INTERNATIONAL MONETARY FUND

Statistics Department

CHILE

REPORT ON THE NATIONAL ACCOUNTS MISSION

(March 28–April 8, 2011)

Prepared by Bent Thage (Expert)

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ABBREVIATIONS

1993 SNA	*System of National Accounts, 1993*
2008 BC	Chilean Benchmark Compilation 2008
ANA	Annual National Accounts
BC	Benchmark Estimates Compilation
BCCH	Central Bank of Chile
COFOG	Classification of Functions of Government
COICOP	Classification of Individual Consumption by Purpose
DNA	Department of National Accounts
ESA	European System of Accounts
FISIM	Financial Intermediation Services Indirectly Measured
GVA	Gross Value Added
HBS	Household Budget Survey
IC	Intermediate Consumption
IMF	International Monetary Fund
IRS	Internal Revenue Service
ISIC	*International Standard Classification of all Economic Activities*
LFS	Labor Force Survey
NOE	Nonobserved Economy
NSI	National Statistical Institute
OAW	Own-Account Workers
OECD	Organisation for Economic Co-operation and Development
PFS	Project Framework Summary
PIM	Perpetual Inventory Method
QNA	Quarterly National Accounts
ROSC	Reports on the Observance of Standards and Codes
RUT	Rol Único Tributario
STA	Statistics Department, IMF
SUT	Supply and Use Tables
TA	Technical Assistance
UF	Fixed Purchasing Power Accounting Unit
VAT	Value Added Tax

EXECUTIVE SUMMARY

In response to a request from the Central Bank of Chile (BCCH), a technical assistance (TA) mission on national accounts statistics visited Santiago, Chile, during March 28–April 8, 2011. The main purpose of this mission was to review and assess the ongoing compilation of benchmark estimates of the Chilean annual national accounts (ANA) for the year 2008.

A comprehensive program had been prepared to inform the mission about all aspects of the benchmark estimates compilation (BC) for 2008, including 25 PowerPoint presentations with English text. Moreover, simultaneous interpretation was made available. The mission reviewed and assessed the source data and methods for the compilation of the supply and use tables (SUT) for 2008 and discussed possible improvements. It also addressed the compilation of the new series with 2008 as the benchmark year and as the reference year for new volume estimates according to the annual chaining method.

The work plan for the Chilean benchmark compilation 2008 (2008 BC), including the detailed timetable prepared already by the end of 2007 has so far been observed, and the various project results and reports delivered in a timely manner. This outcome reflects the well structured organization of the work.

The human and financial resources allocated to the project are sufficient measured against international standards. Staff of the Department of National Accounts (DNA) have increased by 12 persons during the project period, and financial resources were made available for the outsourcing of special surveys conducted in connection with the project. The extra staff should be seen on the background of a permanent staff level of 37 employees. In general, staff members demonstrated a high degree of professionalism.

In connection with the 2008 BC, virtually all remaining methodological adjustments to the *System of National Accounts,* 1993(*1993 SNA)* have been implemented. In principle, the *1993 SNA* was already implemented in the Chilean national accounts with the 1996 benchmark exercise that was completed in 2002. However, mainly based on shortcomings in data sources, not all the required changes could be implemented in that round. In the 2003 BC, natural growth of trees as output was introduced, but some other items remained as minor deviations from the *1993 SNA*. These will be implemented with the 2008 BC. In this context, Chile is clearly in observance of the *1993 SNA* with a few insignificant exceptions, as is the case in many countries.

With the 2008 BC, Financial Intermediation Services Indirectly Measured (FISIM) will be distributed to users, and the chaining method will be introduced for volume estimates. With these changes, Chile will be following internationally recommended methodology, even though the previous methods did not represent formal deviations from the *1993 SNA*.

Another improvement compared to the 2003 BC is that the classification of individual consumption by purpose (COICOP) and the classification of the functions of government

(COFOG) will be applied in the 2008 BC. During 2009, results were published for the years 2003–2007 for both household consumption and government consumption classified according to COICOP and COFOG, respectively.

The SUT are compiled, as recommended in the *1993 SNA*. With the 2008 BC, the number of economic activities (industries) and products has increased. Whereas earlier SUT were square, containing73 industries and 73 products, the basic supply and use framework for the 2008 BC contains 145 industries and 240 products for balancing purposes and the future dissemination of data. The data modeling and reconciliation system applied for the 2008 BC represents a new generation of the previously applied system with computational procedures that are automatically documented and made reproducible. The methodology and statistical techniques applied in connection with the SUT are matching best international practices.

Concerning source data for the 2008 BC, the availability of the household budget survey (HBS) 2007, the Census for Agriculture and Forestry for 2007, and Fishing and Aquaculture Census for 2007, represent major improvements, as does the broader use of administrative records. There are, however, still areas where source data are insufficient, such as for construction, and some service activities. There is also a lack of economic statistics with a general coverage, such as structural business statistics based on financial statements or official statistics based on the value added tax (VAT) records. In spite of improvements, the business register is still unsatisfactory, which is partly caused by very rigid confidentiality rules for tax related data.

In general, the approaches used in the estimates for individual activities were found to be methodologically sound. For those activities where various methodological problems were identified in connection with the 2003 BC, in particular FISIM, owner-occupied dwellings, and mineral exploration, new approaches in connection with the 2008 BC have resolved the problems.

The mission's overall assessment is that the 2008 BC is a well managed and implemented project. The overall strategy, planning, and implementation of the work, as well as the professional standard of the methods used, are assessed as being of a high international standards and recognized best practices. This assessment is similar to the one previously given of the 2003 benchmark exercise, thus reflecting the consistently high standard of national account*s* work in Chile.

The strategy for the new compilation cycle was outlined. The basic idea is to compile the final annual accounts in a more benchmark-like manner, thus in principle making future benchmark exercises such as the 2008 BC unnecessary, as there will be a continuous updating of the system, and major revisions will be carried out when required, and without reference to any specific year.

INTERNATIONAL MONETARY FUND
STATISTICS DEPARTMENT (STA)

Project Framework Summary (PFS)
National accounts statistics - **STA_CHL_2005_07**

Country	**Chile**		
Project Areas	**National Accounts**		
Lead Dept.	**STA**	Lead Division	**RE**
Support Dept.	**STA**	RTAC	
Project Duration	**02/04/2005 -**		
Project Manager	**Segismundo Fassler Tevlin**		
PFS Details	First generated on; Last updated on June 2011 (mission March 28–April 8, 2011)		

PROJECT DESCRIPTION
Updating the base year for the national accounts

PROJECT OBJECTIVES 1.0

Description	Verifiable Indicators	Assumptions/Risk
Updating the base year for the national accounts statistics	The results of supply and use tables (SUT) for the year 2008 are reviewed and revised, as needed, to serve as benchmark estimates for the revised series of annual (ANA) and quarterly national accounts (QNA) with 2008 as the base year.	There are no expected risks, as Chile has a long tradition in compiling SUT which have been used at intervals between five and 10 years to update the national accounts base years.

PROJECT OUTCOMES

DQAF	Priority	Outcomes Description	Verifiable Indicators	Completion Date	Implementation Status
		Continue to improve source data for the compilation of the SUT: business registers, classifications, economic surveys, etc.	New or improved data sources in the form of censuses, surveys and administrative records are used in the benchmark compilation	Continuous	Source data are improved compared to the 2003 benchmark estimates compilation (BC), in particular with the household budget survey (HBS) and agriculture and fishing censuses.
		Actively contribute to the improvement of the business register in the National Statistical Institute (NSI)	The business register is currently being updated with new enterprises and classification by economic activity.	Continuous	The coverage and actuality is improved since the 2003 BC, but there are still problems with current updating, and the Central Bank of Chile (BCCH) has developed its own, more complete version.
		Adjust the methodology used for the compilation of output of selected, such as owner-occupied dwellings, mineral exploration, software, and others, to the internationally recommended.	The methodologies used for the mentioned industries have been adjusted	Done: release in October 2011	All recommended changes to methodology have been implemented with the Chilean benchmark compilation 2008 (2008 BC).
		Take steps to eliminate the remaining deviations from the *System of National Accounts,1993 (1993 SNA)*	Remaining deviations, except for insignificant ones, have been eliminated	Done, release in October 2011	Except for insignificant deviations, the Chilean national accounts are with the 2008 BC in compliance with the *1993 SNA*.
		Calculate Financial Intermediation Services Indirectly Measured (FISIM) according to the reference rate method, and distribute it by users.	The FISIM calculated as recommended in the *1993 SNA* and distributed to final and intermediate users.	Done: release in October 2011	With the 2008 BC, FISIM is calculated according to the reference rate method and distributed by user.
		Further increase the number of industries and products in the supply and use framework to obtain the full potential of the	The numbers of industries and products have been increased and the applied statistical techniques further developed.	2010	In the 2003 BC and subsequent compilation cycles, the SUT were square, containing 72 industries and 72 products. The 2008 BC contains 145 industries and 240 products.

DQAF	Priority	Outcomes Description	Verifiable Indicators	Completion Date	Implementation Status
		commodity flow method and develop the techniques used accordingly.			The data modeling and reconciliation system applied for the 2008 BC is further developed.
		Introduce the classification of individual consumption by purpose (COICOP) classification for household consumption and classification of functions of government (COFOG) for government expenditures.	The COICOP and COFOG have been introduced and currently applied	2009	The COICOP and COFOG were introduced in 2009 and also used in the 2008 BC
		Decide on the introduction of the chaining method for the volume estimates	The release data for the chained constant price estimates has been decided.	2012	The chaining method will be introduced in the compilation cycle following the 2008 BC, and the first chain linked data will be published in March 2012
		Take decision on the strategy to be followed in the new compilation cycle following the 2008 benchmark compilation	A decision has been taken concerning future compilation strategy and strategy for back series.	2011	It has been decided to compile the final annual accounts in a more benchmark-like manner, thus in principle making future benchmark exercises such as the 2008 BC unnecessary, as there will be a continuous updating of the system and major revisions will be carried out when required, and without reference to any specific year. There is not yet any decision on the length of the back series or the statistical techniques to be applied.

Priority Scale

H - High   M - Medium   O - Other

TA ACTIVITIES - COMPLETED AND PLANNED UNDER THIS PROJECT

Date	ID	TA Activity Description
02/04/2005 - 02/11/2005	05STN73	National Accounts Statistics
01/04/2006 - 01/17/2006	06STZ42	National Accounts Statistics
03/28/2011 - 04/08/2011	11STZ11	STE: National Accounts Statistics

I. INTRODUCTION

A. Scope of Mission's Tasks

1.   In response to a request from the Central Bank of Chile (BCCH), a technical assistance (TA) mission on national accounts statistics to Santiago, Chile, was conducted during March 28–April 8, 2011. The main purpose of this mission was to review and assess the ongoing compilation of benchmark estimates of the Chilean annual national accounts (ANA) for the year 2008.

2.   The mission reviewed and assessed the source data and methods for the compilation of the supply and use tables (SUT) for 2008 and discussed possible improvements, as needed. It also addressed the compilation of the new series with 2008 as the benchmark year and as the reference year for new volume estimates according to the annual chaining method.

3.   In particular, the mission (i) reviewed and assessed the source data for the compilation of the SUT: business registers, classifications, economic surveys, etc.; (ii) the methodology used for the compilation of output of selected industries for which recommendations were provided by the 2006 STA mission, including Financial Intermediation Services Indirectly Measured (FISIM), owner-occupied dwellings, mineral exploration, software, and other activities; and (iii) the methodology used for major economic activities such as agriculture, mining, manufacturing, construction, electricity, gas and water supply, wholesale and retail trade, and transport and cross-cutting issues such as producer households and own-account workers (OAW), changes in inventories, fixed capital formation, household consumption expenditures, the work organization and the techniques applied in the balancing of the SUT, including valuation matrices, and discussed with the staff possible improvements, as needed. Finally, the benchmark supply and use system as basis for the new compilation cycle of annual and quarterly accounts and the introduction of the chaining method for volume estimates were dealt with.

4.   In Chile, national accounts estimates are compiled in the Macro Economic Statistics Area of the Department of National Accounts (DNA), which is part of the Statistics Division of the BCCH. A comprehensive program had been prepared to inform the mission about all aspects of the benchmark estimates compilation (BC) 2008, including 25 PowerPoint presentations with English text. In addition, high quality simultaneous interpretation was made available. The mission is very appreciative of the pleasant, cooperative, and helpful attitude of the staff met during its stay.

B. Background

5.   The BCCH is currently working on updating the national accounts statistics by changing the benchmark year from 2003 to 2008. Preliminary SUT for the year 2008 have been compiled to serve as benchmark estimates for the updated series. In this context, the authorities have requested TA from the IMF to assess the quality of the benchmark estimates and to provide advice for the compilation of the new series. This mission is a follow-up to a

similar STA mission to the BCCH in January 2006 related to the 2003 benchmark project. In the meantime, a Reports on the Observance of Standards and Codes (ROSC) mission was conducted in 2007, and it may also be noted that Chile joined the Organisation for Economic Co-operation (OECD) and Development in 2010.

II. THE CHILEAN BENCHMARK COMPILATION 2008

Introduction

6.   The objective of the Chilean Benchmark Compilation 2008 (2008 BC) is twofold. Firstly, to establish a new benchmark for the Chilean national accounts based on a broader set of source data and improved measurement methods, and secondly to change the present fixed base year for the volume estimates, which is 2003, to chain linked estimates of volume measures with 2008 as the reference period. At the same time, the few remaining adjustments to the *System of National Accounts, 1993* (*1993 SNA*) are being implemented. The benchmark compilation brings together all the necessary information to:

- Introduce new and/or more detailed source data in the compilation of the national accounts data to correct for the "drift" in the annual series that may have taken place since the preceding benchmark was established in 2003. This need arises in particular because the annual (non-benchmark) series are compiled on the assumption that certain structural relationships (such as ratios of intermediate consumption to output by economic activity) remain unchanged from the base year.

- Change from 2003 as the fixed base year for the constant price estimates to the internationally recommended annual chaining method. The year 2008 will be chosen as the reference year for the chain-linked series.

- Introduce the remaining adjustment to the *1993 SNA*, in particular distribution of FISIM by user and mineral exploration as fixed capital formation rather than intermediate consumption.

7.   To fulfill these objectives, the information on products and activities are reconciled in detailed SUT, while the information on institutional units is organized in the integrated economic accounts. Both approaches allow the reconciliation of extensive data collected from various sources, including censuses, surveys, financial statements, and other statistical and administrative source data, including administrative records from the Internal Revenue Service (IRS).

8.   The 2008 BC is the sixth carried out in Chile. Previous benchmark compilations were implemented for the years 1962, 1977, 1986, 1996, and 2003. For each of these six years, new sets of national accounts were compiled based on additional source data that are not normally available with an annual frequency or are not utilized to the same degree in the current annual compilations. These data concern activities that are either covered less frequently than annually, as in the cases of the Population and Housing Census, the Agriculture and Livestock Census, and the Household Budget Survey (HBS), or are not well

covered by official statistics at any frequency, such as in the case of construction and a long list of more detailed activities and individual products.

9.   The six benchmark compilations are comparable in the sense that they involve a similar thorough effort in connection with the establishment of a comprehensive set of source data. It is also noticeable that the benchmark compilations are mutually independent in the sense that structures, distributions, etc. are only in very special cases carried over from the preceding benchmark year. The interconnections between the benchmark years, and in particular the two most recent ones, 2003 and 2008, are thus exclusively based on the type of source data used, including the surveys especially conducted for the benchmark exercises and on the editing and balancing techniques applied.

10.   The 2008 BC has been documented in detail during the project period. As the project has not yet been completed, many working papers are at present available as drafts only. The results of the 2008 BC will take the form of the publication of the 2008 input-output matrices and the 2008 integrated accounts, as well as a number of working papers that will report on methods and results. Prior to the first release of chain-linked volume estimates, users will be informed about the implications of the chaining method by meetings in the existing statistical committees and explanatory notes on the BCCH website. In addition to a comprehensive publication on the project methodology and results in November 2011, the release of data resulting from the project will be:

In 2011
- Supply and use matrices and symmetric input-output matrix for 2008
- Investment matrix 2008

In 2012
- Annual and quarterly GDP series 2008–2010 (reference year 2008 for chain-linked volume estimates).

The new compilation cycle

11.   As with previous benchmark compilations, a new compilation cycle for annual (ANA) and quarterly national accounts (QNA) will be based on the 2008 BC. A major methodological innovation will be the introduction of chain-linked volume estimates in both the annual and quarterly accounts. For the latter, the annual overlap method will be applied which is consistent with international practices. It was mentioned that with the chain-linking, the current price estimations had to be more robust, as the effects of problematic data would have a permanent effect on the chained volume time series.

12.   On this background a new strategy is being developed for the compilation of the annual accounts, whereby the final accounts after 27 months would be compiled in a very benchmark- like manner, making more optimal use of all available data sources than at present. This approach will make future benchmark exercises similar to 2008 BC

unnecessary, as there will be a continuous updating of the system, and major revisions will be carried out when required, and without reference to any specific year.

13.   This new strategy will be supported by the improved source data, as all the improvements that have taken place in connection with the 2008 BC will continue on a regular basis. In this setting, the resources for the annual accounts will be shifted from the preliminary versions to the final version. This new approach includes also reconciliation of the quarterly data in an aggregated supply and use framework.

14.   The need for longer time series was discussed, and in this connection an approach where the back series would be compiled using "reduced" SUT and constrained statistical methods. The mission noted that such a method had been widely and successfully applied over the years in Denmark and represented an efficient approach both concerning resources and preservation of information.

Institutional setting and project management

15.   In Chile, national accounts are compiled in the BCCH. The Statistical Division of the BCCH consists of two areas—Statistical Information and Macroeconomic Statistics, and within the latter, the Departments for Balance of Payment and the Department of National Accounts (DNA). The 2008 BC benchmark compilation is carried out within this institutional setting but with considerable cooperation from external partners, in particular the National Statistical Institute (NSI).

The table below presents the time table for the project

Activities	2008 Bench mark compilation and new compilation cycle																				2012
	2007				2008				2009				2010				2011				
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Statistical Architecture	■	■	■	■	■	■															
Production account by industries			■	■	■	■	■	■	■	■	■	■	■	■							
Preliminary balancing															■						
Rest of the world									■	■	■	■	■	■							
Capital investment							■	■	■	■	■	■	■	■	■	■	■				
Own account workers					■	■	■			■						■	■				
Tax Matrix																	■	■			
Trade Margins Matrix																	■	■			
Balancing SUT																■	■	■			
IMF misssion																■					
Input-output Matrix																			■		
Paper preparation and release																■	■				
New series (chain linked index)																	■	■	■	■	■

16.   The project plan, including the detailed timetable, was worked out by the end of 2007 as the basis for the approval of the benchmark exercise by the Board of the BCCH. The timetable has so far been followed closely over the project period, and the various project results and reports delivered in a timely manner.

17.	A special project group headed by two permanent staff members of the DNA has been responsible for the daily implementation of the project program. The 12 extra staff hired for the project also belonged to this group. The last of these left according to plan by the end of 2010, and now the project group mainly functions as a balancing group, overseeing and participating in the final reconciliation of the data in the supply and use system. Each responsible staff member reports to the special project group on all aspects of project performance, results, and meeting of deadlines. The DNA staff participates actively in work sessions dealing with programming, monitoring and evaluating each of the projects related to their areas of expertise. For outside studies, professionals from other departments may also participate in the follow-up and evaluation of the results of each project.

18.	To keep the various decision levels within the BCCH updated on the project implementation, a "pyramid reporting" system has been established. The reports have a common structure but are worked out with decreasing frequency and length of text, as it moves up to the highest levels of the BCCH's hierarchy. The reports contain a statement of progress to date and an outlook for the next report. At a minimum, they indicate jobs and activities, results, progress estimates, and risk factors. Reporting to the Board of the BCCH, takes place at half-yearly intervals and to the chief executive office on a quarterly basis. There is a meeting at the division level every four weeks and weekly meetings at the area and department levels. This management system has proven to be efficient in solving problems as they arise and keeping the project on track.

Resources

19.	During the project period 2008–2011, additional resources have been allocated for the purpose of this project, in total about US$ 2.2 million, which in real terms is approximately 70 percent of the budget of the 2003 BC. Over the project period, the DNA has been able to increase its permanent staff of 37 with extra staff corresponding to 296 man-months. The total number of extra staff has been 12 persons in the peak activity period from first quarter of 2009 to the second quarter of 2010. Based on the experiences from the 2003 BC, the individual projects have been directed by members of the permanent staff, assisted by the extra staff with a view to maintaining the expertise in the department. Over the project period, some of the extra staff moved into permanent jobs that became vacant.

20.	The distribution of the permanent and the extra staff during the 2008 BC are shown below (average for the period).

Organización de las unidades de cuentas nacionales para los años de referencia

Área	Unidades de la organización	Miembros permanentes	Miembros para el proyecto de 2008
Por actividad económica	1 Agricultura, ganadería, silvicultura	1	1
	2 Minería y Electricidad Gas y Agua	1	
	3 Pesca	1	1
	4 Industria Manufacturera	1	1
	5 Construcción	2	
	6 Comercio	1	1
	7 Transporte	1	
	8 Comunicaciones	1	1
	9 Educación y Salud	1	
	10 Servicios empresariales y personales	1	2
Áreas que tocan a varios sectores	11 Administración pública	1	1
	12 Cuentas de corto plazo	6	
	13 Producción (compatibilización)	4	
	14 Sectores Institucionales	11	
	15 Resto del mundo	1	
	16 Empleo y salarios		1
	17 Consumo de Hogares / IPSFLSH	1	
	18 Formación y stock de capital		1
	19 Inventarios	1	
	20 PIB regional	1	
	21 Directorio y clasificadores		1
	22 Plataforma de datos		1
	Total	37	12

(*) En estos casos los miembros provenían de otras unidades y fueron asignados por periodos cortos

III. IMPLEMENTATION OF THE *1993 SNA* IN CHILE

21. In principle, the *1993 SNA* was implemented in the Chilean national accounts with the 1996 benchmark project that was completed in 2002 (although several important changes required by the *1993 SNA* were implemented already in the 1986 benchmark exercise). However, mainly based on shortcomings in the data sources, not all the required changes could be implemented in that round. This was in particular the case for treatment of natural growth of crops and trees as output and in-house produced software and mineral exploration as fixed capital formation. In the BC 2003, natural growth of trees as output was implemented, but the other items remain as deviations from the *1993 SNA*. This is also the case for illegal activities and a few minor items, such as estimates for original literary and artistic work. On the other hand, the BC 2003 included an integration of the economic activity and institutional sector accounts and improvements of the estimates for consumption of fixed capital.

22. In connection with the BC 2003, it was decided not to implement the distribution of FISIM by users, as earlier experiments led to problematic results. Similarly, it was decided not to introduce the chaining method for constant price estimates but to use 2003 as a fixed

base year. None of these decisions represented deviations from the *1993 SNA*, as these two features recommended by the *1993 SNA* were not mandatory but preferred.

The ROSC from 2007 mentions the following deviations from the *1993 SNA*:

- Own-account production of manufactured goods for own-final consumption is excluded. What is included is own-account production of agricultural goods for own-final consumption.

- Mining exploration is not included in investment.

- The production of entertainment, literary, or artistic originals is not included. This item is very insignificant.

- The production of computer software for own- use is not included. In addition, this is not a significant item.

- No estimates are made of illegal output sold to willing buyers and of shuttle trade/contraband.

- And concerning classifications that the classification of the functions of government (COFOG) is not used to classify government expenditure and the classification of individual consumption by purpose (COICOP) is not applied for classifying household final consumption expenditure.

- Thought not formal deviations, the ROSC report also mentions the non-distribution by user of FISIM, and the nonuse of the chaining method for constant price estimates.

23.   With the 2008 BC, the most significant of these deviations will have been eliminated. In fact, the COICOP and COFOG were introduced already during 2009 with the separate publication of two *Studies in Economic Statistics* from the BCCH. The exploration expenditures will be treated as fixed capital formation, as will new estimates for in-house produced software. It has been decided not explicitly to estimate or include illegal activities (though some may implicitly be covered by the approaches chosen for certain estimates). No attempts have been made to include own-account production of manufactured goods for own-final consumption and the production of literary and artistic originals due to their insignificance. As noted elsewhere, the distribution of FISIM to users and the chaining method for volume estimates will also be introduced with the 2008 BC.

An overview of the implementation of the *1993 SNA* in Chile is given in Appendix II.

IV. DATA AND BALANCING

Source data

24.   The NSI and BCCH are the primary producers of basic statistics in Chile. The NSI is responsible for official statistics and censuses in Chile. The organization and legal underpinning of the Chilean Statistical System is detailed in the 2007 ROSC report for Chile. The NSI's principal products are in the areas of manufacturing industries, trade, services, employment and prices, as well as irregular censuses (such as for population and agriculture) and surveys (such as the HBS). In some areas where the coverage is insufficient for the ANA purposes, mainly for service industries, the BCCH compiles supplementary statistics on a current basis. In addition, the BCCH compiles a range of short-term statistics, including foreign trade statistics and balance of payment statistics. The NSI is responsible for the business register, see Appendix I.

25.   There is close cooperation between the NSI and BCCH on a current basis for many types of statistics. In relation to the 2008 BC, the formalized cooperation takes place in the coordination committee (monthly meetings), members of which are the directors and technical managers of the NSI and the Statistics Division of the BCCH.

The source data available for the 2008 BC consist basically of the following four types:

   i.   Existing current statistics, based on surveys or administrative data, collected primarily by the NSI or the BCCH. Several of these statistics are further edited and reconciled for the purpose of the project.
   ii. Special surveys and studies, in total about 20, commissioned for the 2008 BC project. They cover a wide range of areas and are in general sample surveys that are clearly targeted to the needs of the project. Even though some of the samples are small in size, the total number of questionnaires has been about 25,000. The surveys involving the bulk of the questionnaires have been conducted by the NSI and the remaining by the BCCH or external consultants. In addition, a number of the existing annual surveys conducted by the BCCH have been extended with supplementary questions for the year 2008, in particular relating to intermediate consumption of goods and services.
   iii. Administrative records relating to tax information, government budget, and foreign trade.
   iv. Other sources, such as financial statements, statistical reports, research projects and yearbooks covering a wide range of activities.

26.   Around 20 special surveys and studies were commissioned for the 2008 BC project. They cover a wide range of areas, and are in general sample surveys that are clearly targeted to the needs of the project. The survey forms were redesigned also with a plan on using them throughout the new compilation cycle of the national accounts. Even though some of the samples are small, the total number of questionnaires was about 25,000 when the questionnaires circulated in connection with the special studies are also included. This is approximately the same number of enterprises surveyed in connection with the 2003 BC.

Even though these special surveys and studies target much the same areas in the two benchmark years, the distributions are different. Thus, there were almost 12,000 observations related to the trade margin project against only 5,000 in connection with the 2003 BC. On the other hand, the Agricultural Census 2007 and the Fishing and Aquaculture Census 2007 decreased the need to collect special information for agriculture for 2008, and the small business project for the 2003 BC was not repeated but replaced by the estimates made for producer households. The surveys involving the major part of the questionnaires were conducted by the NSI and the remaining by the DNA itself or external consultants. With the HBS 2007 and the Agricultural Census 2007, two of the major deficiencies in source data during the 2003 BC exercise have been overcome.

27.   Records from administrative registers are becoming an increasingly important data source for the national accounts. The most used are the income and value added tax (VAT) declarations reported to the IRS. The income declarations cover 2.4 million taxpayers and contain about 20 variables of relevance for national accounts compilation. This information is used to determine the universe for the sampled data in several economic activities. The VAT declarations cover 715,000 taxpayers and include 12 processed variables. The possibilities to utilize these register data is closely related to the existence of a reliable business register, as noted above. Some new types of register data were utilized in the 2008 BC. These are declaration of wages reported by natural and legal persons that carry out a business activity with payment of wages; declarations of professional fees, covering tax withholding on fees paid by firms for independent service providers and directors' remunerations; registers related to the stock of dwellings in the country and to the sales of real estate; and the sworn declaration on VAT sales and purchases with supplier and clients specified to be submitted by VAT payers and exporters whose annual sales exceed US$ 500,000 in total 12,000 taxpayers. External trade statistics which are collected by the National Customs Service and published by the BCCH can be seen as register based statistics.

28.   Detailed budget data are readily available from the Office of the Controller General and the Budget Office of the Ministry of Finance, covering both central and local government. The data are on accrual basis for current and capital income and expenditures, whereas taxes are on cash basis, but for national account purposes transformed into accrual basis. Government purchases of goods and services are available in a very detailed breakdown (since 2004 79 groups versus 45 groups for the 2003 BC, and the centralized government purchasing system (Dirección Chilecompra, utilized in the DNA since 2008) permits a further breakdown into 210 products. This is a resource intensive process as micro-data at invoice level have to be identified and added.

29.   Furthermore, about 2000 individual company financial statements were processed for validation purposes or to extract information that were not available from other sources. There exist no official statistics based on financial statements (corresponding to Structural Business Statistics in Europe), and only financial statements for companies whose stocks are traded on the stock exchange are publicly available (the website of the Chilean Securities and Insurance Supervisor). Financial statements for other companies can in principle only be obtained by direct contact to, and accept by, the individual companies.

30.   The results of the surveys commissioned to the NSI (the commissioning often being related to larger samples or more detail in already existing surveys) are published by the NSI as official statistics, though not always at the most detailed level. Even though tax related sources (primarily concerning income and VAT declarations) which are often used to determine the universe for the sampled data, are utilized on an ad hoc basis in the DNA to derive the specific results needed for the national accounts, this information is also accessible to the public as statistical tables on the IRS web site, showing income and other types of variables by economic activity, and thus having many of the characteristics of official statistics. Such transparency is important, as it will allow users of the national accounts to examine or assess the national accounts data against current statistics. Otherwise, the compilation practices would have been less transparent, even if metadata taken separately were seen as sufficient and included references to alternative control variables.

31.   In the DNA, the work related to the preparation of the data to be entered into the balancing system as initial estimates is organized as follows:

Activity based

32.   For each major area of activity (in total about 20) one or two staff members are responsible for compiling the data needed as input into the overall 2008 BC framework. The outcome from each activity project consists of the rows (products distributed by use) and columns (intermediate consumption by activity and products and value added by category) at the level of detail required by the balancing system. The outcome of activity projects have the form of a detailed description of sources and methods, including analysis and explanations to changes from the relationships found in the 2003 benchmark data. The results from the activity studies are seen as preliminary estimates that may be changed in the reconciliation process.

Cross-industry studies

33.   This part of the data preparation relates primarily to the final uses (household consumption, fixed capital formation, changes in inventories) and input data to be derived from general data sources such as foreign trade statistics, statistics on employment and salaries, and utilization of administrative data sources, such records for income tax and VAT from the IRS. In the practical work, there is some interaction between the sectoral and the inter-sectoral data compilation, also before data are entered into the overall balancing framework. Thus the construction of detailed import matrices by product (at an 8000 product level) and uses is partly obtained by cross-classifying imported products and importing enterprises by activity, and thus interacts with all the sector projects.

An overview and assessment of the data by economic activity and cross-cutting area is given in the Appendix III.

Balancing

34.   The reconciliation takes place in the supply use framework, primarily based on the *commodity flow method.* As all the preliminary estimates by economic activity include both an input structure by product and distributions by user of the individual output products (destination hypothesis), there will in most cases be two different values for each element in the use table, originating either from the economic activity studies for user and producer activities or from the cross-cutting projects, such as household consumption. The reconciliation is an iterative process, including manual as well as automatic procedures and a number of stages are defined, in which the various matrices become "final" at successive stages. The reconciliation is a matter of judgment for the staff involved in the balancing process. The activity specialist will normally be consulted if more important changes are considered in their area of responsibility. In the balancing, the reliability of the various types of information is taken into account. The primary value concept in the balancing is purchasers' values.

35.   Changes in inventories and exports are basically predetermined outside the balancing system. Also prior to the reconciliation, the use matrices for imports and the matrices for trade margins and taxes on products are initially derived in separate iterative processes. As the effective VAT rate is below the theoretical one, special procedures are utilized to adjust the theoretical revenue to the actual one.

36.   The in-house developed computerized data modeling and reconciliation system is based on the principle of interdependencies across all data entered into the system, and thus to avoid partial solutions. The system applied for the 2008 BC represents a new generation of the previously applied system with more emphasis on logical structures (database management) and computational procedures that are automatically documented and made reproducible. An SQL server placed at the DNA (but under the management of the IT Department to secure backups and technical support) represents the database core of the system, which includes not only the national accounts files but also source or supporting data such as administrative records, foreign trade data ,and other basic and intermediate data. An Excel-based user interface facilitates the multiuser capabilities of the system. Thus the improvements to the system relate to efficiency, capacity, and security, and are effectively oriented towards the future with larger databases and benchmark-like reconciliation also for the final ANA of the current years.

37.   The overall assessment of the applied compilation techniques is that it compares favorably to best international practices and that the new generation of the data modeling and reconciliation system is outstanding.

V.   AREAS WITH MAJOR IMPROVEMENTS OR OF SPECIAL INTEREST

Household consumption

38.   The lack of a HBS (the most recent being from 1996) was a major data deficiency in connection with the 2003 BC and in the estimation of household consumption expenditures.

With the new HBS 2007 (covering November 2006–October 2007), it is possible to make an independent (from the commodity based approach) estimate of household consumption for the 2008 BC, which is a major improvement.

39.   The 2007 HBS is based on a sample of approximately 10,000 households located in Santiago and regional capitals, including major suburban areas. The results, in April 2007 prices, with a product breakdown into 479 products, classified according to COICOP, were used for the national accounts estimate. In several processes the data were validated and edited, carried forward to the year 2008 by the consumer price index and the actual volume changes between the observation period and 2008 based on the QNA and ANA (only at the 73 product level), and expanded to country level, taking into account regional differences.

40.   The resulting estimate for household consumption expenditures for 2008 was Ch$ 49.1 billion compared to Ch$ 52.8 billion presently in the annual accounts for 2008. Checks against other sources for selected consumption groups as well as comparisons to proportions in the present data did not show any major flaws in the data, but in the overall reconciliation of the supply and use system these initial estimates may be changed somewhat.

Changes in inventories

41.   In connection with the 2003 BC, changes in all types of inventories were estimated in full matrix detail to fit into the supply use system. The changes in inventories were calculated in mid-year prices based on tax and survey information on opening and closing stocks. Various assumptions are used to obtain the full matrix detail and subdivision on imported and domestically produced products. Except for the fact that estimates of changes in inventories by product must always to a considerable extent be based on assumptions, the applied method was assessed as methodologically sound. It was, however, noted (in National Accounts of Chile: 2003 BC) that the output-industry inventory change matrix is only prepared for benchmark compilations, and that in the annual estimates information provided by annual industry surveys and income tax returns will be used.

42.   In this background, there seems to be some concern that holdings gains and losses may be included in the current estimations of changes in inventories. This concern is in particular expressed in the OECD's assessment of Chilean statistics (2009) in connection with the accession process, where it is taken to be a fact, but not in particular in the 2007 ROSC where it is even stated that the output and intermediate consumption concepts seems to be without holding gains.

43.   The calculations of changes in inventories for the 2008 BC is based on more complete source data, in particular concerning the product composition of the stocks, and the price adjustment of opening and closing stocks more differentiated according to turnover time, but otherwise the same methodology as for 2003 BC is applied, where the product method is used for some important products such as copper, salmon, and trees, whereas on the whole the estimates are based on statistics on opening and closing stocks. The holding gains, which can be derived residually for latter type of calculation, will play no role in the production part

of the system, as long as it is assumed that the output and intermediate consumption data are without holding gains—as the ROSC report does.

44. The overall assessment of the estimates of changes in inventories is that they are conducted according to recommended international practices, and—considering the difficulties encountered in most countries when estimating changes in inventories—based on relevant and sufficient data sources.

Trade margin matrix

45. The construction of the matrix of trade margins is a particularly difficult problem when setting up the system of SUT. Ideally, this task requires full information about the share of each use that has passed through the trade activity, and further for this share the specific trade margin rate applied. In practice, it is not possible to collect information at such a detailed level, and the compilation of the trade margin matrix must therefore, to a considerable extent, be based on assumptions, in particular when it comes to the individual cells.

46. For the benchmark year, there are two sources available for information about trade margins. Firstly, trade margins by activity of trade (wholesale and retail trade, further broken down by sub-branches), are obtained from the annual survey on trade (industry method), and secondly, trade margins and distribution channels by products obtained from special surveys covering 177 domestic goods and 128 imported goods (product method). To combine and reconcile these two types of primary information, a product by trade branch matrix is established.

47. As the survey on trade margins by its nature covers margins on goods that have actually been traded, the initial estimate of trade margins from the product side will be too high if the total supply of goods are assumed to be traded. On the other hand, some (for example informal) trading activity may be missing from the activity side.

48. The outcome of this balancing process is a total trade margin by product at the 240 product level (one of the vectors needed to convert the supply matrix totals from basic to purchasers' prices). The next step is the compilation of the matrices of trade margins, i.e., to distribute the total trade margins by products on the elements (the users) in the rows. Rather than just choosing a proportional distribution, which would implicitly assume identical trading conditions (shares not handled by trade and identical percentage trade margins on the traded share), the assignment of the trade margin on products to activities is made depending on the destination of the product (exports, household consumption and intermediate consumption) and in proportion to the gross output of the activity that potentially would commercialize it and the restrictions on the particular kind of margin derived for the 25 sub-activities of trade.

Owner-occupied dwellings

49.   The new estimate for owner occupied dwellings for the 2008 BC is based on the user value method, and replaces a method based on the value of the stocks of dwellings according to the IRS. Total output was estimated as 10 percent of two times the value registered by the IRS. This method was not in agreement with the *1993 SNA* recommendations, according to which the output of owner occupied dwellings should be derived either by the "rental equivalence approach," where the question is what a tenant would pay for the same accommodation or by the "user cost approach," where the output is valued by the total production costs incurred. This latter approach is recommended when the share of owner occupied dwellings is greater than 75 percent, which is the case in Chile.

50.   The user cost method implies the use of two different stock concepts: (i) the net value of the housing stock to calculate the consumption of fixed capital. This is available from the capital stock study; and (ii) the market value of the housing stock, including the underlying land, which is calculated by stratified combination of the physical stock in the building register with the statements of sales from the IRS. Following the European Union (EU) rule, 2.5 percent of this stock is taken as net operating surplus. Expenditures for repair works and insurance are based on the HBS 2007. In addition, FISIM appears as a considerable cost element in this activity.

51.   The result of the new calculation is a share of owner occupied dwelling value added in total value added slightly above 6 percent or practically the same as the result of the previous method in the 2003 BC. Some concern has been expressed that this share is too low (OECD), as it has decreased from 7.5 percent in 1996. For control, an alternative estimate based on information of leases, stratified by region and income quintile, gave a result was 0.2 percent lower than the result of the user cost method.

52.   The implementation of the user cost method represents a major improvement, and the method is applied according to recommended international practices.

FISIM

53.   In connection with the decision to distribute FISIM by user in the 2008 BC, total FISIM is also calculated by a new method, the so-called reference rate method, recommended in the SNA. The FISIM producers are identified, and their FISIM related assets and liabilities determined by type. The reference interest rate is taken as the overnight interbank rate on a monthly basis, and applied to the monthly transaction balances to obtain the SNA interest (pure interest). The difference between the SNA interest and the bank interest (the actual interest) determines FISIM levels for loans and deposits, respectively.

54.   The allocation by user is carried out in several stages. The FISIM on certain types of assets are allocated to households based on asset type, and FISIM on housing loans is directly allocated to dwelling services as intermediate consumption. The rest is allocated to intermediate uses in two steps. Commercial loans are broken down by 23 economic activities, and this information is used as a first distribution key. In the next step, FISIM

allocated to the 23 activities is further allocated to 145 activities with gross output as a distribution key. This procedure is consistent with the SNA and the European System of Accounts (ESA) recommendations. In this allocation process some activities, such as general government activities and large mining companies, were excluded because they do not receive loans from the domestic financial system. Exports of FISIM are only estimated for commercial banks in relation to their accounts with nonresidents and imports derived from residents' accounts with overseas banks. The distribution of FISIM resulted in an increase of GDP of 1.8 percent.

55.   The new estimate of FISIM and its distribution by user is consistent with recommended methods and international practices.

The nonobserved economy

56.   The 2003 BC includes some explicit estimates on small businesses, but not any explicit estimates on the nonobserved activities. Those were only considered implicitly in the reconciliation process of the SUT. In the project plan for the 2008 BC, it was indicated that the nonobserved economy (NOE) would be the subject of analysis and proposal of a compilation method based on the available information. Subsequently, two projects related to the NOE have been implemented:

57.   The project on producer households identifies by means of employment statistics own-account workers (OAW) and employers. Producers also included in tax records are formal producer households and the rest informal. A whole array of tax records (declaration of wages, declaration of professional fees, income declaration and VAT declaration) are utilized in this connection. Activities that are likely to be informal are identified, and the output estimated based on the per capita production of formal OAW and formal employers. Employees with a second job are identified by tax records. The total output from informal and second job activity was estimated to Ch\$ 4.8 billion, which may contribute about 2 percent of GDP. These estimates are incorporated into the activity calculations, in particular for such branches as personal services.

58.   Related to the OECD membership, experimental estimates of some parts of the NOE, based on Eurostat's tabular approach to exhaustiveness, were carried out during 2009. The project covers only selected categories of the tabular approach, such as underground activity (N1), producers not obliged to register (N3) and not registered and underreporting (N6). The total value added in the examined tabular groups was estimated to between 2.84 and 4.41 percent of GDP. Some of this may, however, be covered in the accounts via the project for producer households or be included implicitly included during the balancing of the SUT.

Appendix I. The Business Register

1.   A first precondition for exhaustive coverage of basic statistics is the existence of a high quality business register that is being updated on a continuous basis, both securing coverage of all economic units and their correct classification of economic activity. In the ROSC 2007, it was noted that the NSI needs to update the business register regularly by requesting data on annual sales and employment by enterprise from the IRS and conduct a simplified economic census (pre-census) every five years to prepare updated sampling frames. Even though improvements have taken place, confidentiality concerns are still major obstacles to an optimal utilization of the existing possibilities for current updating of the business register, and a somewhat complicated dual responsibility structure between the NSI and the BCCH has developed.

2.   The business register (the National Registry of firms) is maintained by the NSI. It contains for each legal entity, characterized by a "rol único tributario" (RUT) number, information such as geographic area, economic activity and size groups according to sales, in total 12 groups. The IRS maintains a register over all taxpayers, also by RUT number and by including the information that has been reported to the IRS in connection with the tax administration (auto classification of activity, sales, declared income, wages and employees). However, due to privacy protection rules the NSI does not have access to the IRS files with their identifiable numbers (with the RUT number). Instead, the NSI receives this information with the RUT number replaced by an identity number so that only the IRS will know the true identity of the units. This is the Directory of Fictitious Companies. It is thus not possible for the NSI to use any of the information contained in the fictitious register for updating its real register, and the allocation to size groups by sales in the real register is carried out by the NSI sending the RUT numbers of the real units to the IRS which will return information about the relevant size groups.

3.   In spite of the anonymous units, it is possible to use the fictitious register for sampling purposes, which is often desirable, because the fictitious register is more complete and updated than the real one. A list with the fictitious numbers of the sample is sent to the IRS, which in turn will send back a list with the real RUT numbers, but without any individual connection to the fictitious enterprise number, so that the specific identity of the units in the fictitious register will still be concealed. Following the sampling, the grossing-up can take place by means of the fictitious register. New information that in this way becomes available for the sampled units can be incorporated into the NSI real register without a breach of confidentiality.

4.   Once a year, the IRS will send the total real and fictitious registers to the NSI, and the NSI has the possibility to update its own real register. But during the year there will be no current updating of the IRS registers, and they will thus be less and less suited for sampling and grossing-up purposes during the year. A special call center in the NSI is in charge of maintaining the correct economic classifications of the units in the register.

5.   The BCCH receives both the real and fictitious register from NSI. The BCCH extends the coverage of the fictitious register (via the IRS) with units that are covered by Form F22 (income), but not Form F29 (VAT), as in principle only the VAT units are included in the

NSI fictitious register. In the DNA, the industry analysts were also asked to check the companies in their branches for missing units and possible erroneous classifications. This could of course only be done on basis of the real register, but in the process of completing the registers the real and the fictitious register in the BCCH would eventually have the same number of units in each economic activity, although the key between the real and fictitious numbers would still be known to only the IRS.

6.   The focus in the DNA's work with the business register was to correctly identify and classify companies with an annual turnover higher than US$ 1 million. There are approximately 25,000 such companies with more than 80 percent of total turnover. As these major companies will usually be included in the NSI real register, the sampling on the basis of the fictitious register will often only be applicable for smaller enterprises.

7.   This work on the registers in the BCCH is now done on a current basis, and not just for the BC 2008, and there is feedback from the BCCH registers (both real and fictitious) to the NSI once a year. A working group with relevant staff members from each institution deals with problems of differences between the registers in the two institutions. This group will also deal with the upcoming transition from the *International Standard Classification of all Economic Activities* (*ISIC*), *Rev.3 to ISIC, Rev.4.* The classification by activity has traditionally been done as self-classification by the enterprises but is for the real register now decided by a new function in the INE, which may not accept all changes made to the activity classification in the BCCH. The units in the register are legal units only.

Appendix II. Summary of the *Systems of National Accounts, 1993* Implementation in Chile

	1993 SNA	1986 BC[1]	1996 BC	2003 BC	2008 BC
	(differences vis-à-vis the *System of National Accounts, 1968*)				
	GENERAL ASPECTS				
1.	Input-output matrices				
	Production and absorption at basic, producer and user prices	x	x	x	x
	Treatment net of VAT	x	x	x	x
	Classifications (CIIU Rev.3 and CCP)	x	x	x	x
	Symmetric and inverse table	x	x	x	x
2.	Annual production accounts and supply and use tables	x	x	x	x
3.	Measure at constant chain base prices			Not in first round	x
4.	Institutional accounts				
4.1	Sectors				
	Non-financial private sector		x	x	x
	Non-financial institutions	x	x	x	x
	Households		x	x	x
	Private nonprofit institutions				x
	Government	x	x	x	x
	Financial institutions	x	x	x	x
4.2	Accounts				
	Production	x	x	x	x
	Total income and expenses	x	x	x	x
	Income and expenses, generation, allocation, redistribution, use		x	x	x
	Capital accumulation	x	x	x	x
	Financial accumulation	x	x	x	x
	Balance and reconciliation	x	x	x Fixed capital stock measure to be implemented	x
5.	Investment matrix		x	x	x
6.	Employment matrix		Implemented but not published	x	x
	SPECIFIC ASPECTS				
7.	Classification of household consumption by purpose (COICOP)			In preparation (x)	x
8.	Determination of mixed income		x	x	x
9.	Measure of investment in software			Partly (x)	x
10.	Fixed capital consumption. Economic base (not depreciation). Includes public works infrastructure.		x	x	x
11.	Treatment of investment in defense with civil uses as capital formation		x	x	x
12.	Measure of growth in forestry stock			x	x
13.	Distribution of financial intermediation services measured indirectly (FISIM)				x
14.	Mining exploration as fixed capital formation			x	x
15.	Classification of government functions (COFOG)			In preparation (x)	x

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[1] Early draft of the *1993 SNA* was used

Appendix III. Summary Table for Activities and Cross Cutting Studies

Subject	Summary description	Comments	Assessment
Estimates by economic activity:			
Agriculture, Fruit farming, Livestock and Forestry	The Agricultural-Livestock-Forestry Census covering the year 2007 was updated to 2008. Gave regional information on smaller vegetables and fruit, and stocks of livestock. Also new: NSI data on yield, area and output of main vegetables. For each product output is obtained as quantity multiplied by price. The IC is found using price-updated structures from 2003 special surveys for each product.	In principle, the natural growth method is used, but has for lack of data not been implemented for crops and fruit which are recorded as output at the time of the harvest. Calculations of quantity x price takes place in strata considering geographic area and time of year. (Both output and IC).	Major improvement
Fishing	The first census for fishing and aquaculture was held for 2007. Detailed statistics on output and prices from Statistical Yearbook on Fishing and Aquaculture (National Fisheries Service). Cost and cost structures from census, current statistics and validation based on company financial reports and specialized agencies.	Product method used to measure output for both primary and industry branches, except for aquaculture where modelled volume growth of the mass valued at the average price of sales to industry is taken as output.	In 200, processed salmon was included as output from fishery. In 2008, fish processing is classified in industry, which implies a big intermediate delivery from fishing to industry.
Mining	Survey of the BCCH, Foreign trade data, yearbooks and other give almost complete statistical coverage. Some small scale mining covered by case studies.	Metallurgic processes that according to *ISIC* are manufacturing activities are included with the mining activity because of their integrated nature	
Mineral prospecting	No current statistics on prospecting. Information collected from a variety of sources, including queries to mining companies. Main target is copper.	Output is measured as sum of costs (Specialized services have been outsourced and appear is intermediate consumption.	Will be placed in the mining industry as secondary production
Manufacturing industry	Number of branches increased from 39 to 53, and head offices included with business services (new?). The annual national industry survey covers establishments with 10 or more employees. The IRS form 22, 1887 determines universe, except for branches determined by product method. Sample of FS and other information for comprehensive validation of sources.	The annual national industry survey includes forms for output, stocks and intermediate consumption by products.	Manufacturing of wine. Change from *ISIC Rev. 3* to *ISIC Rev. 4* concerning production of wine from own grapes. For wine, the Chilean accounts are already following the *ISIC Rev. 4* principle. .
Electricity, gas, and	Central data sources are the BCCH	Methodological change for	

| water | surveys for each area supplemented with data from financial statements and other.

In order to identify correctly the energy flows in the economy, an energy product balance was developed based on the National Energy Balance, the BCCH surveys and other sources.

All source data cross-validated and compared with external sources. | gas to gross measurement from the distribution activity, whereas previously only the sales margin was counted as output. | |
|---|---|---|---|
| Construction | Characterized by the non-availability of direct source data. Further breakdown of industries and products compared to the 2003 BC.

New study on building and civil engineering work related to input structures. Building permits combined with expenditure-time curves and M2 prices (costs) main method. Follow-up study on building permits gives effective start of work (previously 1 month assumed for all permits).
For civil engineering, works most output obtained directly, and new production functions at typology (27) level used to estimate immediate consumption (IC) and gross value added (GVA). | Housing repairs based on the HBS 2007, and non-housing building repair on estimated stocks and repair work rate. IC and VA based on production functions.
Repair on civil engineering work based on direct information.

The activity is defined as a pure activity producing 100 percent of these specific products | The broad use of production functions with constant operating surplus share may be a problem when used over time. |
| Trade | More industries and products than in 2003. Sources are the ECOM survey (over 2400 fixed purchasing power accounting units (UFs)), and Form 22 to cover universe. (And trade will also get some contribution from the producer households study). Specialized studies on trade margins and distribution channels.
(177 domestic products and 128 imported products) | The "Trade margin conciliation matrix" is the balancing instrument for the two estimates from the industry side and the trade margin side.
Dimension is 240 x 145. | |
| Hotels and restaurants | This activity is based on the NSI's annual survey on hotels and restaurants (ESAAT). It is a sample survey covering around 500 enterprises (and around 50 percent of output). The results are grossed up to the universe determined by the income registered in IRS Form 22. Results | Purchases in canteens are mainly household consumption. | |

	are validated with FS and specialized information.		
Transport	Although many different sources are used, these activities are solidly based on the NSI's annual surveys on freight and passenger transport, including a specialized survey on passenger transport (taxis, urban and rural transport etc), *combined* with full information for the centralized transport activities (airlines, subway oceanic transport, ports, airports etc.	For the subgroups based on samples are the universe represented by the information in IRS Form 22. Intermediate consumption is based on survey information and company reports and special queries. Taxis and specialized land passenger transport based on the stock of vehicles.	Improvement: Now current statistics on freight transport by road.
Communication	Measured on a company basis. Well covered by various types of information. Further breakdown of industries and products compared to 2003 anticipating the changes to *ISIC Rev.4*	Payments for mobile phone licenses no longer classified as a tax on production, but as purchase of an asset or rent (not yet decided) and thus not affecting the gross operating surplus.	Methodology outlined for trade margins on equipment sold by telephone companies at nominal prices.
Business services	Business service is for all sub-branches based on the same method: The sample covered by the NSI annual survey is grossed up to the universe by using the IRS Form 22 The results are validated by analyzing FS and specialized information	The sample covers 47 percent of the universe. Head offices now included in business services are not separately identified for dissemination purposes.	
Dwellings	New method based on the user value principle. Value of housing stock based on building register and current statistics on sales of real estate, and depreciation on capital stock study. Repair based on the HBS.	Net surplus is exogenous at 2.5 percent of value of net stock, including land (EU methodology).	Major improvement
Education (public and private)	Government nonmarket part fully covered by budget data, including detailed breakdown of IC (79 categories which are further broken down into 210 products for 2008 BC compared to only 45 in 2003) and sales to households. Consumption of fixed capital is derived from the general perpetual inventory method (PIM) system.	The major part of private education (which is regulated and supervised by government) is well covered by information, including for IC breakdown.	The so-called "subsidized" elementary and secondary schools are nonmarket production, and do therefore not receive subsidies.
Health (public and private)	Government nonmarket part fully covered by budget data, including detailed breakdown of IC (79 categories compared to only 45 in 2003) and sales to households. Consumption of fixed capital is derived from the general PIM system.	Practicing doctors and dentists own account workers (OAW) are fully covered by source data, and other private health activities to varying extent, but in general covered by surveys and regulatory information	

		including for IC breakdown.	
Personal services (includes amusement and recreational services and other personal services)	This activity is based on the NSI's ESERV. It is a sample survey covering around 600 enterprises. The results are grossed up to the universe determined by the income registered in IRS Form 22. Results are validated with FS and specialized information.		
Private households with employed persons	Based on employment data from the labour force survey (LFS), and annual mean compensation of unskilled workers.		Improved, now with current data from LFS.
Public administration and defence.	This activity covers central government, local government, and social security institutions. By nature, this activity is fully covered by budget data and the increased breakdown of purchases from 45 to 79 groups is further broken down into 210 products for 2008 BC.	Consumption of fixed capital is derived from the general PIM system.	Improved breakdown of IC, based on the new database (from 2008) of purchase orders issued by all state bodies (1.6 million orders to over 90,000 suppliers)
Cross-cutting items			
Producer households: OAW and employers. The UF is a unit that in principle keeps the purchasing power.	Households as producers of goods and services in the SNA sense. Based on and tax records (formal) and employment statistics (informal). And to exclude quasi-corporations: For formal OAW: (Turnover less than 2400 UFs—for trade 4800 UFs). For formal employers: sales less than 4800 UFs	Number of informal OAW and informal employers are the difference between total OAW and employers in the LFS and the identified formal. Output is estimated as equal to per capita output in formal OAW and employers. IC based on the micro-enterprise survey by Ministry of Economy	
Foreign trade	Foreign trade of goods: 94 percent based on custom declarations, custom free zone special, and deliveries to ships on settlement statistics. For services: Tourist spending surveys (both visitors to Chile and Chileans abroad), and financial statements and settlement statistics for transport (what about other services—also settlement statistics)?	The import matrix: Based on an internal table with assumptions about single or dual uses the final uses are determined from the most detailed eight-digit HS. The rest being for IC. Of this, 65 percent are imported directly by the user, but 35 percent by trade. For the latter, the Form 3323	The resulting import matrix for IC is of dimension 240 x 145. CIF valuation for goods and treatment of import of services consistent with this valuation.

		allows industry destination of sales made by wholesalers.	
Investment matrices (product by industry) compiled *annually* since 2003— separately for domestic products and imports	Source data have improved by the use of VAT records for big enterprises containing information about buyers. (F3323) Now 145 products and 145 industries Allocation based on firm identification no (data?) and nature of good.	Own-account production of software. How is it identified?	
Changes in inventories. The product method for specific products, copper, salmons etc, and the use hypothesis based on opening and closing stocks by economic activity	For the "use hypothesis" same sources and methodology as in 2003, but in addition balance sheets and direct information from some companies now used for estimate of product composition. Available information on product composition of outputs and inputs (including trade margin matrix) are used for the product composition.	Inventory turnover rates are determined as basis for price adjustment. No adjustment for holding gains in the production part of the system, as reported data are already adjusted.	Question of adjustment of pricing procedure to support chaining.
Household consumption.	Based on the HBS (Nov. 2006– Oct. 2007) separate estimation of household consumption independent of supply and destination hypothesis.	Basic HBS results checked and grossed up to whole population (for Santiago and Rest of Chile separately), and moved forward to 2008 by price inflation and volume from QNA and ANA	Major improvement No major problems detected when results are checked against other sources The problem of domestic vs. national concepts are solved in the reconciliation process COICOP is now applied
Value added tax (VAT)	The VAT system is modelled, taking into account the various types of exemptions, including the rates to be used in the cases of partial exemption.	Reductions for the difference between theoretical VAT and actual VAT will be made, taking into account the possibilities in the various activities to evade the VAT. (List of activities and products)	The question of loss of VAT revenue in the case of bankruptcies was discussed.
FISIM	New calculation using the reference rate method. The FISIM producers and related assets determined. The observed overnight inter-bank rate is used as (domestic) reference rate.	Allocation: *Households* (excl. dwellings) based on type of assets, and for commercial banks current account corresponding to persons. Housing loans	Destination of Nonmarket output from the central bank—government or financial institution. Difference between

	Calculations carried out on monthly data.	allocated to dwellings. The rest based on commercial loan balances for 23 activities, and (gross) output for further allocation to 145 activities. Some activities (government, mining companies etc. excluded)	*2008 SNA* and revised ESA.
Business register	.		See Appendix I