and
- Unfounded employee social insurance benefit (D.623). These are social benefits payable to their employees, their dependants or survivors by employers administering unfounded social insurance schemes. All unfounded benefits are recorded in the secondary distribution of income account whether in cash or in kind. Examples are the continued payment of normal or reduced wages during periods of absence from work as a result of ill health, accidents, maternity needs, and the payment of family, education or other allowances in respect of dependant.

Social benefits in kind provided by general government and NPISHs are not recorded in the secondary distribution of income account. They form part of social transfers in kind and are recorded in the redistribution of income in kind account.

Other current transfers (D.7)

Other current transfers consist of all current transfers between resident institutional units, or between residents and non-residents, except for current taxes on income, wealth, etc., and social contributions and benefits. Other current transfers include a number of different kinds of transfers serving quite different purposes. The most important categories are described below.

Non-life insurance premiums (D.71)

Non-life insurance premiums (short term) consist of two elements, together making up the total premiums:

- Actual premiums earned. These refer to those parts of the premiums payable in the current or previous periods, which cover the risks incurred during the accounting period in question.
- Premium supplements. These refer to the income from investment of the technical reserves of the insurance institutions. The 1993 SNA treats the reserves as assets of the policyholders. Therefore, the investment income

from the reserves is attributed to the policyholders. The income is recorded as receivable by the policyholders who pay it all back again as premium supplements.

Part of non-life insurance premiums constitutes a service charge, a payment for the services provided by the insurance institutions in arranging the insurance. The remainder is described as net non-life insurance premiums and classified as a current transfer. This is what is available to cover for the various events specified in the insurance scheme. Because of the way the service charge is calculated, net premiums are equal to total claims.

Non-life insurance claims (D.72)

Non-life insurance claims (short term) comprise the amounts payable in settlement for events that qualify the insurance policyholder for a valid claim against the insurance company. As for non-life insurance premiums, part of the account constitutes a service charge. The remainder, after deduction of the service charge, is included in saving and recorded in the financial account as an increase in a financial asset. Consequently, life insurance claims are recorded as decreases in financial assets.

Current transfers within general government (D.73)

Current transfers within general government consist of current transfers between different government units or different sub-sectors of general government. They include transfers between different levels of government; such as frequently occur between central and local government units, and between government units and social security funds. They do not include transfers of funds committed to finance gross fixed capital formation, such transfers being treated as capital transfers.

Current international co-operation (D.74)

Current international co-operation includes transfers between governments of different countries or between governments and international organisations. Examples are foreign aid to governments, used to finance current expenditure, and regular contributions by member countries to international organisations. Regarding foreign aid, it is important to distinguish between current and capital transfers. Donor funds earmarked for acquisitions of capital assets, for example purchases of machinery or erection of buildings and structures, should be classified as capital transfers. In practice, it is not always easy to make that distinction and the major part of foreign aid tends to be recorded as current transfers.

Miscellaneous current transfers (D.75)

Miscellaneous current transfers consist of all other transfers not discussed above. Examples are current transfers to non-profit institutions serving households (membership fees, donations, etc.), current transfers between households, and fines and penalties. The latter are compulsory transfers imposed by courts of law or by other judicial bodies (e.g. parking tickets).

Use of income account (Account II.4)

The purpose of the use of income account (table J) is to show how households (including NPISHs) and general government allocate their disposable income between final consumption and saving. Non-financial and financial corporations cannot incur any final consumption. There are two versions of the use of income account. They focus on the alternative concepts of disposable income and their related consumption concepts, the first account on disposable

income and final consumption expenditure and the second one on adjusted disposable income and actual consumption.

The balancing item, *saving*, is the same in the two versions of the use of income account. For non-financial and financial corporations, saving is equal to disposable income except for the adjustment described below.

The basic relationship in the use of disposable income account is (the transaction code is indicated in brackets):

$$\begin{array}{l} \text{disposable income (B.6)} \\ \text{minus final consumption expenditure (P.3/P.4)} \\ \text{equals saving (B.8).} \end{array}$$

where *saving* is the balancing item. Payments of membership dues or subscriptions to market NPIs serving business are treated as payments for services rendered, not transfers.

Table J – Account II.4: Use of income account: 1998

T	Uses	R million	T	Resources	R million
P.3/ P.4	Final consumption expenditure	607 082	B.6	Gross disposable income	717 459
P.3	Private consumption expenditure	466 552	D.8	Adjustment for the change in net equity of households on pension funds received	27 228
P.4	Government consumption Expenditure	140 530			
D.8	Adjustment for the change in net equity of households on pension funds paid	27 228			
B.8	<i>Gross savings</i>	<i>110 377</i>			
B.8	<i>Net savings</i>	<i>13 790</i>			

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

Final consumption expenditure (P.3/P.4)

Final consumption expenditure can be incurred by three sectors, namely households, general government and non-profit institutions serving households. It includes expenditure on consumption goods and services that are not used in any production process.

Actual final consumption (P.4)

Actual final consumption includes all goods and services acquired by an institutional unit for final consumption regardless of whether the institutional unit has incurred the expenditure or not. For example, health services paid by the government are included in actual consumption by households.

Adjustment for the change in net equity of households on pension funds (D.8)

The item adjustment for the change in net equity of households on pension funds is needed because households are the owners of the funds of private pension schemes. The “net equity of households on pension funds” is a financial asset. Thus, payments of contributions to the funds are in effect increases in financial assets, while receipts of pensions represent decreases in the same assets. However, with the purpose of providing income information that may be more analytically meaningful, contributions to private pension schemes and receipts of pensions are recorded in the secondary distribution of income account, on opposite sides for households and for the sector administering the pension scheme, normally financial corporations. In order to derive savings that are consistent with the financial account, the adjustment item must be recorded in the use of income account. This item is equal to the pension contributions less the pensions. It is recorded on the resources side of the use of income account for households and on the uses side of the same account for financial corporations.

**Capital account
(Account III.1)**

The capital account (table K, p. 33), which is the first in the sequence of accumulation accounts, records transactions in non-financial assets and receipts and payments of capital transfers – i.e., those transfers that are regarded as affecting wealth rather than income by at least one party to the transaction. Examples include gifts of fixed assets. The capital account records two main types of transactions. Acquisitions less disposals of non-financial assets by resident units are recorded on the left-hand side of the account. The right-hand side of the account measures the change in net worth due to saving (final balancing item in the current accounts) and capital transfers. The capital account makes it possible to determine the extent to which acquisitions less disposals of non-financial assets have been financed out of saving and by capital transfers. It shows a net lending (+) corresponding to the amount available to a unit or sector for financing, directly or indirectly, other units or sectors, or a net borrowing (-) corresponding to the amount which a unit or sector is obliged to borrow from other units or sectors.

Table K – Account III.1: Capital account: 1998

T	Changes in assets	R million	T	Changes in liabilities	R million
P.51/ P.52/ P.53	Gross capital formation	123 242	B.8	Net savings	13 790
P.51	Gross fixed capital formation	125 876	D.9	Capital transfers, receivable	134
P.52/ P.53	Changes in inventories	(2 634)	D.9	Capital transfers, payable	(443)
K.1	Consumption of fixed capital	(96 587)			
B.9	<i>Net lending (+)/ net borrowing (-)</i>	(13 174)	B.10.1	<i>Changes in net worth due to saving and capital transfers</i>	<i>13 481</i>

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

Transactions in non-financial assets are recorded in the capital account and comprise two main categories, namely produced and non-produced assets with their sub-categories.

The basic relationship in the capital account is given by (the transaction code is indicated in brackets):

$$\begin{array}{l}
 \text{gross capital formation (P.1/P.2/P.3)} \\
 \textit{minus} \quad \text{consumption of fixed capital (K.1)} \\
 \textit{plus/minus} \quad \text{net lending/ net borrowing (B.9)} \\
 \textit{equals} \quad \text{change in net worth due to net saving and capital transfers} \\
 \quad \quad \quad \text{(B.10.1)}
 \end{array}$$

where *net lending* is the balancing item.

The item “change in net worth due to saving and capital transfers” equals net saving (gross savings *less* consumption of fixed capital) *plus* capital transfers receivable *less* capital transfers payable. The 1993 SNA also includes a pair of accounts, the redistribution of income in kind account and the use of adjusted disposable income account, that account for in-kind transfers to households from government and NPISH – including that part of government and NPISH final consumption expenditure that can be associated with individuals.

The measure of saving derived in the use of adjusted disposable income account is the same as that derived in the use of income account.

**Financial account
(Account III.2)**

The financial account (table L, p. 34) records transactions in financial instruments such as securities, bank deposits, or accounts receivable, and net incurrence of liabilities, such as mortgages, securities, or accounts payable. The balancing item is again net lending (+) or net borrowing (-) and, in theory, is exactly the same as in the capital account, but derived in a different way from another category of data (monetary and financial statistics).

Table L – Account III.2: Financial account: 1998

T	Changes in assets	R million	T	Changes in liabilities	R million
F	Net acquisition of financial assets	321 139	B.9	Net lending (+) / Net borrowing (-)	(13 174)
			F	Net incurrence of liabilities	334 315

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

The basic relationship in the financial account is (the transaction code is indicated in brackets):

$$\begin{aligned} & \text{net acquisition of financial assets (F)} \\ \text{minus} & \text{ net incurrence of liabilities (F)} \\ \text{equals} & \text{ net lending (+)/ net borrowing (-) (B.9)} \end{aligned}$$

where *net lending/ net borrowing* is the balancing item. Empirically the estimates of net lending derived in the capital and the financial accounts may differ.

Rest of the world (Account V)

In the SNA, the accounts relating to the resident institutional sectors portray various facets of economic activity, i.e., the production, generation, distribution and redistribution of income, consumption and accumulation. The relevant accounts capture both transactions taking place between the resident institutional sectors of the total economy and transactions with non-resident units that make up the rest of the world.

The SNA is closed in the sense that both ends of every transaction are recorded; i.e., each transaction is shown as a “use” or outgoing from one part of the System and a “resource” or incoming into another part. The stocks of assets during an accounting period vary as a result of these transactions, together with other flows, i.e., other changes in volume, such as uncompensated seizures or catastrophic losses of assets, and holding gains or losses.

Not all transactors and holders of assets and liabilities are resident institutional units of a given economy. Therefore, in order for the System to be closed, a segment must be provided to capture the full range of transactors that take place between the total economy and the rest of the world. This segment is known in the System as the rest of the world. The rest of the world account or external transactions account follows the previously discussed general accounting structure with only minor variations, and comprises those categories of accounts necessary to capture the full range of transactions that take place between the total economy and the rest of the world (table C, p 13). Specifically, they are:

current accounts:

- the external account of goods and services (V.I) (table M, p. 35),
- the external account of primary incomes and current transfers (V.II) (table N, p. 35),

accumulation accounts:

- the external capital account (V.III.1) (table O, p. 36), covering

transactions involving capital transfers and acquisitions less disposals of non-produced non-financial assets,

- the external financial account (V.III.2) (table P, p. 36), covering transactions in financial assets and liabilities,
- the external account for other changes assets (V.III.3), covering uncompensated seizures, etc.,

balance sheets:

- the external opening balance sheet (V.IV.1),
- the external changes in balance sheet (V.IV.2), and
- the external closing balance sheet (V.IV.3).

The rest of the world account is presented from the point of view of the rest of the world so that a resource for the rest of the world is a use for the home economy and *vice versa*. A positive balancing item indicates a surplus for the rest of the world and a deficit for the home economy, and *vice versa* if the balancing item is negative.

Table M – Account V.I: External account of goods and services: 1998

T	Uses	R million	T	Resources	R million
P.6	Exports of goods and services	190 189	P.7	Imports of goods and services	181 632
B.11	<i>External balance of goods and services</i>	(8 557)			

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

Table N – Account V.II: External account of primary income and current transfers: 1998

T	Uses	R million	T	Resources	R million
D.1	Compensation of employees	503	B.11	External balance of goods and services	(8 557)
D.4	Property income	6 690	D.1	Compensation of employees	2 299
D.7	Other current transfers	334	D.4	Property income	22 225
			D.7	Other current transfers	4 427
B.12	<i>Current external balance</i>	12 867			

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

In a sense, the rest of the world account has a unique character because it is not linked to any specific type of economic activity such as production, consumption, capital formation, etc. Instead, all transactions between resident institutional units and non-resident units in respect of all kinds of economic activity are captured under the broad label of the rest of the world account.

Table O – Account V.III.1: Capital account: 1998

T	Changes in assets	R million	T	Changes in liabilities and net worth	R million
			B.12	Current external balance	12 867
			D.9	Capital transfers, receivable (+)	443
			D.9	Capital transfers, payable (-)	(134)
B.9	Net lending (+) / net borrowing	13 176	B.10.1	Changes in net worth due to saving and capital transfers	13 176

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

Table P – Account V.III.2: Financial account: 1998

T	Changes in assets	R million	T	Changes in liabilities and net worth	R million
F	Net acquisition of financial assets	54 842	B.9	Net lending (+) / Net borrowing (-)	41 666
			B.9	Net lending (+) / net borrowing	13 176

Source: South African Reserve Bank – Quarterly Bulletin, December 2001 and unpublished data

Note: T = Transaction code

The flows relating to property income in the primary distribution of income accounts for the resident institutional sectors contain elements of property incomes receivable (payable) from (to) the rest of the world, which are reflected in the external account of primary incomes and current transfers. In the generation of income account for resident sectors, the item “compensation of employees” includes compensation payable to non-resident employees, which is also recorded in the external account of primary incomes and current transfers on the source side. In an analogous fashion, transactions in the financial account for resident sectors contain transactions in financial instruments *vis-à-vis* non-residents that have their counterpart entries in the financial account component of the external accumulation account. Viewed from this perspective, the various components of the rest of the world account are indeed complementary to the sequence of accounts for the resident institutional sectors.

Linking SU-tables and the NAM

The System includes an input-output framework which consists of an integrated set of supply and use tables (SU-tables) as well as the traditional symmetric input-output tables. They provide detailed analysis of the process of production, the use of goods and services (products) and the income generated in that production process. The concepts and definitions in the input-output tables of the SNA are the same as in the rest of the System.

The integration of “input-output” in the overall system of national accounts is an important feature of the SNA. Its role in the System is primarily related to the goods and services, production and generation of income accounts.

The structure of the SU-tables is explained by means of an aggregated set of tables (tables Q and R, p. 38). In order to simplify references to these SU-

tables, the columns of the supply table have been labelled SC and the rows of the supply table have been labelled SR, while the columns of the use table have been labelled UC and the rows of the use table have been labelled UR. The intersection of a row and a column is denoted by a colon separating the two applicable numbers e.g. SC1:SR1. Furthermore, the economy is divided into three industries, primary, secondary and tertiary, as shown in columns SC5 to SC7 and UC4 to UC6. The sum of these three industries is found in columns SC8 and UC7. It is important to note that the figures in these tables differ from those published in Report No. 04-04-01 (1998) – Final supply and use tables, 1998, an input-output framework published in May 2001. This is due to National Accounts revisions that took place during November 2001.

Supply table

The supply table (table Q, p. 38) shows the origin of the resources of goods and services, depicting products in rows (SR) and industries in columns (SC). In the rows, the various types of products are presented according to a product classification. An additional row is added for the adjustment of direct purchases by South African residents abroad. In the columns, information is shown on the output of each industry according to an industrial classification, imports, taxes less subsidies on products and trade and transport. Furthermore, in the supply table, goods and services produced in the economy are measured at basic prices. Basic price is the preferred method of valuing output in the 1993 SNA. The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output *minus* any tax payable *plus* any subsidy receivable on that unit as a consequence of its production or sale. Basic prices exclude any transport charges invoiced separately by the producer. The cost, insurance, freight (c.i.f.) / free on board (f.o.b.) adjustment to import data is shown in column SC10 and row SR4.

Use table

The use table (cf. table R, p. 38) shows the uses of goods and services and supplies information on the cost structures of the various industries. In the rows, the various types of products are presented according to a product classification. Additional rows are added for the adjustment of direct purchases by South African residents abroad and direct purchases in the domestic market by non South African residents. The table is divided into three sections, each with its own characteristics.

The *first section* shows the goods and services used as intermediate consumption at purchasers' prices by industry in columns (UC4-UC6) and by product in rows (UR1-UR5). The total row (UR6) shows intermediate consumption by industries at purchasers' prices.

The *second section* shows the components of final demand (column UC9), namely exports, households consumption expenditure, general government consumption expenditure, fixed capital formation, changes in inventories and the residual item at purchasers' prices.

The *third section* elaborates on the production costs of producers other than intermediate consumption expenditure (columns UC2-UC7 and row UR7) namely, compensation of employees, taxes less subsidies on production and imports, consumption of fixed capital and net operating surplus/mixed income.

The purchaser's price is the amount paid by the purchaser, excluding any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The

purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place.

Table Q – Framework of the supply of products at basic prices: 1998 (R million)

Column no.	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	SC9	SC10	
Row no.	Supply of products	(SC2+SC3+SC4) Total supply at purchasers' prices	Taxes less subsidies on products	Trade and transport margins	(SC8+ SC9+ SC10) Total supply at basic prices	Output of industries			(SC5+ SC6+ SC7) Total industry	Imports	c.i.f./ f.o.b. adjustment on imports
					Primary industry	Secondary industry	Tertiary industry				
SR1	Primary products	148 364	841	7 229	140 294	123 550	109	123 659	16 635		
SR2	Secondary products	826 089	53 786	122 433	649 870	3 345	506 495	509 840	140 030		
SR3	Tertiary products	605 250	10 423	(129 662)	724 489	231	26 318	685 505	21 409	(8 974)	
SR4	c.i.f./f.o.b. adjustment on imports	–			–				(8 974)	8 974	
SR5	Direct purchases residents	12 532			12 532				12 532		
SR6	Total output at basic prices	1 592 235	65 050	–	1 527 185	127 126	532 922	685 505	1 345 553	181 632	–

Table R – Framework of the use of products at purchasers' prices: 1998 (R million)

Column no.	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9	
Row no.	Supply of products	(UC7+UC9) Total supply at purchasers' prices	Taxes on products	Subsidies on products	Intermediate consumption by industries			(UC4+ UC5+ UC6) Total industry	(UC2+ UC3+ UC7) Total economy	Components of final demand
					Primary industry	Secondary industry	Tertiary industry			
UR1	Primary products	148 364			2 703	63 088	1 440	67 231		81 133
UR2	Secondary products	826 089			35 211	222 157	101 156	358 524		467 565
UR3	Tertiary products	605 250			21 486	74 441	149 417	245 344		359 906
UR4	Direct purchases residents	12 532								12 532
UR5	Direct purchases non residents	–								–
UR6	Total uses at purchasers' prices	1 592 235			59 400	359 686	252 013	671 099		921 136
UR7	Gross value added/ GDP		70 669	(5 619)	67 726	173 236	433 492	674 454	739 504	
UR8	Total output at basic prices				127 126	532 922	685 505	1 345 553		

Derivation of GDP

The production, income and expenditure based components of GDP at current market prices can all be derived from the SU-tables (tables Q and R, p. 38).

The *production approach* derives GDP at market prices by deducting intermediate consumption expenditure (uses) at purchasers' prices from total output at basic prices after making provision for taxes and subsidies on products as well as trade and transport margins. The corresponding entries for 1998 in tables H and I are:

Output at basic prices (P.1)	SC8:SR6	R 1 345 553
	UC7:UR8	
<i>plus</i> taxes less subsidies on products (D.21/ D.31)	SC2:SR6	R 65 050
<i>plus</i> trade and transport margins	SC3:SR6	R 0
<i>less</i> intermediate consumption (P.2) (at purchasers' prices)	UC7:UR6	<u>R 671 099</u>
= GDP at market prices	UC8:UR7	<u>R 739 504</u>

The *income approach* to estimate the GDP at market prices entails summing all the components of value added i.e. remuneration of employees and gross operating surplus after making provision for taxes and subsidies on products. In table I it is shown as column UC8.

GDP at market prices	UC8:UR7	R 739 504
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The *expenditure approach* to estimate the GDP at market prices entails the summation of the components of final demand i.e. household consumption expenditure, general government consumption expenditure, fixed capital formation, change in the value of inventories and exports, in the use table (table R, p. 38) and subtracting imports as obtained from the supply table (table Q, p. 38):

Components of final demand (P.3/ P.4/ P5/ P.6)	UC9:UR6	R 921 136
<i>less</i> imports (P.7)	SC9:SR6	<u>R 181 632</u>
= GDP at market prices	UC8:UR7	<u>R 739 504</u>

National accounts matrix

The national accounts can be presented in matrix form at various levels of detail. At the highest level of aggregation, we can have a matrix presentation that distinguishes between the different kinds of accounts, as in table 1 (p. 59). The latter is known as an aggregate national accounts matrix (NAM). This presentation can be elaborated by expanding the individual cells to show the kinds of transactions between the different economic subjects involved in each account. The units (product group, industry, sector) used to break down each cell will vary according to the nature of the account. The detailed NAM can be turned into a social accounting matrix (SAM) by further expanding the cells by introducing more detailed classifications (of labour and households, mainly) (SAM.xls on diskette).

The NAM, in table 1 (SAM.xls on diskette and p. 59) shows how the SU-tables (rows and columns 1 and 2), the distribution and use of income accounts (rows and columns 3, 4, 5, and 6), the accumulation accounts (rows and columns 7, 8 and 9), and the rest-of-the-world accounts (rows and columns 10 and 11) initially presented in the form of T-accounts (uses and resources) can be presented in matrix form. Each account is represented by a row and column. The convention is that incomes or resources are shown in the rows and expenditure or uses are shown in the columns.

The main feature of the matrix presentation is that an item which appears twice in the conventional T-accounts, is included only once in the matrix presentation: the item is shown on the intersection of the row of the account in which it is a resource (or the acquisition of an asset) and the column of the account in which it is a use (or the acquisition of a liability).

Constructing the NAM

Table S shows how each sub-matrix in the NAM is calculated – the transaction codes and specific account in which the transaction can be found is indicated in brackets.

Table S – Constructing the NAM: 1998 (R million)

MATRIX (ROW, COLUMN)	TRANSACTION AND ACCOUNT		AMOUNT R MILLION
M(1,1)	Trade and transport margins	Account 0	0
M(2,1)	Output (P.1)	Account I Account 0	1 345 556
	Taxes on products (D.21)	Account 0 Account I	70 669
	– Subsidies on products (D.31)	Account 0 Account I	5 619
M(4,1)	= Net taxes on products	Account II.1.2 Account 0	65 050
M(10,1)	Imports of goods and services (P.7)	Account V.II Account 0	181 632
M(1,2)	Intermediate consumption (P.2)	Account 0 Account I	671 101
	Gross domestic product (B.1)	Account 0 Account I	739 505
	– Consumption of fixed capital (K.1)	Account III.1 Account I	96 587
	– Taxes on product (D21)	Account 0 Account I	70 669
	+ Subsidies on products (D.31)	Account 0 Account I	5 619
M(3,2)	= Domestic net value added	Account II.1.1 Account I	577 868

Table S – Constructing the NAM: 1998 (R million) (continued)

MATRIX (ROW, COLUMN)	TRANSACTION AND ACCOUNT		AMOUNT R MILLION
M(8,2)	Consumption of fixed capital (K.1)	Account III.1 Account I	96 587
	Gross operating surplus/ mixed income (B.2/B.3)	Account II.1.1 Account II.1.2	288 391
	– Consumption of fixed capital (K.1)	Account I Account III.1	96 587
	+ Compensation of employees (D.1)	Account II.1.2	370 454
	+ Other taxes on production (D.29)	Account II.1.1	16 323
	– Other subsidies on production (D.39)	Account II.1.1	2 509
M(4,3)	= Net generated income	Account II.1.2 Account II.1.1	576 072
M(10,3)	Compensation of employees to ROW (D.1)	Account V.2 Account II.1.2	2 299
	Property income (D.4)	Account II.1.2	394 558
	– Property income from ROW (D.4)	Account II.1.2 Account V.2	6 690
	– Property income to ROW (D.4)	Account II.1.2 Account V.2	22 225
M(4,4)	= Property income: Resident sector	Account II.1.2	365 643
	Gross balance of primary income/ Gross national income (B.5)	Account II.1.2 Account II.2	722 174
	– Consumption of fixed capital (K.1)	Account I Account III.1	96 587
M(5,4)	= Net national income	Account II.2 Account II.1.2	625 587
M(10,4)	Property income to ROW (D.4)	Account V.2 Account II.1.2	R22 225

Table S – Constructing the NAM: 1998 (R million) (continued)

MATRIX (ROW, COLUMN)	TRANSACTION AND ACCOUNT		AMOUNT R MILLION
	Current taxes on income/wealth etc (D.5)	Account II.2	105 306
	+ Social contributions (D.61)	Account II.2	76 358
	+ Social benefits other than social transfers in kind (D.62)	Account II.2	48 691
	+ Other current transfers (D.7)	Account II.2	101 568
	– Other current transfers from ROW (D.7)	Account II.2	334
M(5,5)	= Current transfers: Resident sector	Account II.2	331 589
	Gross disposable income (B.6)	Account II.2 Account II.4.1	717 459
	– Consumption of fixed capital (K.1)	Account I Account III.1	96 587
M(6,5)	= Net disposable income	Account II.4 Account II.2	620 872
M(10,5)	Current transfers to ROW (D.7)	Account V.II Account II.2	4 427
M(1,6)	Final consumption expenditure (P.3/P.4)	Account 0 Account II.4.1	607 082
M(6,6)	Adjustment for the change in net equity of households on pension funds (D.8)	Account II.4.1	27 228
M(7,6)	Net savings (B.8)	Account III.1 Account II.4.1	13 790
M(10,6)	Adjustment for the change in net equity of households on pension fund to ROW (D.8)	Account V.II Account II.4.1	0
M(1,7)	Change in inventories (P.51/P.53)	Account 0 Account III.1	2 634
	Gross fixed capital formation (P.51)	Account 0 Account III.1	125 876
	– Consumption of fixed capital (K.1)	Account I Account III.1	96 587
M(8,7)	= Net fixed capital formation	Account III.1	29 289
M(9,7)	Net acquisitions of financial assets	Account III.2 Account III.1	321 139

Table S – Constructing the NAM: 1998 (R million) (concluded)

MATRIX (ROW, COLUMN)	TRANSACTION AND ACCOUNT		AMOUNT R MILLION
M(11,7)	Capital transfers to ROW (D.9)	Account V.III.1 Account III.1	443
M(1,8)	Gross fixed capital formation (P.51)	Account 0 Account III.1	125 876
M(7,9)	Net incurrence of liabilities	Account III.1 Account III.2	334 315
M(1,10)	Exports of goods and services (P.6)	Account 0 Account V.II	190 189
M(3,10)	Compensation of employees from ROW (D.1)	Account 0 Account V.II	503
M(4,10)	Property income from ROW (D.4)	Account II.1.2 Account V.II	6 690
M(5,10)	Other current transfers from ROW (D.7)	Account II.2 Account V.II	334
M(6,10)	Adjustment for the change in net equity of households on pension funds from ROW (D.8)	Account II.4.1 Account V.II	0
M(11,10)	Current external balance (B.12)	Account V.III.1 Account V.II	12 867
M(7,11)	Capital transfers from ROW (D.9)	Account III.1 Account V.III.1	134
M(9,11)	Net lending of ROW (B.9)	Account III.2 Account V.III.1	13 176
M(1,12)	Residual	Account 0	622
M(5,12)	Residual	Account II.2	-622

Interpreting the NAM

To understand how the NAM (table 1, SAM.xls and p. 59) should be read, take the example of the production account (table F, p. 23). The uses, “intermediate consumption”, “consumption of fixed capital” and “net value added” are shown in the “Production” column of the simplified NAM, and the resource “production” is placed in the “Production” row of the matrix.

Most accounts end with a meaningful balancing item. This item is usually recorded in the column of that account and in the row of the next account, thus providing a link between successive accounts. For example, the balancing item of the production account, net value added at basic prices, appears in cell M(3,2). Each balancing item is computed as the row total minus the sum of the other items in the columns. In the NAM, all the sub-matrices containing a

balancing item are in italic format and between double lines.

Since the NAM distinguishes transactions with the rest of the world in a separate account (columns and rows 10 and 11), the diagonal cells (M4,4), (M5,5), (M6,6) and (M7,7) contain only transactions among resident institutional units.

Column and row totals (in column and row 13) have not been named. Their main function in matrix accounting is to ensure that all the accounts represent complete balances, in the sense that total uses or expenditure (column sums) equal total resources or income (row sums). Meaningful balancing items, which connect successive accounts, can only be derived if this condition is fulfilled. The column sums equal the row sum by definition.

Description of individual accounts in the aggregate NAM

Ten accounts are distinguished in table 1 (SAM.xls and p. 59) namely:

- Goods and services account (Account 0),
- Production account (Account I),
- Generation of income account (Account II.1.1),
- Allocation of primary income account (Account II.1.2),
- Secondary distribution of income account (Account II.2),
- Use of disposable income account (Account II.4),
- Capital account (Account III.1),
- Financial account (Account III.2),
- Current transactions of ROW (Account V.II), and
- Capital transactions of ROW (Account V.III.1).

The names of the accounts appear in the column and row headings. The number of the various accounts is shown alongside their names.

Goods and services accounts (Account 0)

The variables of the goods and services account (table E, p. 21) corresponds to the first column and row of the NAM (table 1, SAM.xls and p. 59), showing the total supply and uses of goods and services in the economy.

Column one of the NAM registers the following:

- trade and transport margins M(1,1),
- supply of goods and services that are produced by resident industries/ output at basic prices M(2,1),
- taxes less subsidies on products M(4,1), and
- supply of goods and services that are imported at cash, insurance and freight (c.i.f) prices (M10,1).

Row one of the NAM registers the following:

- trade and transport margins M(1,1),
- use of goods and services/ intermediate consumption at purchasers' prices M(1,2),
- final consumption expenditure M(1,6),
- changes in inventories M(1,7),
- gross fixed capital formation M(1,8), and
- exports of goods and services at free on board (f.o.b.) prices M(1,10).

Taxes less subsidies on products are not included in the output value, but directly booked on the allocation of primary income account for the government M(4,1). Trade and transport margins are registered in cell M(1,1). For the total economy, the balance of paid and received trade and transport margins is always zero at an aggregated level. The elements in column one add up to total supply of goods and services at purchasers' prices M(13,1). This equals total uses of goods and services at purchasers' prices M(1,13).

Production account (Account I)

The production account (table F, p. 23) is presented in the second column and row of the NAM.

Column two of the NAM registers the following:

- use of goods and services/ intermediate consumption at purchasers' prices M(1,2),
- domestic net value added at basic prices M(3,2), and
- consumption of fixed capital M(8,2), which is put directly on the fixed capital formation account (column and row 8) as a resource.

Row two of the NAM registers the following:

- supply of goods and services that are produced by resident industries/ output at basic prices M(2,1).

Because of the valuation of output at basic prices, the sum of row 2 and the concomitant sum of column 2, are exclusive of taxes minus subsidies on products, which have been channelled directly from the goods and services account to the allocation of primary income account M(4,1). This means that this amount is not included in the balancing item of account 2. Therefore, the balancing item of account I in cell M(3,2) corresponds with the total net value added at basic prices, and not net domestic product, which is valued at market prices. Naturally, the sum of total net value added and total taxes minus subsidies on products equals net domestic product.

Generation of income account (Account II.1.1)

In the generation of income account (table G, p. 24), the third column and row of the NAM, records the generation of income. It shows what kind of income has been generated by direct involvement in the processes of production. Taxes and subsidies related to the production process are included here.

This account is classified by primary input category e.g.:

- compensation of employees,
- net mixed income,
- net operating surplus, and
- taxes less subsidies on production.

Here, compensation of employees is recorded as a transaction (compensation in return of work) between an industry (employer) and a person (employee). In the NAM (and subsequently the SAM), employed persons are considered as separate units who receive compensation of employees in the generation of income account and distribute this income to their households in the allocation of primary income account, column and row 4 of the NAM (in the SAM, these units are subsequently classified into institutional sectors). This is a deviation from standard national accounts, in which households directly receive the

generated income. It illustrates that in reality individuals, not households, work and receive a compensation for labour provided.

Column three of the NAM registers the following:

- net generated income at basic prices M(4,3), and
- compensation of non-resident persons employed in resident enterprises as compensation of employees to the rest of the world M(10,3).

Row three of the NAM shows the receipts of the various categories of primary input, i.e.:

- receipts from domestic industries M(3,2), and
- receipts from abroad M(3,10).

The balancing item of account II.1.1, the net generated income at basic prices, gives the total income earned by resident institutional units as a result of being engaged in production. Net generated income is used as an opening balance in the allocation of primary income account M(4,3).

	Net value added
<i>plus</i>	compensation of employees from the rest of the world
<i>minus</i>	compensation of employees to the rest of the world
<i>equals</i>	net generated income.

Allocation of primary income account (Account II.1.2)

The allocation of primary income account (table H, p. 25), the fourth column and row of the NAM, records the distribution of primary income among institutional sectors.

Column four of the NAM registers the following:

- property income to resident sectors M(4,4),
- net national income M(5,4), and
- property income to the rest of the world (M10,4).

Row four of account the NAM registers the following:

- taxes less subsidies on products M(4,1),
- net generated income at basic prices M(4,3),
- property income from resident sectors M(4,4), and
- property income from the rest of the world M(4,10).

This yields a balancing item for account II.1.2, the Net National Income, which subsequently links with the secondary distribution of income account M(5,4).

Note that national, inter-sectoral property income flows are recorded on the diagonal of the matrix M(4,4), as they affect the distribution, but not the total, of national income.

Secondary distribution of income account (Account II.2)

The secondary distribution of income account (table I, p. 27), the fifth column and row of the NAM, registers the redistribution of national income by current transfers (current taxes on income, wealth, etc; social contributions; social benefits; and other current transfers), considering that some of these current

transfers flow from and to the rest of the world.

Column five of the NAM registers the following:

- current transfers to resident sectors M(5,5),
- net disposable income M(5,6), and
- current transfers to the rest of the world (M10,5).

Row five of the NAM registers the following:

- sectors receive net national income (M5,4),
- current transfers from resident sectors M(5,5), and
- current transfers from the rest of the world M(5,10).

Account II.2 is balanced by net disposable national income, which links with the use of income account M(6,5). National inter-sectoral current transfers, which affect the distribution without changing total net disposable income, are shown on the diagonal of the matrix M(5,5).

Use of disposable income account (Account II.4)

In the use of disposable income account (table J, p. 31), the sixth column and row of the NAM, records the various uses of disposable income, i.e.

- final consumption expenditure, and
- net savings.

Column six of the NAM registers the following:

- final consumption expenditure M(1,6),
- adjustment for the changes in net equity of household on resident pension reserves M(6,6),
- net savings M(7,6), and
- adjustment for changes in net equity of household on non-resident pension funds reserves M(10,6).

Row six of the NAM registers the following:

- net disposable income M(6,5),
- adjustment for the changes in net equity of household on resident pension reserves M(6,6), and
- adjustment for changes in net equity of household on non-resident pension funds reserves M(6,10).

Disposable income appears in row M(6,5) of account II.4, and final consumption expenditure is recorded in column M(1,6). Cell M(6,6), on the diagonal of the matrix, records an adjustment for the changes in net equity of households on resident pension funds reserve. Adjustments for changes in net equity of households on non-resident pension funds reserves are recorded in cell M(6,10). The corresponding changes of non-resident households on resident pension funds are recorded in cell M(10,6).

The balancing item of the use of disposable income account is net national saving M(7,6), which is put on the resource side of the capital account.

Capital account (Account III.1)

In the design of this NAM, the capital (table K, p. 33) and financial accounts (table L, p. 34) are interlaced, with the financial account classified by financial intermediaries. As a consequence, disaggregation of this NAM shows both net

acquisitions of financial assets (lending) M(9,7) and borrowing M(7,9) by financial intermediary. These two categories of transactions have been combined for the rest of the world. This serves to include the aggregate balancing item net lending in the NAM M(9,11), though with a reverse sign when viewed from the standpoint of the national economy (columns and rows 7 and 9).

The column of the capital account records how these funds have been allocated:

- changes in inventories M(1,7),
- national inter-sectoral capital transfers payable M(7,7),
- net fixed capital formation M(8,7),
- net acquisitions of financial assets (lending) M(9,7), and
- capital transfers payable to the rest of the world M(11,7).

The row of the capital account present the availability of funds to the total economy i.e.:

- net saving M(7,6),
- national inter-sectoral capital transfers receivable M(7,7),
- net incurrence of liabilities (borrowing) M(7,9), and
- capital transfers from the rest of the world, including acquisitions less disposals of non-produced non-financial assets by the rest of the world M(7,11).

The balancing item net lending of the nation (the sum of the net lending or borrowing of the resident institutional sectors) can also be derived from this account by subtracting borrowing M(7,9) from lending M(9,7). The net lending (+) or borrowing (-) of the total economy, M(9,7) *less* M(7,9), is *equal*, but with the opposite sign, to the net borrowing (-) or lending (+) of the rest of the world (M9,11).

Table L (p. 34) shows lending M(9,7) R321 139 million *less* borrowing M(7,9) R334 315 million *equals* net lending M(9,11) R13 176 million. This represents the net lending of the nation, in other words, the net resources that the total economy makes available to the rest of the world. A negative difference represents the net borrowing of the economy from the rest of the world.

Gross fixed capital formation (P.51)

A large part of total volume changes in net worth probably consists of increases in fixed assets. It is important to show which industries have expanded their production capacity (to show the dynamics of an economy). This is why a separate fixed capital formation column and row is inserted in the NAM. The eighth row and column show, in this case of a detailed NAM, in which industry what type of capacity is expanded M(1,8) and perhaps even more importantly, which sector invests in what industry M(8,7).

Often estimates of gross fixed capital formation M(1,8) and of the consumption of fixed capital M(8,2) are already available. As a consequence, the residual, net fixed capital formation should be found and recorded in M(8,7).

Financial account (Account III.2)

Borrowing is presented in column 9 as

- net incurrence of liabilities M(7,9).

In the financial account, lending is presented in row 9 as

- net acquisitions of financial assets M(9,7)

The balancing item of the financial account is the net borrowing (or lending) of the total economy M(9,11). It is given in row 9 and column 9 because it is at the same time the balancing item of the capital account for the rest of the world, account 11, but of opposite sign.

Current account for the rest of the world (Account V.II)

The current account for the rest of the world (tables M and N, p.35) shows the current transactions of the rest of the world with the nation. Column 10 of the NAM records the receipts from the rest of the world and row 10 contains the payments from the nation to the rest of the world. The elements in these accounts have all been reviewed above.

The balancing item, the current external balance M(11,10), represents the surplus (if it is negative) or the deficit (if it is positive) of the total economy on its current transactions with the rest of the world.

If one wants to consider the current external balance from the perspective of the national economy, it should be put in cell M(10,11) and the sign reversed.

Capital account for the rest of the world (Account V.III. 1)

The capital account for the rest of the world (table O, p. 36), column 11 of the NAM, records the capital transfers from the rest of the world M(7,11) and the balancing item net lending of the rest of the world M(9,11).

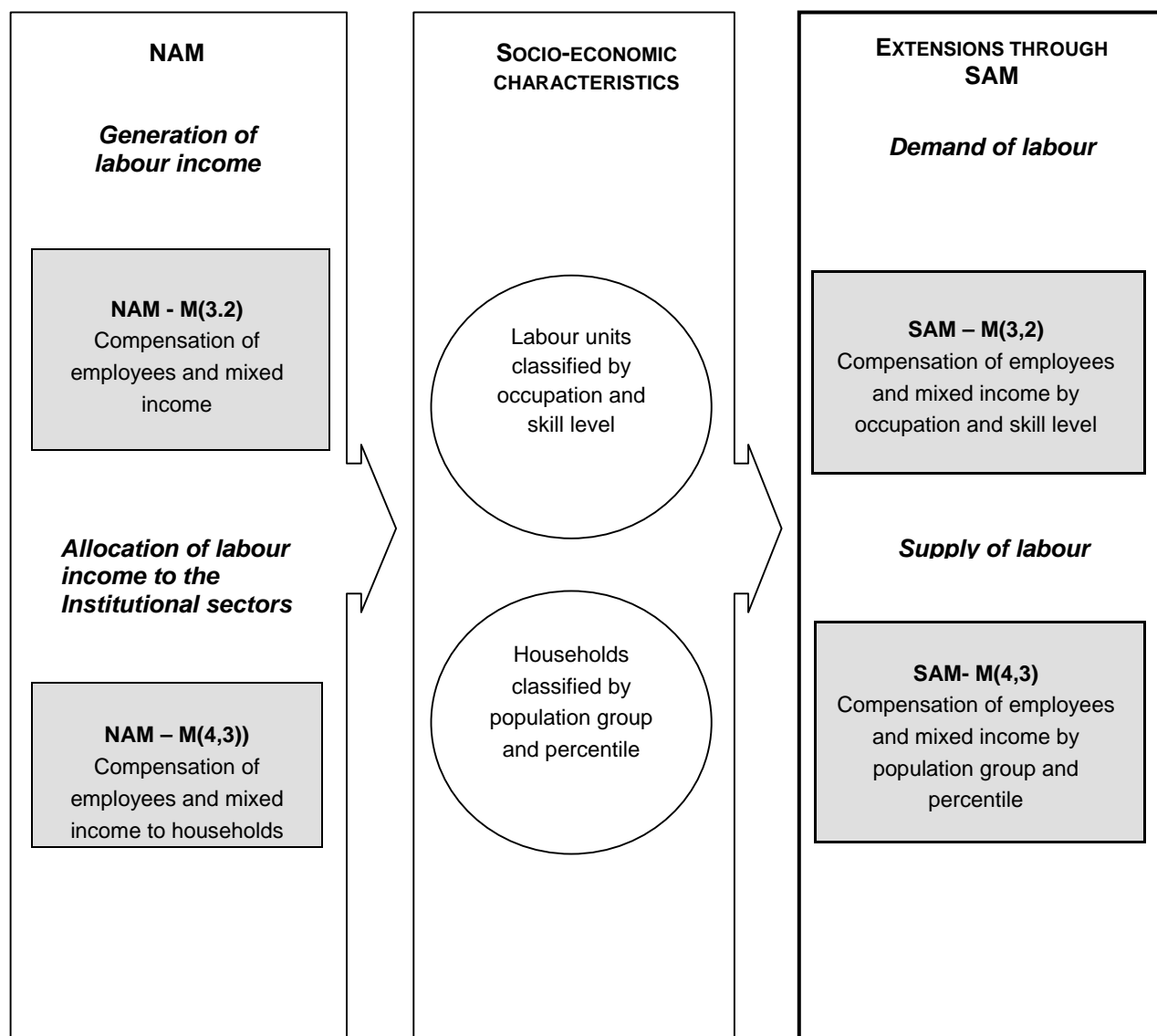
Row 11 records, in addition to the current external balance M(11,10), the capital transfers to the rest of the world M(11,7).

SAM

The SAM is built within the basic framework of a NAM, with each entry of the NAM expanded into a sub-matrix whose rows and columns identify groups of transactors or categories of transactors. By using the entries of the NAM as control totals, the expansion provides a coherent set of sub-matrices where the accounting of the transactors/ transactions is shown. Figure 5 (p. 50) synthesises the transition from the NAM cells to the detailed tables of the SAM where the demand and supply of labour in monetary terms are described.

The NAM and the SAM (table 1 and 2, SAM.xls on diskette and p. 59) elaborates on the linkages between SU-tables and institutional sector accounts. It is a presentation of the SNA in matrix terms that incorporates whatever degree of detail might be of special interest e.g. income distribution patterns. To date, builders of SAMs have exploited the available flexibility to highlight special interests and concerns, display the various interconnections, disaggregate the households sector, show the link between income generation and consumption, etc. The power of a SAM, as well as the 1993 SNA, comes from choosing the appropriate type of disaggregation to study the topic of interest. In addition to a flexible application and the inclusion of various components, a SAM may incorporate more extensive adjustments, which are of a satellite accounting nature, in order to satisfy specific analytical purposes.

Figure 5 – Transition from the NAM cells to the SAM tables on the labour market



In recent years the output of economic facts and figures by various public and private agencies has increased by leaps and bounds. Most of this information is published for reference purposes and is unrelated to any particular method of analysis. As a result in modern economics we have a high concentration of theory without fact on the one hand and a mounting accumulation of fact without theory on the other. The task of filling the “empty boxes of economic theory” with relevant empirical content becomes increasingly more urgent and challenging. The effort to combine economic facts and theory is known as interindustry or input-output analysis.

The basic building block for a SAM is a set of SU-tables. A SAM is therefore a typical example of an adaptation and elaboration of the conventional input-output framework. Like the latter, the SAM reflects the economic relationships between the sectors of the economy by identifying monetary transactions (expenditures and receipts) between them. It also provides a consistent framework for the study of economic as well as demographic and social variables. A complete set of capital flow variables for the various sectors of the economy is given in the SAMs.

The basic features of the South African SAM are as follows.

- The South African input-output framework is chiefly concerned with the description of the interdependence of industries that are reflected in their transactional interrelationships. The SAM, on the other hand, describes the interdependence between a wider spectrum of economic sectors and industries as well as a wider variety of information about employment, capital, households, population groups and regional economic activities. Thus the purpose of a SAM is to quantify the circular flow of economic activity as widely as possible.
- The input-output framework focuses on the different production activities of the economy. By contrast, the SAM emphasises the activities of household and producers at a national level as well as in urban and non-urban areas. One of the strengths of the SAM is its detailed coverage of, inter alia, the accounts of the household sector.
- The SAM divides the household sector into meaningful subgroups so that the economic significance of each of them becomes apparent. Another point in favour of the SAM is its usefulness as a means of demonstrating the economic welfare of the various population groups in South Africa, and of enabling the analysis of such welfare.
- The SAM framework provides a considerable amount of information about income distribution in South Africa, thus supplementing the conventional national accounting system. Unfortunately the SAM can only be compiled at fairly long intervals owing to the volume of work involved in its compilation and the problems associated with the acquisition of the relevant data. The unavailability of regular SAM tables means that it cannot be used to draw comparisons with conditions prevailing at other times.

The SAM system is thus invaluable as a basic data source, an aid to structural analyses, a planning aid, and as an interface between social, demographic, employment and national account statistics. The South African SAMs thus afford a most interesting overview of the South African economy.

Classifications

As transactions in the SAM are shown simultaneously as an income of one account and an expenditure of another, they are usually cross-classified. Through this, it becomes apparent who paid what to whom. One of the advantages of the matrix format of the SAM is the great flexibility in the choice of classifications. It is possible to distinguish the most relevant unit and classification of units for each account. Defining classifications for the different accounts is a vital phase in the construction of the SAM.

Product groups Account 0 is classified according to 27 product groups. This gives the most relevant details about the consumption expenditure on goods and services by households. An important criterion for the classification of goods and services is the availability of data about the consumption of various household groups.

Industries Account I is classified by 27 industries. In the production account (account I), data is mainly derived from the SU-tables as compiled within the system of

national accounts.

Primary income categories	Account II.1.1 is classified by 11 occupational groups, gender (external matrix – table 3.1, SAM.xls on diskette) and the urban non-urban dimension (external matrix – table 3.2, SAM.xls on diskette).
Institutional sectors	Accounts II.1.2, II.2 and II.4 are classified by institutional sectors i.e.: <ul style="list-style-type: none">• non-financial corporations,• financial corporations,• general government, and• households and non-profit institutions serving households.
Financial assets	Account III.2 is classified according to financial intermediaries.

Applications of SAM

The matrixes described by SAMs represent the linkages between two often distinct worlds of statistics i.e. economic statistics and social statistics. The integration of these distinct fields of statistics will enable more policy issues to be monitored and analysed in an interrelated manner. Above all, the linkage of income distribution issues to more macro-oriented objectives such as economic growth,, low inflation rate and government fiscal balance comes within reach with a SAM.

In the usefulness of SAMs a distinction can be made between the applications for producers and users of statistics. The first elaborates on the integration of basic data while the second elaborates on a SAM as a tool for policy analysis.

Although one of the main applications of a SAM is discussed in the first part of this document the following serves as a summary of some of its other applications.

General quality improvement

A compilation of SAMs, by which an optimal mix of top-down and bottom-up production methods is used, may lead to higher quality of those aggregates which can be produced along both routes. It also signals inconsistencies in the basic sources, e.g. Population census, Household expenditure surveys, Integrated Economic Accounts, etc. It is not the availability of these data per se that makes the difference, but the consistency and quality improvements reached through the process of statistical integration and the analytical framework that a SAM presents. In the absence of a SAM, users have to reconcile the data themselves as a starting point for an internally consistent analysis as well as ensure the consistency of the definitions used.

The advantage of using a SAM can be summarised in terms of increased relevance, reliability and efficiency. The SAM increases the relevance of economic and social indicators because they are derived from a meso-level information system. As a consequence, their interdependence can be studied, more insights into causes and consequences of “best and worst practices” are gained and the interaction between socio-economic policies in various fields can be analysed. Reliability is enhanced because the more that data are confronted at a meso-level, the more logical identities can be checked:

components must add to totals, accounts must balance and price and quantities must multiply to values. Efficiency is served by the application of uniform units, classifications and concepts throughout a statistical system. Among the advantages of such a harmonisation is a much easier matching of results from different surveys, which in turn yields more reliable outcomes. In addition, international harmonisation of classification is useful.

A SAM pinpoints gaps in the available data set and discrepancies in the survey concepts

It is in situations where basic information and other statistical resources are (very) scarce that it is all the more important to make the best possible use of whatever data are available. Integrating outcomes of all kinds of costly censuses and surveys into a consistent overall framework may increase both their relevance and their reliability. This applies particular to household surveys and population censuses. Generally speaking, carefully acquired consistency at the meso-level leads to a higher degree of accuracy at the macro-level. Naturally, if there are too many gaps in the basic data, the reliability of (parts of) the SAM remains dubious. In this way, building a SAM will also pinpoint gaps in the available data set and discrepancies in the survey concepts. This should then have a streamlining feedback effect on both economic and social basic statistics.

A SAM serves as a benchmark data set

As the processing of censuses and surveys is very time-consuming, and as the construction of a detailed SAM also tends to involve a substantial input of human resources, SAMs for South Africa have generally become available with a lag of several years. If SAMs are built for those years for which main surveys or censuses are held it can serve as a benchmark data set, updated yearly or even quarterly, with the help of relevant indicators, to obtain the necessary timeliness without giving up too much in terms of reliability. A matrix framework is especially suitable in this regard in view of the availability of various updating and reconciliation algorithms that apply matrix algebra.

More policy issues can be monitored and analysed interrelatedly

The integration of more basic data entails the possibility of more policy issues being monitored and analysed interrelatedly. Above all, the linkages of employment and income distribution aspects to more macro-oriented objectives such as GDP-growth, balance of payments equilibrium and stable price levels comes within reach with a SAM.

SAMs are suitable for use in a macroeconomics teaching course

In view of their concise and conveniently arranged description of interrelationships between economic processes, their function as a systematic database for the joint derivation of monetary and non-monetary aggregate indicators and their close connection to flexible, economy-wide models of varying degrees of complexity, South Africa's are suitable for use in a macro-economic teaching course.

SAM as a tool for policy analysis

From an analytical point of view, the SAM also offers various new perspectives, particularly regarding the relationship between the distribution of income and economic development. The focus of the 1998 SAM is therefore also on income distributions according to different percentiles (12) for each of

the four population groups in South Africa. The accounting structure implied by a SAM can be used for all kinds of analyses, varying from simple analyses of income level and distribution changes and Keynesian multiplier analysis, through a somewhat more realistic “fixed price” analysis with income and expenditure elasticities deviating from one, to comprehensive, price endogenous Computable General Equilibrium models (CGE-models). The latter type of model, which can increasingly be used for policy making, implicitly or explicitly uses a SAM framework to calibrate the ‘base year situation’. Moreover, the projections or simulations resulting from these kinds of models can again be cast into a SAM framework. From a national accounts point of view, SAM extensions are conceptual improvements. A SAM enables analysts using National Accounts data to incorporate other aspects in their analysis. For data providers, e.g. in the field of the social statistics, the linkages of their data to the system of National Accounts enables new opportunities for their usage.

In comparison to the standard T-account, a SAM also records which (sub) sectors pay what to which other (sub) sectors. This feature allows a more thorough analysis of transmission mechanisms in the economy. For instance, in the South African SAM where both non-financial and financial accounts are included, this can greatly facilitate an analysis of the impact of monetary policy decisions on the holding of both financial and non-financial assets as well as liabilities. The capital and financial accounts provide the links between the real and the financial economy. If the capital accounts then also show which (sub) sectors have invested in what industries of the domestic economy and which (sub) sectors have invested abroad, the linkages between financing and real sector dynamics are better revealed.

Modelling

The SAM is a comprehensive, disaggregated, consistent and complete data system that captures the interdependence that exists within a socio-economic system. Alternatively, the SAM can be used as a conceptual framework to explore the impact of exogenous changes in such variables as exports, certain categories of government expenditure, and investment of the whole interdependent socio-economic system, e.g. the resulting structure of production, factorial and household income distribution. The South African SAM can be used to explore issues related to income distribution because of its finer disaggregation of private household expenditure into relatively homogeneous social-economic categories that are recognisable for policy purposes and exhibit relatively stable characteristics. This type of disaggregation allows the SAM to be used to analyse the effects of government policies on income distribution.

A SAM will lead to a more reliable description of inequalities among household groups

Since household surveys tend to underestimate not only total incomes or expenditure, but also inequality among households both within and between population groups, a reconciliation of these sources with demographic statistics, SU-tables, wage surveys, profit and loss statements, government accounts, a balance of payments summary, financial data, etc., in a SAM will lead to a more reliable description of inequalities among household groups.

A SAM provide a dependable summary of “structural” poverty

It is rather hazardous to count the poor in order to measure poverty on the basis of national accounts, but on the other hand, a SAM which contains an elaborate classification of households may provide a dependable summary of “structural” poverty; it will identify subgroups in which the households are typically poor, it will show which needs cannot be properly met in these groups, and, above all, it allows for analyses concerning the causes and consequences of these circumstances.

THE TABLES

Three tables are published in respect of 1998, namely:

- The National Accounting Matrix (NAM) (table 1, SAM.xls on diskette and p. 59);
- The Social Accounting Matrix (SAM) (table 2, SAM.xls on diskette); and
- selected external matrices (table 3, SAM.xls on diskette).

The first matrix i.e. the NAM (table 1) provides an aggregated view of the social accounting matrix (SAM) corresponding with the revised national accounts estimated for 1998 published in December 2001.

The Social Accounting Matrix (SAM) is reflected in table 2.

Table 3 gives external matrixes, with different classifications, for selected sub-matrixes.

The compilation of a SAM places a heavy burden on source data. It is, however, the aim of Statistics South Africa (Stats SA) to publish a SAM on a periodic basis as important data sources become available.

This report as well as the tables are also available on Stats SA's website:

www.statssa.gov.za

Table 1 – National Accounting Matrix: 1998 – (R million)

Integrated Economic Account (classification)	Code	0. Goods and services (products)	I. Production (industries)	II.1.1. Generation of income (race and occupations)	II.1.2. Allocation of primary income (institutional sectors)	II.2. Secondary distribution of income (institutional sectors)	II.4. Use of disposable income (race and percentiles)	III.1. Capital	III.2. Financial (financial intermediaries)	V. Rest of the world	Residual	TOTAL
		1	2	3	4	5	6	7	8	9	10	11
0. Goods and services (products)	1	Trade and transport margins	Use/ Intermediate consumption				Final consumption expenditure	Changes in inventories 1/	Gross fixed capital formation	Exports of goods and services		
		0	671 101				607 082	-2 634	125 876	190 189	622	1 592 238
I. Production (industries)	2	Supply/ Output										1 345 556
		1 345 556										1 345 556
II.1.1 Generation of income (race and occupation)	3		Domestic net value added, at basic prices							Compensation of employees from ROW		578 371
			577 868							503		578 371
II.1.2 Allocation of primary income (institutional sectors)	4	Taxes less subsidies on products		Net generated income, at basic prices	Property income: resident sector					Property income from ROW		
		65 050		576 072	365 643					ROW 6 690		1 013 455
II.2 Secondary distribution of income (institutional sectors)	5				Net national income	Current transfers: resident sector				Current transfers from ROW		
					625 587	331 589				334	-622	956 888
II.4 Use of disposable income (race and percentile)	6					Net disposable income	Adj. for change in net equity hh. on resident pension funds			Adj. for change in net equity of hh. on pension funds from ROW		648 100
						620 872	27 228			0		648 100
III.1 Capital	7						Net saving	Capital transfers 2/		Borrowing	Capital transfers from ROW 2/	348 237
							13 790	0		334 315	134	348 237
	8		Consumption of fixed capital					Net fixed capital formation				125 876
			96 587					29 289				125 876
III.2 Financial (financial intermediaries)	9							Lending			Net lending of ROW	334 315
								321 139			13 174	334 315
V. II Rest of the world, current	10	Imports of goods and services		Compensation of employees to ROW	Property income to ROW	Current transfers: to ROW	Adj. for change in net equity of hh. on pension funds to ROW					210 583
		181 632		2 299	22 225	4 427	0					210 583
V. III.1 Rest of the world, capital	11							Capital transfers to ROW 2/			Current external balance	13 308
								443			12 867	13 308
TOTAL	12	1 592 238	1 345 556	578 371	1 013 455	956 888	648 100	348 237	125 876	334 315	210 583	13 308
											0	0

1/ Including acquisition less disposals of valuables.

2/ Including acquisitions less disposals of non-produced non-financial assets.

EXPLANATORY NOTES

- Introduction** 1 This publication contains the SAM for 1998, compiled in accordance with the recommendations of the 1993 System of National Accounts.
- Scope of the SAM** 2 The SAM covers the entire economy. Twenty-seven different industry and product groups, six different components of final demand, four population groups, eleven occupation groups and twelve expenditure groups are distinguished.
- Classification** 3 The 1993 edition of the Standard Industrial Classification of all Economic Activities (SIC), Fifth Edition, Report No. 09-90-02, was used to classify the industries or economic activities in the System of National Accounts. The SIC is based on the 1990 (third revision) International Standard Industrial Classification of all Economic Activities (ISIC), with suitable adaptations for local conditions. The third revision of the ISIC differs in various respects from the previous edition. Therefore, the fifth edition of the SIC also differs from previous editions. Annexure 2 (p. 73) provide information on the industry groups that are included in the SAM.
- A product classification was developed for use in the SU-tables, and therefore also in the SAM, which is closely related to the SIC classification. The aim was to simplify the process of creating square SU-tables. More information on the product groups is provided in annexure 1 (p. 71).
- Reference period and time of recording** 4 The tables record production activities and transactions of goods and services conducted in South Africa during the reference year, i.e. 1998. Domestic production of goods is recorded at the time they are produced and that of services at the time they are provided. Intermediate consumption of goods and services is recorded at the time they are actually used in the production process. Final consumption of goods and services by households and general government is recorded at the time they are purchased irrespective of their delivery in general. Goods for fixed capital formation are recorded at the time they are delivered, and changes in inventories are recorded at the time legal proprietary rights are transferred. Imports and exports are recorded at the time of customs clearance.

Related publications

- 5 Users may also wish to refer to the following publications available from Stats SA:

Final Input-Output tables:

- Report No. 09-16-01 Input-output tables, 1967.
- Report No. 09-16-02 Input-output tables, 1971.
- Report No. 09-16-04 Input-output tables, 1975.
- Report No. 09-16-05 Input-output tables, 1978.
- Report No. 09-16-05 Input-output tables, 1981.
- Report No. 09-16-05 Input-output tables, 1981 (Imports separately).
- Report No. 04-02-01 (1984) Input-output tables, 1984.
- Report No. 04-02-02 (1984) Input-output tables, 1984 (Imports separately).
- Report No. 04-02-01 (1988) Input-output tables, 1988.
- Report No. 04-02-02 (1988) Input-output tables, 1988 (Imports separately).
- Report No. 04-02-01 (1989) Input-output tables, 1989.
- Report No. 04-02-02 (1989) Input-output tables, 1989 (Imports separately).

Preliminary Input-Output tables:

- Report No. 04-02-03 Input-output tables, 1993 (RAS-Method).
- Report No. 04-02-03 Input-output tables, 1993 (RAS-Method) (Imports separately).

Social Accounting Matrices:

- Report No. 04-03-02 (1988) Final Social Accounting Matrix for South Africa, 1988.

Supply and use tables

- Report No. 04-04-01 (1993) Final supply and use tables, 1993.
- Report No. 04-04-01 (1998) Final supply and use tables, 1998.
- Report No. 04-04-01 (1999) Final supply and use tables, 1999.

Unpublished statistics

- 6 In some cases, Stats SA can also make available information that is not published. This information can be made available in one or more of the following ways: computer printout, diskette or CD. Generally a fee is levied for providing unpublished information.

Symbols and abbreviations	7	c.i.f.	Cost of insurance and freight
		EUROSTAT	Statistical Office of the European Community
		F _x	Final demand component x in detailed SU-tables
		f.o.b.	Free on board
		FSIM	Financial Services Indirectly Measured
		GDP	Gross Domestic Product
		GFS	Government Financial Statistics
		I _x	Industry x in detailed SU-tables
		IMF	International Monetary Fund
		I-O tables	Input-Output tables
		ISIC	International Standard Industrial Classification of all Economic Activities
		ISWGNA	Inter-Secretariat Working Group on National Accounts
		NAM	National Accounts Matrix
		n.e.c.	not elsewhere classified
		NPI	Non Profit Institutions
		NPISHs	Non Profit Institutions serving Households
		OECD	Organisation for Economic Co-operation and development
		P _x	Product x in detailed SU-tables
		SAM	Social Accounting Matrix
		SARB	South African Reserve Bank
		SC _x	Column x in condensed supply table
		SIC	Standard Industrial Classification of all Economic Activities, fifth edition
		SNA	System of National Accounts
		SR _x	Row x in condensed supply table
		SU-tables	Supply and use tables
		Stats SA	Statistics South Africa
		UC _x	Column x in condensed use table
UNSTAT	United Nations Statistical Division		
UR _x	Row x in condensed use table		
VAT	Value Added Tax		
V _x	Value added component x in detailed SU-tables		
–	0 or too small to publish		

Rounding-off of figures **8** The figures have been rounded off to the nearest million. There may therefore be slight discrepancies between the sums of the constituent industries and the totals shown.

GLOSSARY

Ancillary activity	An ancillary activity is a supporting activity undertaken to create the conditions within which the activities of an enterprise are carried out.
Balancing item	A balancing item is an accounting construct obtained by subtracting the total value of the entries on one side of an account from the total value of the entries on the other side. Balancing items are not simply devices introduced by the 1993 SNA to ensure that accounts balance. They encapsulate a great deal of information and include some of the most important entries in the accounts, for example value added and operating surplus.
Basic price	The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output <i>minus</i> any tax payable <i>plus</i> any subsidy receivable on that unit as a consequence of its production or sale. Basic prices exclude any transport charges invoiced separately by the producer. Basic price is the preferred method of valuing output.
Capital transfer in kind	A capital transfer in kind consists of the transfer of ownership of an asset (other than inventories or cash) or the cancellation of a liability by a creditor.
Cash transfer	A cash transfer consists of the payment of cash or the equivalent of cash.
Commodity flow method	The commodity flow method is used to track the flow of goods and services from the supply (domestic production or imported) to the use (intermediate consumption, final consumption or exports) thereof.
Compensation of employees	Compensation of employees is defined as the total remuneration, in cash or kind, payable by an employer to an employee in return for work done by the latter during the accounting period. It is recorded on a gross basis, i.e. before any deduction for income taxes, pensions, unemployment insurance and other social insurance schemes. It also includes other forms of compensation, namely commissions, tips, bonuses, directors' fees and allowances such as those for holidays and sick leave, as well as military pay and allowances. It excludes employers' social contributions.
Cost, insurance and freight price	The cost, insurance and freight price (c.i.f.) is the price of a good delivered at the frontier of the importing country, or the price of a service delivered to a resident, before payment of any import duties or other taxes on imports or trade and transport margins within the country.
Current transfers	Current transfers comprise all transfers that are not classified as capital transfers. They directly affect the level of disposable income and should influence the consumption of goods and services.

Enterprise	An enterprise may be a corporation (a quasi-corporate enterprise is treated as if it is a corporation in the 1993 SNA), a non-profit institution or an unincorporated enterprise. Corporate enterprises and non-profit institutions are complete institutional units. An unincorporated enterprise, however, refers to an institutional unit - a household or government unit - only in its capacity as a producer of goods and services. It covers only those activities of the unit which are directed towards the production of goods and services.
Establishment	An establishment is defined as an enterprise, or part of an enterprise, that is situated at a single location and in which only a single (non-ancillary) productive activity is carried out or in which the principal productive activity accounts for most of the value added.
Factor cost	Factor cost is a valuation concept reflecting the cost of the factors of production (labour and capital). It corresponds to the value remaining after all applicable taxes and subsidies have been deducted from market prices.
Final demand	Different components of final demand are distinguished in the SU-tables. The supply table shows imports and the use table shows final consumption expenditure by households and the general government as well as gross capital formation (gross fixed capital formation and changes in inventories) and exports.
Financial services indirectly measured	Financial services indirectly measured (FSIM) are measured in the SNA as the total property income receivable by financial intermediaries minus their total interest payable, excluding the value of any property income receivable from the investment of their own funds. Therefore, income does not arise from financial intermediation.
Free on board price	The free on board price (f.o.b.) is the purchaser's price paid by an importer taking delivery of goods at the exporter's frontier after loading on to a carrier and after payment of any export taxes or the receipt of any tax rebates.
GDP at market prices	GDP at market prices equals total gross value added at basic prices <i>plus</i> taxes on products <i>minus</i> subsidies on products.
GDP for the economy	GDP for the entire economy is equal to GDP at market prices. It is essentially a production measure as it is obtained through the sum of the gross values added of all resident institutional units, in their capacity as producers, <i>plus</i> the values of any taxes, <i>less</i> subsidies, on production or imports not already included in the values of the outputs and values added by resident producers.

Generation of income account	The generation of income account provides for the distribution of primary incomes to the various institutional sectors. Primary incomes are incomes that accrue to institutional sectors and industries as a consequence of their involvement in processes of production or ownership of assets that may be needed for purposes of production.
Goods and services account	The goods and services account shows the total resources (output and imports) and uses of goods and services (intermediate consumption, final consumption, gross capital formation and exports). Taxes on products (less subsidies) are also included on the resource side of the accounts.
Gross operating surplus/Mixed income	Gross operating surplus or mixed income is the balancing item in the generation of income account, i.e. the value added <i>minus</i> compensation of employees payable <i>minus</i> taxes on production payable <i>plus</i> subsidies receivable.
Gross value added at basic prices	Gross value added at basic prices is defined as output valued at basic prices less intermediate consumption valued at purchasers' prices.
Gross value added at producers' prices	Gross value added at producers' prices is defined as output valued at producers' prices less intermediate consumption valued at purchasers' prices.
Homogeneous production	A unit of homogeneous production is defined as a producer unit in which only a single (non-ancillary) productive activity is carried out.
Industries	Industries consist of groups of establishments engaged in the same or similar kinds of activity. The definition of industries is based on the 1993 SNA and is in line with that contained in the Standard Industrial Classification of all Economic Activities, Fifth Edition, Report No. 09-90-02 of January 1993 (SIC).
Institutional unit	An institutional unit is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities.
Intermediate consumption	Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets. Consumption of fixed assets is recorded as consumption of fixed capital.
Other taxes on production	Other taxes on production consist of taxes on the ownership of land, buildings or other assets used in production or on labour employed, etc. Important examples of other taxes on production are taxes on payroll or work force, business or professional licenses.

Output	Output consists of those goods or services that are produced within an establishment that become available for use outside the establishment, plus any goods and services produced for own final use.
Primary industries	The primary industries include the agriculture, forestry and fishing, mining and quarrying industries.
Principal activity	The principal activity of an establishment is the activity whose gross value added exceeds that of any other activity carried out within the same unit.
Producers' price	The producer's price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any VAT, or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer.
Production account for the total economy	The production account is the first in the sequence of accounts compiled for institutional sectors, industries and the total economy. The production account contains three items apart from the balancing item, namely, output, intermediate consumption and taxes less subsidies on products. The output is recorded under resources on the right-hand side of the account. Intermediate consumption and taxes less subsidies on products is recorded under uses on the left-hand side of the account.
Production boundary	The general production boundary is defined as an economic activity (or production) carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce output of goods and services. The production boundary in the 1993 SNA is more restricted than the general production boundary due to the production accounts not being compiled for household activities that produce domestic or personal services for own final consumption within the same household, except for services produced by paid domestic staff.
Purchasers, price	The purchaser's price is the amount paid by the purchaser, excluding any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place.
Secondary activity	A secondary activity is an activity carried out within a single establishment in addition to the principal activity.
Secondary industries	The secondary industries include the manufacturing, electricity, gas, water and construction industries.
Square	A matrix is square when it has an equal number of columns and rows.

Other subsidies on production	Subsidies are transfers from the government to the business sector toward current cost of production. These transfers represent additions to the income of producers from current production.
Subsidies on products	Subsidies on products are payable per unit of a good or service.
Supply and use tables	The SU-tables are sometimes referred to as rectangular input-output tables, make and use tables, supply and disposition of commodities tables.
Supply table	The supply table gives information about the resources of goods and services.
Symmetric	Symmetric tables use similar classifications or units, i.e. the same groups of products for both the rows and the columns.
System of National Accounts	System of National Accounts refers to an internationally agreed standard system for macro-economic accounts. The latest version is described in the 1993 System of National Accounts (1993 SNA).
Taxes on income	Taxes on income consist of taxes on incomes, profits and capital gains. They are assessed on the actual or presumed incomes of individuals, households, non-profit institutions serving households (NPISH) or corporations. They include taxes assessed on holdings of property, land or real estate when these holdings are used as a basis for estimating the income of their owners.
Taxes on production and imports	Taxes on production and imports are taxes which add to the cost of production and are likely to be reflected in market prices paid by the purchaser, such as sales and excise taxes, import duties and property taxes. Taxes on production and imports include taxes on products and other taxes on production.
Taxes on products	Taxes on products consist of taxes payable on goods and services when they are produced, delivered, sold or otherwise disposed of by their producers. Furthermore, they are payable per unit of a good or service produced. Important examples of taxes on products are excise and import duties and VAT.
Tertiary industries	Tertiary industries include wholesale and retail trade and motor trade; catering and accommodation; transport and communication; finance, real estate and business services; community, social and personal services; general government services; and other producers.
Transfer	A transfer is defined as a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as counterpart.

Transfer in kind	A transfer in kind consists of the transfer of the ownership of a good or an asset, other than cash, or the provision of a service.
Use table	The use table gives information on the uses of goods and services, and also on cost structures of the industries.
Value added components	The use table distinguishes three different components of value added, i.e. compensation of employees, other taxes less subsidies on production and gross operating surplus/mixed income.
Value added by industry	Value added measures the value created by production and may be calculated either before or after deducting the consumption of fixed capital on the fixed assets used. Gross value added is defined as the value of output less the value of intermediate consumption. Value added is the balancing item in the production account for an institutional unit or sector, or establishment or industry.

ANNEXURES

Annexure 1 provides a link between the description of the 27 products used in the SAM (table 2, SAM.xls) and the description of the 95 products used in the SU-tables (tables Q and R, p. 38).

Annexure 1 – Description of products used in the SAM

Product code	Product category in SAM	SU-tables product description
P1100	Agriculture	Agricultural, forestry and fishing products
P2100	Coal	Coal and lignite products
P2300	Gold	Gold and uranium ore products
P2500	Other mining	Other mining products
P301-6	Food	Meat products; Fish products; Fruit and vegetables products; Oils and fats products; Dairy products; Grain mill products; Animal feeds; Bakery products; Sugar products; Sugar confectionery; Other food products; Beverages and tobacco products.
P311-316	Textiles	Textile products; Made-up textile products; Carpets and rugs; Other textiles products; Wearing apparel; Leather products; Handbags.
P317	Footwear	Footwear
P331-338	Petroleum	Fuel products; Basic chemical products; Fertilizers; Primary plastic products; Pesticides; Paints; Pharmaceutical products; Soap products; other rubber products; Plastic products
P341-342	Other non-metallic mineral products	Glass products; Non-structural ceramics; Structural ceramic products; Cement; Other non-metallic
P351-359	Basic iron/steel	Iron and steel products; Non-ferrous metals; Structural metal products; Treated metal products; General hardware products; Other fabricated metal products; Engines; Pumps; Gears; Lifting equipment; General machinery; Agricultural machinery; Machine tools; Mining machinery; Other special machinery; Household appliances; Office machinery
P36	Electrical machinery	Electric motors; Electricity apparatus; Wire and cable products; Accumulators; Lighting equipment; Other electrical products
P371-376	Radio	Radio and television products; Optical instrument

Annexure 1 – Description of products used in the SAM (concluded)

Product code	Product category in SAM	SU-tables product description
P381-387	Transport equipment	Motor vehicles; Motor vehicle parts; Other transport products
P321-6, 391-5	Other manufacturing	Wood products; Paper products; Containers of paper; Other paper products; Published and printed products; Recorded media products; Furniture; Jewellery; Manufactured products n.e.c.
P4100	Electricity	Electricity
P4200	Water	Water
P5	Construction	Building construction; Other construction
P6100	Trade	Trade services
P64	Hotels and restaurants	Hotel and restaurant services
P7100	Transport services	Transport services
P7500	Communications	Communications
P81-83	Financial intermediation	FSIM; Insurance services
P84	Real estate	Real estate services
P85-88	Business activities	Other business services
P91&94	General government	General government services
P9300	Health and social work	Health and social work
P92/5/6/9	Other activities/ services	Other activities/ services

Annexure 2 provides the corresponding SIC for each industry description used in the SAM (table 1, SAM.xls and p. 59).

Annexure 2 – Link between SAM industries and SIC

Industry code	Industry category in SAM	SU-tables industry description
I1100	Agriculture	1110; 1120; 1130; 1140; 1150; 1160; 1210; 1220; 1310; 1320
I2100	Coal	2100
I2300	Gold	2300
I2500	Other mining	2210; 2410; 2420; 2510; 2520; 2530; 2900
I301-6	Food	3011; 3012; 3013; 3014; 3020; 3031; 3032; 3033; 3041; 3042; 3043; 3044; 3049; 3051; 3052; 3053; 3060
I311-316	Textiles	3111; 3112; 3121; 3122; 3123; 3129; 3130; 3140; 3150; 3161; 3162
I317	Footwear	3170
I331-338	Petroleum	3310; 3321; 3322; 3323; 3324; 3325; 3329; 3330; 3341; 3342; 3343; 3360; 3351; 3352; 3353; 3354; 3359; 3371; 3379; 3380
I341-342	Other non-metallic mineral industries	3411; 3421; 3422; 3423; 3424; 3425; 3426; 3429
I351-359	Basic iron/steel	3510; 3531; 3520; 3532; 3541; 3542; 3543; 3551; 3552; 3553; 3559; 3561; 3562; 3563; 3565; 3564; 3569; 3571; 3572; 3574; 3575; 3573; 3576; 3577; 3579; 3580; 3590
I36	Electrical machinery	3610; 3620; 3630; 3640; 3650; 3660
I371-376	Radio	3710; 3720; 3730; 3741; 3742; 3743; 3750; 3760
I381-387	Transport equipment	3810; 3820; 3830; 3841; 3842; 3850; 3860; 3871; 3872; 3879
I321-6, 391-5	Other manufacturing	3210; 3221; 3222; 3223; 3229; 3231; 3232; 3239; 3241; 3242; 3249; 3251; 3252; 3243; 3260; 3910; 3921; 3922; 3923; 3924; 3929; 3951; 3952
I4100	Electricity	4110; 4120; 4130

Annexure 2 – Link between SAM industries and SIC (concluded)

Industry code	Industry category in SAM	SU-tables industry description
I4200	Water	4200
I5	Construction	5021; 5024; 5031; 5032; 5033; 5039; 5041; 5049; 5010; 5022; 5023; 5050
I6100	Trade	6110; 6120; 6130; 6140; 6150; 6190; 6210; 6220; 6230; 6240; 6250; 6260; 6310; 6320; 6330; 6340; 6350
I64	Hotels and restaurants	6410; 6420
I7100	Transport services	7110; 7120; 7130; 7210; 7220; 7300; 7410
I7500	Communications	7510; 7520
I81-83	Financial intermediation	FISM; 8110; 8190; 8210; 8310; 8320
I84	Real estate	8410; 8420
I85-88	Business activities	8510; 8520; 8530; 8610; 8620; 8630; 8640; 8650; 8690; 8710; 8720; 8810; 8820; 8830; 8890
I91&94	General government	9110; 9120; 9130; 9400
I9300	Health and social work	9311; 9312; 9319; 9320; 9330
I92/5/6/9	Other activities/services	9200; 9500; 9600; 9900; 0200; 0900

The abbreviated description of occupations used in the SAM and the corresponding SASCO-group codes are shown in annexure 3.

Annexure 3 – Key between occupation descriptions and SASCO groups

SAM description (Skill level)	Corresponding South African Standard Classification of Occupation (SASCO) groups
Legislators (4)	Legislators; senior government officials; traditional chiefs and heads of villages; senior officers of special-interest organisations; legislators and senior officers not elsewhere classified; corporate managers, directors and chief executives; production and operation managers/ department managers; other managers/ department managers; corporate managers not elsewhere classified; general managers; general managers not elsewhere classified.
Professionals (4)	Physicists, chemist and related professionals; mathematicians, statisticians and related professionals; computing professionals; architects, engineers and related professionals; physical sciences technologists; physical, mathematical and engineering science professionals not elsewhere classified; life science professionals; health professionals; nursing and midwifery professionals; life science and health professionals not elsewhere classified; college, university and higher education institutions teaching professionals; secondary education institutions teaching professionals; primary and pre-primary education teaching professionals; special education institutions teaching professionals; other teaching institutions teaching professionals; other education professionals not elsewhere classified; business professionals; legal professionals; archivists, librarians and related information professionals; social science and related professionals; writers and creative or performing artists; religious professionals; other professionals not elsewhere classified.

Annexure 3 – Key between occupation descriptions and SASCO – groups (continued)

SAM description (Skill level)	Corresponding SASCO groups
Technicians (3)	Natural and engineering science technicians; optical and electronic equipment operators, ship and aircraft controllers and technicians; physical engineering science associate professionals not elsewhere classified; life science technicians and related associate professionals; modern health associate professionals (except nursing); nursing and midwifery associate professionals; traditional medicine practitioners and faith healers; life science and health professionals not elsewhere classified; primary education teaching associated professionals; pre-primary education teaching associate professionals; special education teaching associate professionals; other teaching associate professionals; teaching associate professionals not elsewhere classified; finance and sales associate professionals; business services agents and trade brokers; administrative associate professionals; customs; tax and related government associate professionals; police inspectors and detectives; social work associate professionals; artistic, entertainment and sports associate professionals; religious associate professionals; other associate professionals not elsewhere classified.
Clerks (2)	Secretaries and keyboard operating clerks; numerical clerks; material-recording and transport clerks; library, mail and related clerks; other office clerks and clerks not elsewhere classified (except customer services clerks); cashiers, tellers and related clerks; client information clerks; customer services clerks not elsewhere classified.
Service workers (2)	Travel attendants and related workers; housekeeping and restaurant services workers; personal care and related workers; other personal services workers; astrologers, fortune tellers and related workers; protective services workers; personal and protective service workers not elsewhere classified; fashion and other models; shop salesperson and demonstrators; stall and market salesperson; models, salesperson and demonstrators not elsewhere classified.

Annexure 3 – Key between occupation descriptions and SASCO – groups (continued)

SAM description (Skill level)	Corresponding SASCO groups
Skilled agricultural workers (2)	Market gardeners and crop growers; market-oriented animal producers and related workers; market-oriented crop and animal producers; forestry and related workers; fishery workers, hunters and trappers; market-oriented skilled agricultural and fishery workers not elsewhere classified; subsistence agricultural and fishery workers.
Craft workers (2)	Miners, shot-firers, stone cutters and carvers; building frame and related trades workers; building finishers and related trades workers; painters, building structure cleaners and related trades workers; extraction and building trades workers not elsewhere classified; metal moulders, welders, sheet-metal workers, structural metal preparers and related trades workers; blacksmiths, tool-makers and related trades workers (excluding apprentices/trainees); machinery mechanics and fitters; electrical and electronic equipment mechanics and fitters; metal, machinery and related trades workers not elsewhere classified; precision workers in metal and related trades workers; potters, glass-makers and related trades workers; handicraft workers in wood, textile, leather and related materials; printing and related trades workers; precision, handicraft, printing and related trades workers not elsewhere classified; food processing and related trades workers; wood treaters, cabinetmakers and related trades workers; textile, garment and related trades workers; pelt, leather and shoemaking trades workers; other craft and related trades workers not elsewhere classified.

Annexure 3 – Key between occupation descriptions and SASCO – groups (concluded)

SAM description (Skill level)	Corresponding SASCO groups
Plant and machine operators (2)	Mining and mineral processing plant operators; metal processing plant operators; glass, ceramics and related plant operators; wood-processing and papermaking plant operators; chemical processing plant operators; power-production and related plant operators; automated assembly-line and industrial-robot operators; stationary-plant and related operators not elsewhere classified; metal and mineral-products machine operators; chemical-products machine operators; rubber and plastic products machine operators; rubber and plastic products machine operators; wood products machine operators; printing, binding and paper products machine operators; textile, fur and leather products machine operator; food and related products machine operators; assemblers; other machine operators and assemblers not elsewhere classified; locomotive engine drivers and related workers; motor vehicle drivers and related workers; agricultural and other mobile plant operators; ships' deck crews and related workers; drivers and mobile plant operators not elsewhere classified.
Elementary occupations (1)	Street vendors and related workers; shoe-cleaning and other elementary street services occupations; cleaners and launderers; building caretakers and window and related cleaners; messengers, porters, doorkeepers and related workers; garbage collectors and related workers; elementary sales and services occupations not elsewhere classified; agricultural, fishery and related labourers; agricultural, fishery and related labourers not elsewhere classified; mining and construction labourers; manufacturing labourers; transport labourers and freight handlers; labourers in mining, construction, manufacturing and transport not elsewhere classified.
Domestic workers (1)	Domestic and related helpers
Occupation unspecified (1)	Armed forces, occupations unspecified; unemployed persons, occupations unspecified; occupations in the informal sector not elsewhere classified; occupations not elsewhere classified; occupations not adequately defined; homemakers; children, not scholars or students (less than 15 years old); scholars, students; pensioners and other not economically active (65 years and older) and labour-disabled (15 to 64 years old) persons; not economically active persons not elsewhere classified; foreign visitors.

The abbreviated description of household expenditure range used in the SAM are shown in annexure 4.

Annexure 4 – Key between percentiles and annual household expenditure

Percentile	Annual household expenditure R	% of population
P1	1 – 540	0 – 5%
P2	541 – 5 700	6 – 10%
P3	5 701 – 8 496	11 – 20%
P4	8 497 – 10 716	21 – 30%
P5	10 717 – 12 996	31 – 40%
P6	12 997 – 15 828	41 – 50%
P7	15 829 – 19 992	51 – 60%
P8	19 993 – 26 556	61 – 70%
P9	26 557 – 37 884	71 – 80%
P10	37 885 – 57 816	81 – 90%
P11	57 817 – 75 840	91 – 95%
P12	75 841 +	96 – 100%

The abbreviated population groups used in the SAM are shown in annexure 5.

Annexure 5 – Population codes used in the SAM

Population code	Population group
A	African
C	Coloured
I	Indian
W	White
U	Unspecified
T	Total

The skill levels used in the SAM are shown in annexure 6.

Annexure 6 – Major occupational groups and skill levels

Major group	Skill level	Description
Legislators	4	Education which begins at the age of 18 or 19, lasts about three, four or more years, and leads to a university or post-graduate university degree.
Professionals	4	
Technicians	3	Education which begins at the age of 17 or 18, lasts about one to four years, and leads to an award not equivalent to a first university degree.
Clerks	2	Secondary education which begins at the age of 13 or 14 and last about five years. A period of on-the-job-training and experience may be necessary.
Service workers	2	
Skilled agricultural workers	2	
Craft workers	2	
Plant and machine operators	2	
Elementary occupations	1	Primary education which generally begins at the age of 6 or 7 and lasts about 7 years. Including persons without any formal primary education, or with incomplete primary education.
Domestic workers	1	
Occupation unspecified	1	

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