National Accounts
2005 Base
Methodological changes
Most relevant results

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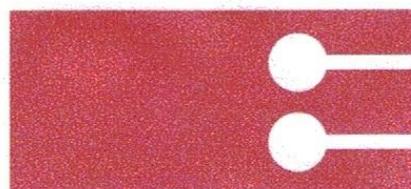
DANE
Para tomar decisiones

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ACRONYMS

ANDI	Colombia National Industrial Association
BANCOLDEX	Foreign Trade Bank of Colombia
BLS	Bureau of Labor Statistics
BoP	Balance of Payments
CAR	Autonomous Regional Corporation of la Sabana de Bogota, Valle de Ubaté and Chiquinquirá
CEED	Building Census
COICOP	Classification of Individual Consumption by Purpose
COLCIENCIAS	Administrative Unit of Science, Technology and Innovation
CPC	Central Product Classification
CPI	Consumer Price index
CVAN	Survey of new motor vehicles sales
DANE	National Administrative Department of Statistics
DIAN	National Tax and Customs Directorate
DNP	National Planning Department
DSCN	Synthesis and National Accounts Division
EAC	Trade Annual Survey
EAM	Manufacturing Annual Survey
EAS	Service Enterprises Annual Survey
ECH	Continuous Household Survey
ECOPETROL	Colombian Petroleum Company
ECV	Living Conditions Survey
ENIG	NationalHousehold Income and Expenditure Survey
EPS	Private Companies in charge of the Administration of Social Security in Health
ETESA	Territorial Corporation for Health
EUROSTAT	Statistical Office of the European Communities
FASECOLDA	Colombian Federation of Insurance Companies
FISIM	Financial Intermediation Services Indirectly Measured
FOSYGA	Solidarity and Guarantee Fund of the Social Security System in Health Care
GAHM	Department Stores and Hypermarkets Survey
GDP	Gross Domestic Product
GEIH	Integrated Household Survey
GFCE	Government Final Consumption Expenditure
GFCF	Gross Fixed Capital Formation
GMF	Tax on Financial Movements
HFCE	Household Final Consumption Expenditure
HFCE	Household Final Consumption Expenditure
IC	Intermediate Consumption
ICCP	Heavy Construction Cost Index
ICCV	Dwelling Construction Cost Index
IIOC	Investment in Civil Works Indicator
IIP	International Investment Position
IMF	International Monetary Fund

INCO	National Concessions Institute
INCODER	Colombian Institute of Rural Development
INCORA	Colombian Institute for Agricultural Reform
INGEOMINAS	Colombian Institute of Geology and Mining
INVIAS	National Roads Institute
IPS	Health Care Providers
ISA	Interconexión Eléctrica S.A.
ISIC A.C.	Colombian adaptation of the International Standard Industrial Classification of economic activities (ISIC)
LIFO	Last in, first out
LLU	Large Livestock Units
MADR	Ministry of Agriculture and Rural Development
MBTU	Thousand British Thermic Unit
MMCM	Monthly Survey of Retail Stores
MMM	Monthly Manufacturing Survey
MPR	Midpoint Rate
MTS	Quarterly Services Survey
NFCG	National Federation of Coffee Growers
Npc	Not previously classified
NPISH	Non-profit Institutions Serving Households
OECD	Organization for Economic Co-operation and Development
PPI	Producers Price Index
PUC	Accounting Standards Framework
SDDS	Special Data Dissemination Standards
SFC	Superintendency of Finance
SGP	General Participation System
SISOC	Superintendency of Companies
SISOL	Superintendency of Solidarity Economy
SIVAL	Superintendency of Securities
SMMLV	Legal Minimum Monthly Wage
SNA	System of National Accounts
SOAT	Traffic Accidents Compulsory Insurance
SSP	Superintendency of Public Utilities
SSPD	Superintendency of Domiciliary Public Utilities
SUI	Information System for the Public Utility Sector
SUIP	Unique Information System on Government Employment
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	World Tourism Organization
UPC	per capita payment unit
UPME	Unit of Mining-Energy Planning
VA	Value Added
VAT	Value Added Tax
WB	World Bank

1. GENERAL ASPECTS

1.1 PRESENTATION

To change the base year (or year of reference) in statistical research consists of updating the reference for the study of an economic phenomenon under continuous observation, with respect to its institutional environment and its markets, thus renewing the economic model of reference for subsequent follow-ups. The annual national accounts are a particular form of continuous statistical research. The methodology followed to establish the accounts for a base year differs from the one that is followed for current years: the former establishes the levels of the macroeconomic variables, whereas the latter measures its growth or change over time.

International agencies recommend changing the base of the national accounts on a periodic basis with a frequency of five to ten years, depending on the observed economic dynamics, the need to harmonize the contents of the accounts with respect to the corresponding international recommendations and the ever-growing demand and availability of economic statistics. The task of constructing a new base consists not only in establishing again the levels of the macroeconomic variables for the year whose results will be used as reference for the evaluations of other years, but also in including new sources of information, new procedures and new conceptual and methodological advances.

From a conceptual point of view, it must be mentioned that there is an increased access to both the international recommendations (that have been updated in 2008 with the System of National Accounts, SNA 2008) and to the experiences of other countries, thus creating favorable conditions for a methodological and conceptual update. In particular, within these new features, the international recommendation for the calculation of the accounts at constant prices should be mentioned. In this calculation the effect of the changes in prices is isolated, using chained indices with annual links for prices and volumes.

As a result of this new formula, the estimations of the macroeconomic variables at constant prices will be better adjusted individually, even though on the whole the additivity property is lost, meaning that the value at constant prices of a sum is not the sum of the values at constant prices of its components. Consequently, in this presentation, the results at constant prices (or volume) will be expressed in terms of growth rates, thus avoiding the presentation of statistical discrepancies, which are not errors but result from the mathematical formula used to separate the price and volume effects of the macroeconomic aggregates.

Finally, for the 2005 base, it has been decided to present the national accounts in thousand million pesos instead of million pesos as it was previously done, in order to better reflect the level of precision of the estimations[1].

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[1] 1 USD is worth approximately 2,000 Colombian pesos.

The purpose of this publication is to present to the users the main methodological changes incorporated in the 2005 base for the annual accounts, as follows: the calculation method of the accounts at constant prices, the revision of the conventional treatment of the Financial Intermediation Services Indirectly Measured (FISIM), the treatment of the Taxes on Financial Movements (GMF), the methodology used to calculate the changes in inventories, the household final consumption expenditure, the employment matrix, the production of rentals of dwellings, and the government consumption of fixed capital, among others. The publication also aims to present the main results of the accounts for 2005 and their comparison with those obtained in the 2000 base.

1.2 JUSTIFICATION

Over time, the framework of reference for economic measurement is affected in its structure by diverse phenomena, such as the unequal economic dynamics among sectors, the institutional changes that modify the shares of the different agents in the economy as a whole, the changes in the relative intersectoral prices, the new tax regulations, etc. In this sense, and considering that the economic structure of reference of the 2000 base corresponded to the final year of an economic crisis, when some characteristic relationships within the economy could have been affected, DANE decided to update the national accounts, once a process of stabilization of the economy was clearly taking place, a situation that happened throughout the last years, and particularly after 2003, when the historical levels of the main macroeconomic aggregates were reached again. Finally, the revision or change of the base year to 2005 took advantage of the statistical results of the 2005 population and economic censuses.

More specifically, the change of the statistical base of the 2005 national accounts was originated in three types of justifications: economic, institutional and statistical.

- **Economic:** As mentioned above, the 2000 base of the national accounts was implemented in a year of economic crisis; therefore, the structures of costs corresponding to the productive activities defined in the supply and use matrix, were affected by the limitations observed in the internal market. In turn, this would explain as well, in certain cases, the high input-output relationships that were found and the consequent reduction of the value added by activities.

  The technical-economic relationships established for the year selected as base year serve as further reference for the calculations of the annual, quarterly and regional accounts, for the years that precede or follow the base; this explains why the structure that is taken as reference must have, as much as possible, the highest degree of economic and accounting normality. Using these criteria, 2005 was considered to be the most recommendable year to be taken as reference.

- **Institutional:** Beyond satisfying the basic requirements of relative normality of the economic structures and the reference prices, the change of the base to year 2005 is also justified by the structural changes that have occurred in Colombia since 2000 such as: the privatization of enterprises that causes the modification of aggregates of both the public and the private sectors; the concessions granted to the private sector for the economic operation of public works that require special treatment for some transactions, investments in particular, made in the initial stages of their operation; and

the modification of the tax rates that has an impact on the level of the purchaser's prices of goods and services.

- **Statistical:** The greater availability of economic statistics for a given period is one of the main reasons for changing the base of the national accounts to year 2005, and especially because the results of the censuses (particularly those of population and housing) and of other statistical research carried out by DANE in the recent period were available. Such results enable a better approach to the levels of transactions among economic agents. In addition to the above, the greater effectiveness in the control of income for corporations and individuals, by means of the implementation of modern administrative instruments (the case of the National Directorate of Taxes and Customs [DIAN], the Superintendencies and the General Accounting Office (CGN), among others), enabled a better knowledge of activities that had been ignored by current statistics until then.

1.3 BACKGROUND

The compilation of national accounts already has an extensive history in Colombia. The Central Bank[2] compiled the 1958 and 1970 bases and DANE the 1975, 1994, 2000 bases and now the new 2005 base.

The compilation of national accounts in the Central Bank began in 1947, with a project aiming at measuring the national income and the international balance of payments. This initiative concluded with the publication of a series of tables for income and national product for 1945-1948.

In 1960, the Central Bank published the accounts for 1950-1959, adopting the methodology and the definitions proposed by the United Nations in document ST/STAT/SER.F/2 REV.1. The estimations at constant prices used 1958 as a base.

Subsequently the Bank published the 1950-1967 series, under the methodological framework of the System of National Accounts (SNA) 1953 or revision 2 of the United Nations. This series included accounts for production and consumption, accumulation and current transactions with the rest of the world. Its greatest concern was the measurement of Gross Domestic Product (GDP) and National Income.

With the publication of *National Accounts 1970 -1975,[3]* the Central Bank introduced modifications to its former work and explained, in the light of the results, the behavior of the national economy. The most important issue was the update of the base of constant prices from 1958 to 1970. The Central Bank continued publishing officially the national accounts according to this methodology until year 1982.

Among the institutional reforms of the second half of the sixties, DANE was assigned the responsibility of the elaboration of the national accounts of Colombia (real accounts), and the Central Bank that of their financial counterpart. As of year 1983, DANE was officially in charge of the national accounts of Colombia. From that time to the present date, DANE has compiled four bases: the 1975, the 1994, the 2000 and, most recently, the 2005 base.

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[2] Banco de la República, hereinafter referred to as Central Bank
[3] Camacho, M. José A. (May 1978). *Nueva serie de las cuentas nacionales de Colombia*. In: *Revista Banco de la República*, volume 51, number 607.

The 1958 and 1970 series of accounts of the Central Bank, referred to the Systems of National Accounts SNA Rev.1 and Rev.2 of the United Nations, and they were limited to present global GDP and its breakdown in fourteen activities, as well as the consolidated accounts of the nation. DANE's 1975 base used the United Nations' SNA 1968 or Rev. 3 as reference, whereas both the 1994 and 2000 bases used SNA 1993. In the 2005 base, the methodological aspects of SNA 1993, adopted in the 2000 base are maintained, and some of the recommendations of SNA 2008 are incorporated.

Once the elaboration of the national accounts started in DANE, complete accounts were produced, including commodity flow balances, supply and use tables, and accounts of institutional sectors including financial accounts (compiled by the Central Bank). The study of the productive activities was initially extended from 14 to 33 activities, and now has been increased up to 60, and both the production and the related costs are calculated for each activity. In addition, the supply and use of products was analyzed in detail (first in 250 products and now in 361). For each of them, the accounts present supply (production and imports) and demand (intermediate consumption, final consumption, gross capital formation and exports). The accounts reconcile supply and demand through the production and intermediate consumption matrices. On the other hand, independent accounts were elaborated for the institutional sectors: non-financial corporations, financial corporations, general government and households.

In the 1994 base, the accounts of the institutional sectors were consolidated, the production was valued at basic prices, the concept of gross fixed capital formation was extended and the activity of the illegal sector was included in the accounts.[4] In gross capital formation, the expenses for mining exploration were included, as well as the production of computer software, entertainment, literary and artistic originals.

The 2000 base maintained the conceptual aspects of SNA 1993, that had already been adopted in the 1994 base; additionally, it included methodological changes regarding the measurement of the production of the Central Bank, the allocation to users of Financial Intermediation Services Indirectly Measured (FISIM) and changes were introduced on how to account for the illegal economy and on recording transactions related to health and social insurance, both domains that had undergone important structural changes as a result of the promulgation of Law 100 (1993).[5]

1.4 OBJECTIVES OF THE NEW 2005 BASE

- **General objectives**

  – To update the national accounts at current and constant prices;

  – To include new sources of information;

  – To analyze the variables of the accounts in chronological series;

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[4] For more information on SNA 1993 recommendations introduced in the 1994 base, refer to: DANE. *Metodología de las Cuentas Nacionales de Colombia,- Base 1994. Operaciones de Bienes y Servicios*. Chapter 1.
[5] For more information on changes introduced in the 2000 base, refer to: DANE (2009) *Scope of the 2000 base*, in *Metodología de las Cuentas Nacionales de Colombia. Base 2000, Volume 1* page 24 and *Cambios metodológicos base 2000,* on www.dane.gov.co/files/inestigaciones/pib/anuales/cambios-metodologicos-base-2000.pdf.

–   To include some of the recommendations of SNA 2008.

- **Specific objectives**

    –   To use new sources of information, including, the 2005 General Population and Housing Census, and the 2006-2007 National Income and Expenditure Survey[6];

    –   To improve the method of calculation of some of the aggregates such as household final consumption expenditure, changes in inventories and FISIM;

    –   To change the method of elaboration of the accounts in current years, giving preference to the work with variables within chronological series and also to review the data of the base year within the same perspective;

    –   To elaborate annual employment matrices by activities, coherent with the production and value added data;

    –   To incorporate some of the recommendations of SNA 2008 (military equipment, outsourcing, social contributions, general treatment of pensions, payment of pensions, and recognition of pension obligations);

    –   To harmonize the production and generation of income accounts by activity and by institutional sector;

    –   To establish a method of calculation of the accounts at constant prices that should enable linking historical series by updating, year to year, the implicit weights of the volume and price indices, in order to reduce the traumatism caused by the change of base years on the back-cast of the series;

    –   To back-cast the 2005 base series, working initially on the accounts for the 1990-2008 period and thus providing the users with large coherent time-series;

    –   To improve the harmonization of the annual and the quarterly accounts in terms of the treatment of the basic sources of information;

    –   At the operational level, to systematize the process of consolidation and general synthesis of the accounts.

1.5 REFERENCE FRAMEWORK

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[6] It must be pointed out that in the past this source was not regularly used to analyze household final consumption expenditure.

- **International recommendations.** The national accounts 2005 base of Colombia follow the conceptual and methodological recommendations made by the international organizations in SNA 1993 and SNA 2008.
- **Legal and institutional framework**. The mission to compile the national accounts (real accounts) was assigned to DANE at the time of the 1969 reorganization of the general government. Simultaneously, the responsibility of the financial accounts was assigned to the Central Bank. In 1983, DANE officially undertook this responsibility and published the results for 1970-1982 following its own methodology. Since then, DANE regularly publishes the national accounts (real accounts) and the Central Bank the financial accounts.

  Decree 262 of 2004, by means of which DANE's structure is modified, included the synthesis of the national accounts within its functions, meaning:

- To elaborate the annual, quarterly, national, regional and satellite accounts, in order to evaluate the national and departmental economic growth globally and by sector;

- To elaborate and adapt the methodologies of synthesis and national accounts to the conditions and characteristics of the country, following the international recommendations;

- To promote the dissemination and training on the system of synthesis and national accounts, among both the producers and the users of macroeconomic statistics.

1.6 SCOPE OF THE NEW 2005 BASE

The 2005 base preserves the conceptual aspects of SNA 1993, already adopted in the 1994 and 2000 bases. Nevertheless, some modifications were introduced: for instance, in the method of compilation of the accounts at constant prices and the treatment of labor provided by temporary employment agencies (these two recommendations were already addressed in SNA 1993 but had not been implemented). Additionally it included the SNA 2008 recommendations concerning the accounting of expenses in weaponry as capital formation, and the treatment of the different types of pension schemes.

From a practical point of view, the 2005 base includes implicit improvements: the methods of calculation of the variables, the organization of the process to compile the accounts and the systematization of the processes of consolidation and synthesis. Among the improvements and modifications of the base, the following deserve particular mention:

●**FISIM:** Formal changes are introduced in the method used to calculate FISIM and assign it as consumption by economic activities and institutional sectors. In the 2000 base, FISIM was calculated for all of the assets and liabilities of the financial intermediaries, including the "securities" (government treasury bonds or TES, other bonds, etc.). In the 2005 base, the above mentioned "securities" are excluded because when the financial intermediaries

buy or sell securities in the free market, they cannot control the prices at which they buy or sell them, nor the types of interest associated with them.[7]

Additionally, in order to calculate FISIM and its allocation (by activity and institutional sector), sources of information publishing consistent movement of the financial assets and liabilities are used, which then are broken down by type of assets and liabilities. The loans for consumption, housing, agriculture, trade and services are widely known. From this information FISIM is allocated by activity.

The distribution between households and corporations, beyond the productive structure, takes into account the relative demand of these sectors for loans.

FISIM at constant prices is calculated from the level of assets and liabilities as of December 31st, deflated by the Consumer Price Index (CPI) (excluding food and fuels) and the intermediation rate calculated for the base year.[8]

● **Accounts at constant prices:** National accounts are compiled, in a first stage, at current prices and then at constant prices of the previous year. Calculations are carried out at a detailed level of the product classification (six digits, equivalent to 367 products), and at this level, in both price systems, a balance between supply and demand is established product by product. The above also corresponds to the method previously used. Current prices are, in theory, the unique prices that assure an identity between the value of supply and the value of demand.

Therefore, when balancing the supply and demand of products, using the prices of the previous year, creates implicitly a distortion, which magnitude will be the greater the bigger the difference in prices between the current year and the previous year, for each of the components of both the supply and the demand.

In the 2000 base, the elementary variables were calculated at constant prices of year 2000 by concatenating initially the elementary indices calculated at prices of the previous year, that, for the calculation of indices for aggregates, were then combined using as weights the values of the variable in year 2000. Finally, the values thus calculated were "balanced" again to obtain the formal identity between supply and demand. This identity did not correspond to the economic reality since, as previously mentioned, only current prices properly assure the balance of supply and demand. Due to the adjustments that it was necessary to make, not all of the volume and price indices originally calculated for each variable were maintained, to artificially restore a balance that does not correspond to the economic reality. In addition, this method tends to overvalue the effects of the changes of prices (that is to say, to undervalue the measurements in "volume") because it does not allow product substitutions, although this is a part of the logical behavior of both the intermediate and the final consumer.

In order to correct this procedure, that forced to distort the representation of the changes in volume and prices of the variables of the balances, and that biased the vision of the growth in volume, the 2005 base follows the internationally recommended practice, which consists of setting the accounts at prices of the base year by chaining the annual indices of volume and prices, at both a detailed and aggregate level, of the different variables

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[7] EUROSTAT (2008) *Report to the Council and the European Parliament on the allocation of FISIM*, volume 8
[8] Chapter 6 describes the methodology to calculate FISIM.

involved in the "balances". The method of linking indices is followed then at all levels, including aggregates.

The chained indices at a detailed level reflect the changes in volume and prices for each one of the products. The indices for aggregates take into account the annual change in the weights, that is, the possible substitutions among products. These accounts are "out-of-balance", and there is a statistical discrepancy that the users must assign: This discrepancy is not an error but a controlled difference resulting from the differences of the rates of change of the prices of the different components considered in the balances.

● **Household final consumption expenditure:** Household final consumption expenditure, for year 2005, was calculated using the 2006-2007 National Income and Expenditure Survey, and from the Living Conditions Surveys of years 1997, 2003 and 2008. This calculation was complemented with additional works to introduce some adjustments, mainly for products whose consumption presented low frequency or those traditionally underreported. That is the case of the sales of vehicles, the residential consumption of public utilities, the production of rentals of dwellings, the consumption of alcohol or of other products with negative perception, domestic services, etc.

The direct estimations of the consumption of households became, in some cases, an element of synthesis and adjustment of other variables. Thus, from the results obtained for some products, inconsistent data were detected in the value of production or in the way smuggling is accounted for in the accounts; for example, in the case of cigarettes, smuggling flows are affecting exports and not imports as it was originally thought.[9]

● **Change in inventories:** The change in inventories was explicitly calculated using all the sources of information available, especially the Annual Manufacturing Survey (EAM) and the Annual Trade Survey (EAC), which make its economic interpretation possible. In the 2000 base, even though the information of the surveys was examined, the results obtained from the comparison of supply and demand were favored. This approach often led to unacceptable implicit levels of inventories. For some products, these levels were growing or decreasing permanently, which is totally impossible. For perishable products, mostly agricultural products, the new system has also introduced losses in commercialization that enable a better reconciliation of the flows, both in quantity and value.[10]

● **Taxes on financial movements (GMF):** The treatment of the GMF has been modified. This change has effects on the level and growth of GDP. In the 2005 base, GMF is classified as a tax on products (D.214), in the category of *Taxes on financial transactions and capital*, considering that it is a levy on the use of some means of payment.

● **Other improvements.** Post-harvest losses and the losses in the commercialization of perishable products were introduced as a tool for the analysis and the calculation of the commodity flow balances, and that such losses were allowed to fluctuate according to the short-term analysis of supply and demand. Additionally, other improvements were made such as:

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[9] Chapter 4 presents the methodology followed to estimate household final consumption expenditure

[10] Chapter 3 presents the methodology followed in the calculation of the change in inventories.

– The use of the civil year instead of the crop year was adopted to measure the production of short-term crops, aiming to improve the coherence of the measurements of the agricultural activity with that of other economic activities.

– The series of employment, by activity and occupational position, were reviewed. Matrices were elaborated for each year and integrated as a part of the compilations of the base year and of the current years. The labor supplied by employment agencies was assigned to the business services activity. Therefore, the corresponding value added was included in the business services activity and not, as it was previously the case, in that of the activity using these services.

– The data on smuggling were reviewed working jointly with DIAN, and the results were validated with the commodity flow balances of the products.

– Some studies were commissioned to universities' research centers on topics such as the determination of trade margins according to market circuits, and the study of the relationship between the Annual Manufacturing Survey (EAM) and the Monthly Manufacturing Survey (MMM), so as to improve the relationship between annual national accounts (using the former source) and quarterly national accounts (using the latter).

– In current years the analysis of the variables in series is favored, in contrast with the previous bases where the analysis was done exclusively on a year-to-year basis.

– The production of rentals of dwellings was recalculated updating the methodology of the stock of dwellings using the results of the 2005 Census. Additionally, the calculations were made taking into account the type of dwelling, the number of rooms and the "stratum" (socio-economic characteristics of the neighborhood where it is located).

– The calculations by activities and products were made using independent processes; even though the synthesis process was carried out under the coordination of a specifically dedicated team, it was also actively supported by the thematic coordinators who finally controlled the adjustment process.

– A greater integration of the annual and quarterly accounts. For an important number of economic activities, and to the extent possible, the methods of calculation aim at achieving coherence between the results of the annual and the quarterly accounts.

  ➢ For the main agricultural products, the annual production is calculated as an aggregate of the quarterly estimations, valuing the production of each quarter using the prices of the respective period.

  ➢ For air transport, and in accordance with the annual accounts, the quarterly values are a function of the companies' income.

  ➢ For the government sector, the two classes of accounts are elaborated based on the accounting information produced by the agencies that belong to the sector: the quarterly accounts are based on a sample of controlled entities while the annual accounts use the whole universe.

> ➤ In foreign trade, imports and exports of goods and services at current and constant prices are calculated quarterly, and the annual values are obtained as the sum of the quarterly estimates.

– Change of emphasis in the process of compilation of the goods and services accounts. In the production of goods and services accounts, the analysis by economic activity and the use of the corresponding sources of information receive first priority. Then, the product analysis is carried out. In the previous compilations, the analysis of products was favored and the accounts of the activities were obtained from the balances by product.

– Better integration of the accounts by activity and by institutional sector. In order to assure the coherence between the accounts by activity and by sector, a systematic cross checking of the information reported by an enterprise and by its establishments is made. The enterprise is the reporting unit for several controlling agencies (the Superintendency of Companies, the Superintendency of Securities and the General Accounting Office (CGN)), whereas the establishments report to DANE when included in the economic surveys. Based on this work, a table crossing activities and sectors was constructed, which provided part of the information corresponding to enterprises not covered by the controlling agencies.

– Systematization of the processes. The system of automatic calculation of the accounts was extended to include the consolidation and synthesis processes of the system. This enables a new approach with respect to the work of the sectoral coordinator, who can dedicate more time to study the results and to discuss and coordinate with other colleagues regarding the kind of adjustments that are deemed required instead of getting into cumbersome calculations.

1.7 STAGES FOR STRUCTURING THE NEW BASE

The tasks for structuring the 2005 base of the national accounts include the compilation of the accounts for the base year and for the current years.

The accounts of the base year were compiled in five stages:

– Definition of the conceptual and methodological aspects;

– Compilation of the accounts at an independent level;

– Collection of the information resulting from independent compilation;

– Consolidation of results and generation of reports;

– Synthesis of the system.

● **Definition of the conceptual and methodological aspects:** In this first stage, the conceptual and methodological framework for the 2005 base was established, in terms of the classifications, definitions and methodologies to be used. In the classifications, those of products, activities, institutional sectors, transactions, other flows, assets and liabilities were defined. The equivalences between the classifications of national accounts and those

used in basic statistics were established (namely, the Basic Classification of Trade Statistics, NANDINA, ISIC Rev. 3 AC and CPC 1.0 AC used in the surveys).

The methodologies include, among others, the definition of the quantifying procedures for Financial Intermediation Services Indirectly Measured (FISIM), household final consumption expenditure, change in inventories, employment by activity and institutional sector, government consumption of fixed capital, and the accounts at constant prices.

● **Independent compilation of the accounts:** The second stage of the project included the processing of the basic information required and the compilation, in independent form, of each part of the system, without integrating them. Work was implemented on: economic activities, sources of information, institutional sectors and transactions, and in all the cases, organized results were obtained in terms of the classifications, accounts and requirements of the national accounts.

At an independent level the following tasks were carried out:

– Compilation of the production and generation of income accounts;

– Compilation of the accounts of the institutional sectors;

– Cross-checking of the information from economic surveys with the information reported by the control and monitoring agencies;

– Calculation of the cross-sectional elements of the accounts.

- Compilation of the production and generation of income accounts: An important part of the work was focused on the compilation of the production and generation of income accounts, according to reporting sources, institutional activities and institutional sectors.[11] In these accounts, production and intermediate consumption were detailed at the six digits level of the product classification.

This work had a double purpose: Firstly, to produce the accounts considering two scenarios of analysis i.e. activities and institutional sectors, and secondly, to use the intermediate consumption and output data by product to generate matrices of production and intermediate consumption, which are pivotal elements in the process of construction of the goods and services and production accounts.

The results of the production and generation of income accounts were obtained in each case, based on the available information: economic surveys, control and monitoring agencies (Superintendencies, the General Accounting Office), the micro-establishments survey and information from DIAN.

For the general government and the financial sectors, accounts were simultaneously elaborated by activity and by sector as the available information enabled obtaining coherent results for the two groups. In the activities whose available information is incomplete (any one of prices, quantities, costs, etc. might be lacking), the procedure is different: the production is calculated from quantities and prices, and costs are determined

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[11] The production and distribution of income accounts for institutional sectors are compiled at the same time as the other accounts for the sectors. Refer to the following paragraph.

separately; such is the case of agriculture, cattle farming, forestry, fishery, part of the mining activities and land transport, whose accounts were elaborated by crop, type of cattle or mining production; in the case of transport, independent accounts were compiled for urban and interurban services and also for passengers and freight.

- Compilation of the accounts of the institutional sectors. For the institutional sectors and sub-sectors and for the rest of the world, the complete system of accounts was compiled, including the production and generation of income accounts. The information used came from accounting information prepared by the corporations and government entities reporting to monitoring and control agencies (CGN, the Superintendencies of Companies, Public Utilities, Family Compensation, Solidarity economy, Finance) and DIAN.

The financial statements provide complete information on the transactions made by these units, their net worth and their changes, and enable the establishment of the system of accounts as defined in SNA 1993 and 2008, though with some particularities. To compile these accounts, a methodology was defined that transformed the accounting information (private or public) into national accounts registers that also constitute a complete and coherent system.[12]

The monitoring and control agencies have a chart of accounts specific to each category of units that should be followed by controlled entities to present their financial statements, which facilitates the use of these statements for statistical purposes. From this information the accounts of the sectors are elaborated: financial corporations, non-financial corporations, and general government. The balance of payments is the source of information used to elaborate the account of the rest of the world.

- Cross-checking the information from economic surveys with the information reported by control and monitoring agencies: To be able to aggregate and reconcile the information reported by corporations to DANE's economic surveys (industry, trade and services) and the information presented to the monitoring and control agencies, a cross-check of these two sources was made.

Two objectives were pursued through this task: on the one hand to aggregate data from different sources without duplications or omissions and, on the other hand, for corporations and organizations reporting to various sources, to reach a single figure.

The work was carried out in three steps: the crossing of registers, the comparison of the information and the elaboration of the production and generation of income accounts by activity and by institutional sector.

The merging of records had the following purposes:

To construct a unique and clean register of non-financial private corporations.

> ➤ To have a control tool when consolidating the different corporations' groups.

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[12] For more details, refer to: DANE. *Metodología de los Sectores Institucionales, Chapter 3, El paso de la información contable a las cuentas nacionales. page 65 (2003) y Metodología Cuentas Nacionales de Colombia, Año base 2000, Sección 30.5, Metodología para transformar la información contable en términos de Cuentas Nacionales, page 711 (2009)*

➢ To establish the register of corporations omitted from either the surveys or the superintendencies.

From the merging of directories, four subgroups of companies were identified (Diagram 1):

a. Corporations reporting only to the monitoring and control agencies (SS). For them, the production and generation of income accounts were elaborated based on the financial statements that the companies report to these agencies.

b. Corporations reporting only to the economic surveys (EEA). Their accounts were elaborated using the information collected by the surveys.[13]

c. Corporations reporting both to some of DANE economic surveys and to the monitoring and control agencies (SS-EEA). For this group of corporations a special work was carried out. The information reported by the two sources was compared to establish the differences and their causes, and to define the adjustments to be introduced; the objective was to obtain a single result for the two sources.

d. Non-financial corporations that did not belong to any of the previous groups. They were corporations that were neither included in DANE annual surveys nor in the reports of the superintendencies. Their accounts were calculated from the aggregated reported information provided by DIAN.[14]

Diagram 1. Merging information from DANE economic surveys, the monitoring and control agencies and DIAN

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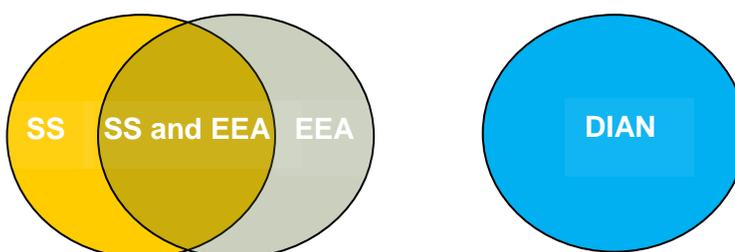
Source: DANE, DSCN

Table 1 shows the number of corporations investigated by the superintendencies and by the economic surveys in 2005. Table 2 presents the corporations included in the economic surveys classified into those that are included, and those that are not included in the registers of the monitoring and control agencies.

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[13] They were split into corporations and unincorporated enterprises.

[14] To obtain data for this group a listing of the enterprises with available information was sent to DIAN. This agency consolidated the information for the entities not included in the listing, grouping them according to their ISIC (4 digits) classification and sent back these consolidated data to DANE.

Table 1. Number of institutional units reporting operational income, 2005 base

Source	Total
Annual Manufacturing Survey (EAM)	7.428
Annual Trade Survey (EAC)	6.969
Annual Service Enterprises Survey (EAS)	4.199
Superintendency of Companies	15.260
Superintendency of Solidarity Economy	5.211
Superintendency of Finance	106
Superintendency of Ports and Transport	296
General Accounting Office (CGN)[a]	470
Family Compensation Funds	51

source: DANE -DSCN

[a] Public enterprises

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Table2. Coverage and intersection of the different sources of information for institutional units reporting operational income
2005 base

Control agencies	Total by source (1+2+3)-4+5	(1) EAM	(2) EAC	(3) EAS	(4) Included in more than 1 survey	(5) Covered only by control agencies
		Economic surveys				
Total	21.394	2.817	2.109	694	44	15.818
Superintendency of Companies	15.260	2.729	2.053	659	31	9.850
Superintendency of Finance	106	38	6	3	2	61
Superintendency of Solidarity Economy	5.211	27	32	12	2	5.142
Superintendency of Ports and Transport	296	9	4	2	1	282
General Accounting Office (CGN)[a]	470	13	0	7	0	450
Family Compensation Funds	51	1	14	11	8	33
Covered only by surveys	--	4.611	4.860	3.505	--	--

source: DANE, DSCN

[a] Public enterprises

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- Calculation of the cross-sectional elements of the accounts. With the purpose of establishing the commodity flow balance for each of the 367 products defined in the classification of national accounts, the following elements were calculated:

  ➢ Registered exports and imports;

  ➢ Smuggling by broad classes of products;

  ➢ Rates of non-deductible VAT;

  ➢ Taxes and subsidies on products, except VAT;

  ➢ Levies and taxes on imports;

  ➢ Rates of trade margins;

  ➢ Transport margins;

➢ Household final consumption expenditure;

➢ Gross fixed capital formation;

➢ Change in inventories.

For activities the calculations included:

➢ Other taxes and subsidies on production;

➢ Occupied persons.[15]

In order to estimate these elements the following sources were used: foreign trade statistics, balance of payments, information from the government, the income and expenditure survey and the households survey. Specific studies were carried out to estimate smuggling, trade and transport margins, and the VAT rates.

The information on production and intermediate consumption by product was deduced from the production and generation of income accounts, in which the production and intermediate consumption by product were broken down into the six digits level of the classification.

Chapters 3, 4 and 5 explain the methodology used to calculate the change in inventories, the household final consumption expenditure and the employment matrix (occupied population).

● **Collection of information:** Once the independent work of the different units was completed, the information on the production and generation of income accounts, the cross-sectional elements and the accounts of the institutional sectors were centralized. An automatic calculation system organized as a database stores and processes the data.

The database was structured using the attributes defined by the SNA: products, activities, institutional sectors, and transactions. In treating, for instance, production, it is necessary to specify the code of transaction, the product, the activity and the institutional sector to which the corporations belong.
The production and generation of income accounts were stored considering the subgroups of accounts generated in the merging of the information of the economic surveys and the monitoring and control agencies (diagram 1), the cross-sectional elements by variable and products, and the accounts of institutional sectors by source of information.

● **Consolidation of results and generation of reports:** Once the information was collected, the results were consolidated, and some calculations were made before the generation of the reports. They are the basis on which the process of synthesis is grounded. At this stage of the project the data that have been calculated have still not been validated; since the accounts have been obtained in an independent fashion, they are not coherent with the rest of the system.

With respect to the transactions of goods and services the following reports are generated:

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[15] These data are incorporated into the employment matrix. Refer to Chapter 5

- Supply and demand by product, indicating the difference between supply and demand;

- The production and generation of income accounts classified by activity, source, institutional sector, class of crop and system of transport (when relevant). In all activities, the production and the intermediate consumption by product are presented at the six digits level of the classification;

- The production and intermediate consumption matrices, though not integrated within the rest of the system.

● **Synthesis of the system**: The starting point for the development of this phase of synthesis was the information stored in the database and the reports generated in the system. The task consisted in making compatible the parts calculated in independent form and obtaining a set of data that was balanced from an accounting point of view and significant for economic analysis.

It was an interactive process in which several iterations were performed until finally obtaining the balance of the accounts. In some cases, it was necessary to return to the collection stage, when errors in the data sources or in the processes of calculation were detected. From the practical point of view, it was a collective work in which the results were analyzed and the adjustments to be made were determined.

Within the synthesis process, analysis was performed and matrices were constructed as follows:

- ➢ Analysis of the chains of production;
- ➢ Elaboration of the commodity flow balances;
- ➢ Adjustment of the matrices of production and intermediate consumption
- ➢ Elaboration of the matrix of gross fixed capital formation;
- ➢ Elaboration of the employment matrix;
- ➢ Elaboration of the sector-activity cross-classification table;
- ➢ Table of integrated economic accounts.

➢ **Analysis of the chains of production**: The purpose of this stage is to reconcile the data belonging to the different steps through which a product is transformed. The supply of wheat, for instance, must be coherent with the wheat used in the transformation industry (the mills). If this relation is not logical, it is necessary to analyze the data related to the different processes, to identify the origin of the problem and to make the necessary adjustments. Chains of production were defined for activities showing direct dependency on one or several intermediate consumptions used in the production process: e.g. wheat and flour, cattle and meat, etc.

➢ **Elaboration of the commodity flow balances of products**: The elements of supply and demand come from a great number of data from different sources and are not necessarily coherent at this stage. That means that their balance is not always obtained at once. A critical analysis of the results and of the sources of information makes it possible to determine the causes of the differences and to adjust the results iteratively until the same total is obtained for supply and for demand.

Carrying out this task implied in some cases the modification of the variables considered in the first step. Frequently, when comparing the supply and demand data,

differences appeared; this could be due to multiple factors. Depending on the product, the adjustment was made on one or other elements of supply or demand, the rates of trade margins, the rates of the Value Added Tax (VAT) or the volume of the smuggling initially calculated.

➢ **Elaboration of the matrix of Gross Fixed Capital Formation (GFCF)**. A GFCF matrix was constructed to bring coherence into the data of GFCF calculated by product (supply) and by institutional sector. For this effect, the data collected by these two approaches were compared and cross-classified and, depending on the product one or the other estimation was favored. Thus, in the case of infrastructure works, the more reliable data come from the institutional sectors whereas for machinery and equipment they are derived from commodity flow balances.

➢ **Elaboration of the employment matrix**. **The employment matrix is integrated into the framework of the national accounts with a double objective: analytical and statistical.** From the analytical point of view, it enables establishing technical-economic relations of interest for economic analysis. Among the most important indicators the following can be mentioned: the distribution of national employment according to sector of origin, the average production of remunerated and non-remunerated workers, the average wage by worker, the average income of the self-employed workers and, in general, the construction of indicators that explain the characteristics of production and employment in each of the production processes.

From the statistical point of view, the employment matrix facilitates the economic coherence between the levels of production of an activity and the amount of labor required; it also serves to determine the size of the economic activities of the small entrepreneurs not observed in the economic surveys, for which it is hard to obtain statistics and/or accounting figures. Chapter 5 presents the methodology for constructing the employment matrix and its main results.

➢ **Elaboration of the sector-activity cross-classified table**. When setting together the production and generation of income accounts, constructed for the institutional sectors and for the activities, the sector-activity cross-classified table is obtained. This table is elaborated once the synthesis of the transactions on goods and services has been validated[16].

The methodology used to construct this table varies depending on whether the basic elements belong to activities where the accounts are obtained from the sum of subgroups of enterprises: those covered by the annual economic surveys, by survey of micro-establishments, by the monitoring and control agencies (the superintendencies, the General Accounting Office), DIAN; or if those elements are obtained for enterprises by estimates derived from consideration on employment figures. In these activities, each subgroup of data is stored in the system with its attributes of activity and institutional sector; therefore, the two classes of accounts are obtained simultaneously.

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[16] For more information on the methodology used for the calculation of this matrix, refer to DANE (2009). *Capitulo 29, Metodología para elaborar el cuadro cruzado sector-rama de actividad.* In*: Metodología Cuentas Nacionales de Colombia, año base 2000, page. 651*

Table 3 shows as an example the subgroups that comprise the accounts of activity "22. Manufacture of wearing apparel including knitted and crocheted fabrics and articles; dressing and dying of fur; and manufacturing of articles of fur".

In other activities, the production and generation of income accounts are calculated in a first stage at the aggregated level and in a second stage they are broken down into institutional sectors. It is the case of the activities where the information of production and costs is presented for the whole activity, e.g. for a crop, for a system of transportation, etc.

Table 3. Activity 22. Manufacture of wearing apparel including knitted and crocheted fabrics
Production and generation of income accounts by sources of information
2005

thousand million pesos

Transaction codes National Accounts	Total activity	Enterprises both in EAM and in control agencies (SS-EEA)	Enterprises covered by EAM not reporting to control agencies (EEA)	Enterprises reporting to control agencies not covered by EAM (SS)	DIAN	Adjustment from non-observed employment	Micro-establisment s survey	Outsourcing	FISIM	Other adjustments
P.11	10.185	4.425	1.025	279	886	2.097	284	1.120	0	68
P.2	6.905	3.447	702	189	445	768	198	783	94	278
D.111	1.612	565	179	56	202	393	32	185	0	0
D.121	211	107	33	6	21	0	4	31	0	9
D.122	0	0	0	0	0	0	0	0	0	0
D.29	102	40	12	35	3	0	1	11	0	0

Source: DANE - DSCN

➢ **Elaboration of the table of integrated economic accounts**. The construction of the table of integrated economic accounts represents the final stage of the synthesis of the national accounts. It entails the reconciliation of the results of the production and generation of income accounts, elaborated by sectors and activities, the harmonization of the data of income and expenditure of each one of the transactions and of the real accounts of the sectors with their corresponding financial accounts produced by the Central Bank.

1.8 CALCULATION TOOLS FOR THE COMPILATION OF THE NATIONAL ACCOUNTS

For the compilation of the national accounts, a set of computational tools is available, covering from the level of treatment of basic information and the collection of the data independently elaborated to the final steps of synthesis and the production of final results and tables. (Diagram 2).

Diagram 2. Treatment of basic information
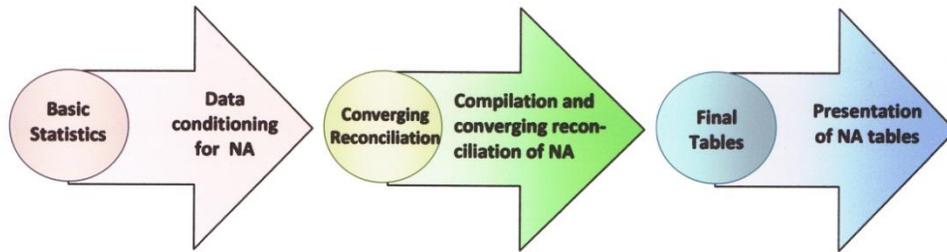
Source: DANE, Realizar Consultores Ltda.

Considering the characteristics of the processes of elaboration of the national accounts, the instruments that have been developed may be classified in two groups: the first one comprises all those instruments involved in the stage of preparation of basic statistics, according to the requirements of the national accounts, and the second corresponds to the system that compiles the standardized information and generates the synthesis of national accounts through a process meant to reconcile them within a convergent procedure (Diagram 3).

Diagram 3. Synthesis and converging reconciliation in national accounts
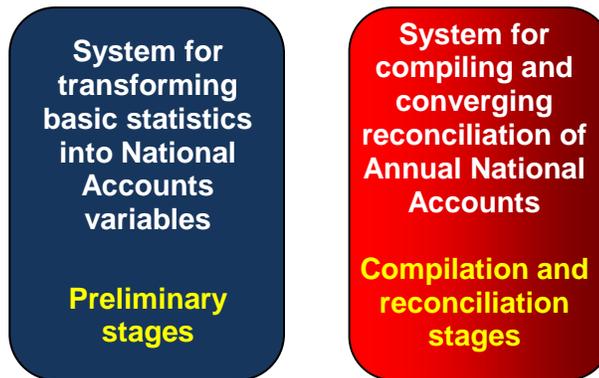
Source: DANE, Realizar Consultores Ltda.

The treatments applied by this type of instruments are characteristic of those used in the conformation of the data repositories (Diagram 4), where the Fact table is formed by standardized economic data according to the requirements of the national accounts and whose main preparation stages are:

–   Extraction: consists of taking the information from the basic statistics provided by the different sources and locating it in a centralized data repository, a process that facilitates the access and analysis for the different users.

–   Editing: is the process for controlling the consistency and coherence of basic statistics to determine the viability of the use of such statistics in the elaboration of the national accounts.

– Transformation: without belittling the importance of the other activities, it is in this stage where the methodological component is included, that is to say, where the basic statistics are interpreted to obtain their transformation to the needs and requirements of the national accounts, and therefore, it is the most important step.

– Loading: consists of locating the standardized information according to the classifications used in the national accounts in a centralized data repository.

Diagram 4. Conformation of data repositories
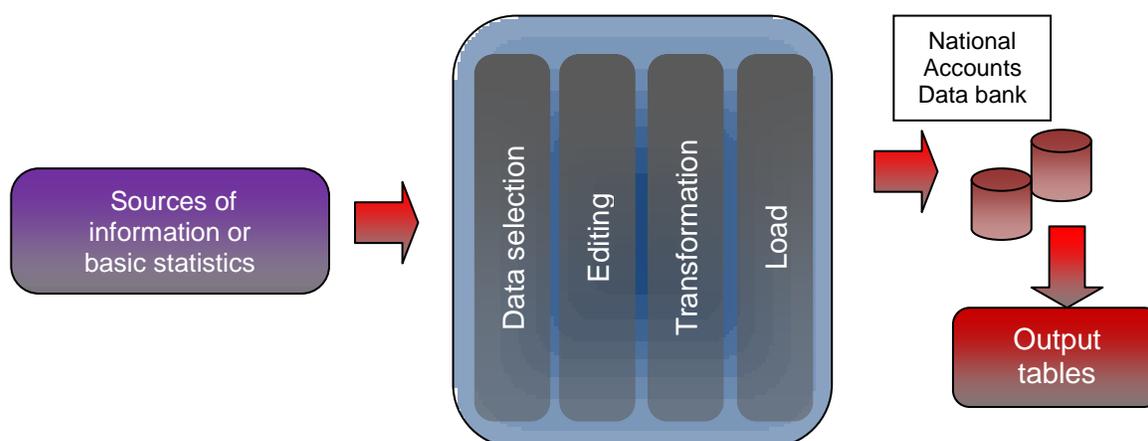
Source: DANE, Realizar Consultores Ltda.

In the context explained above, there are two systems that enable the processing of the sources with a greater demand of information for their complexity, volume and relevance in the results; these are:

– **The system for the calculation of the accounts of the institutional sectors**. In order to elaborate the accounts of the institutional sectors, a system was designed and implemented to automatically calculate the accounts. This system is applied to the institutional units with standard accounting information, such as: the corporations and entities controlled by the General Accounting Office (CGN) and the superintendencies of Companies, Public Utilities, Solidarity Economy and Finance.

– **The system for the construction of the accounts by activities from the Annual Manufacturing Survey (EAM).** Same as in the previous system, this one focuses on the preparation of the data in accordance with the requirements of the national accounts, and its scope goes from the collection of the information coming from the EAM to the generation of the production and income generation accounts for all manufacture activities.

It is important to point out that, when it comes to the production account, its construction considers not only the corresponding production and the intermediate consumption of the activities but also the product approach, which turns it into a direct input for the

construction of production and intermediate consumption matrices. Similarly, by means of this instrument price and value indices are generated, which are used for the commodity flow balances.

System for compilation and reconciliation of the annual national accounts. This component is the recipient of all the data processed according to the requirements of the national accounts; the main aspects to underline are the following:

– It takes into account all the elements of the central framework of the SNA 93;

– It enables working in series, that is to say, treating several years in a simultaneous way;

– It calculates the goods and services accounts at constant prices by means of the construction of chained indices;

– It enables the construction of the back-casted series, that is to say, the calculation of series of data for the years prior to year 2005;

– It ensures the traceability of the synthesis process of the national accounts.

As it was previously mentioned, this system receives as input standard information representing the facts of the economy characterized through a series of attributes normally used in national accounts, as shown in Diagram 5.

Diagram 5. National account data dimensions
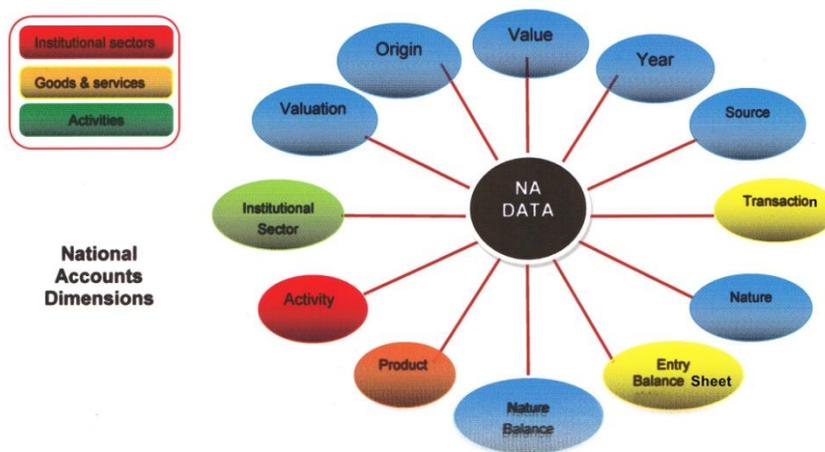
Source: DANE, Realizar Consultores Ltda.

The converging reconciliation process consists of a series of iterations where each cycle is developed in four stages (Diagram 6):

– Incorporation of the standardized information according to the requirements of the national accounts;

–   Elaboration of the calculations to construct the results that are not obtained directly from processing the basic statistics;

–   Generation of tables of results according to the SNA 93 central framework (Diagram 7);

–   Analysis of the results to establish the adjustments that need to be incorporated in order to eliminate the discrepancies existing in the different output tables.

Diagram 6. The interactive stages in converging reconciliation
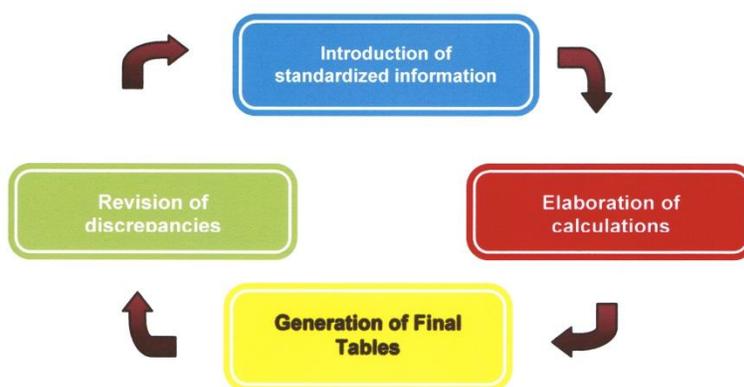
Source: DANE, Realizar Consultores Ltda.

The process concludes when all the discrepancies of the resulting tables disappear and their coherence is guaranteed. In short, the objective of the instrument is to facilitate the analysis of the compiled information to support the decision-making process that eliminates the differences that appear in the analytical tables in a coherent way.

Finally, when new developments appear in the methodology, the compilation module incorporates them in its processes. In the present case, this involves in particular the methods for the construction of the constant price results for the goods and services accounts using chained indices. The new processes deviate from the traditional method of elaboration of the national accounts where each year was compiled separately, one at a time, and now they require the work of several periods in a simultaneous way, both for the current years and for those periods that need to back-cast time series by transaction. The new system thus provides firstly, more analysis tools to the thematic analysts for the construction of the national accounts and secondly, more instruments to the analysts responsible for sector analysis in the processes of the change of the base year.

Diagram 7. Generation of tables of results according to the SNA central frame
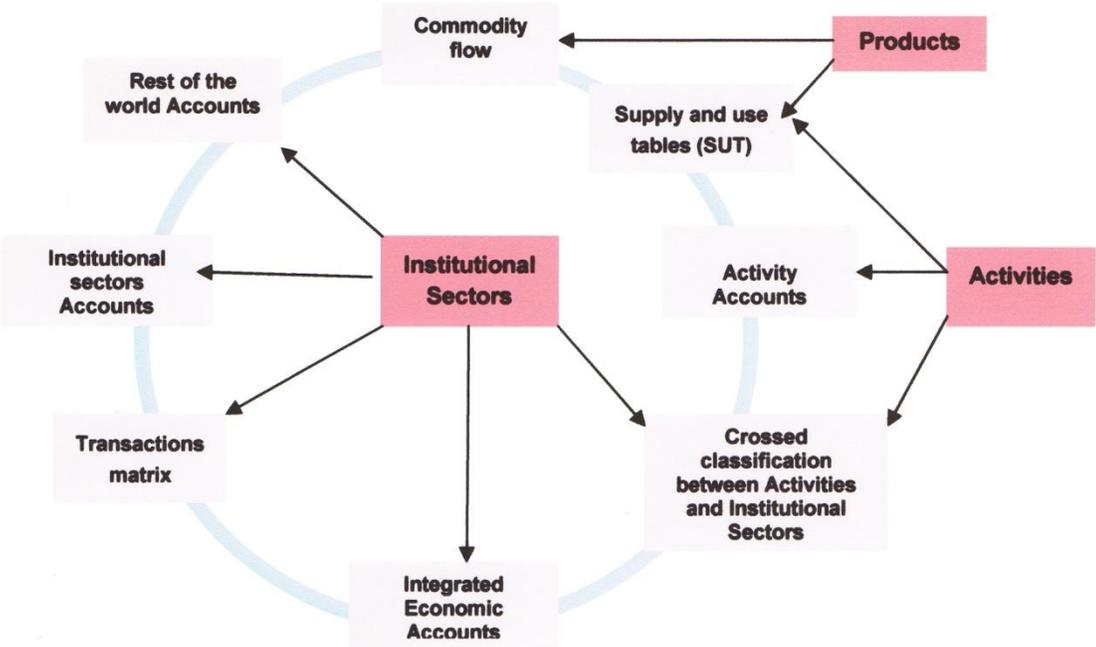
Source: DANE, Realizar Consultores Ltda.

2. CALCULATION AT CONSTANT PRICES BY CHAINING

In order to correctly understand the change over time of the aggregates of the goods and services accounts, it is necessary to separate, within these changes, which part can be attributed to the general movements of prices, and what is more likely to be attributed to the changes in volume (physical amounts, relative weight of segmented markets, quality, etc.).

Unfortunately, there is no unique way to make this distinction. Each method produces different results and each one has advantages and drawbacks.

Naturally, this situation has been a matter of concern for the international community of specialists in national accounts, giving rise to debates and to recommendations, which have evolved gradually from the first statements in the recommendations of national accounts of 1968 (SNA 1968), until reaching a certain consensus (SNA 1993 and SNA 2008).

In the 2005 base, it has been decided to abandon the method that had been used until then and to adopt the practice recommended nowadays by the international community[17].

2.1 THE METHOD FOLLOWED IN COLOMBIA BEFORE THE 2000 BASE

In Colombia, before the 2000 base, the general method that was being used was as follows:

– The calculations at constant prices of the goods and services accounts were made at the six digits level (400 products approximately) initially at previous year's prices; these balances were not published;

– The commodity flow balances of products at previous year's constant prices were "brought into balance", meaning that the global values of supply and use of goods and services were set equal using previous year's prices for each one of the products. This "balance" has some component of distortion since the current prices are the unique prices that assure that the supply and the demand are balanced, in particular, when there is price discrimination for a product, meaning that it is sold at different prices to different clients (for example, in Colombia, the case of public services); the value introduced to balance or "economic discrepancy" was distributed, usually on the weakest or greatest item of the balance.

– From these balances called "at previous year's prices", the indicators of change in volume for each one of the variables at previous year's prices were deduced. This operation was made at a detailed product level (six digits level or more as in the case of agricultural products) ($I_{n/n-1}$); in most of the cases, they were elementary indicators of quantity, but they could also be complex indicators; in the same way and within the same exercise, the indicators of the corresponding implicit prices were also obtained.

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[17] Refer to United Nations, *SNA 1993*. Chapter 16 and *SNA 2008*. Chapter 15. And *Handbook on Price and Volume Measures in National Accounts* (Eurostat, 2001)

– Then a procedure by recurrence was developed, starting from the balance at 2000 prices obtained for the previous year (year (n-1)). Multiplying the volume and price indicators derived from the series of accounts already adjusted of the year (n-1) at prices of the base year (2000 in our case), that will be called $I^*_{n-1/0}$, by the indices obtained in the previous procedure $I_{n/n-1}$, the indicators to be used for the calculation of year (n) $I_{n/0}$ were obtained: that is, initially, for each one of the variables (product by type of use or product by type of origin), and at a detailed level, the index used was the product of the volume indices calculated year-to-year, combining adjusted and non-adjusted indicators:

$$I^*_{n/0} = I_{n/n-1} \times I^*_{n-1/0}$$

– For every year (n), these volume indicators were applied to the base year value (year 2000) to obtain the values of the corresponding variables at year 2000 prices. These values, obtained through individual indicators of each use and every origin, were adjusted so that again the value of supply was set equal to the value of uses at year 2000 prices. The value of the adjustment was then distributed, either in a proportional way among the different variables, or assigned to the item that seemed weaker (frequently, to the change of inventories when working with storable goods) or to the biggest (household final consumption expenditure was frequently used as adjustment variable). Consequently, the indicators of growth of these adjustment variables were adjusted and were no longer equal to the product of the indicators obtained through the initial analytical work corresponding to every year; in other words, once the previous calculation was made, adjustments were introduced. The aggregates at constant prices were calculated as the sum of their components at constant prices.

This is illustrated in the example below.

The situation of basic information is as follows:

Table 4. Example of calculation of price and volume indices. Basic information at prices of the previous year

Products	1990 current prices	Volume index (91/90)	1991 values 1990 prices	Price Index (91/90)	1991 current prices	Volume index (92/91)
Total	**400,0**	**108,8**	**435,0**	**98,6**	**429,0**	**93,2**
A	100,0	105,0	105,0	110,0	115,5	102,0
B	300,0	110,0	330,0	95,0	313,5	90,0

Products	1992 values 1991 prices	Price Index (92/91)	1992 current prices	Volume index (93/92)	1993 values 1992 prices	Price Index (93/92)	1993 current prices
Total	**400,0**	**105,9**	**423,5**	**97,4**	**412,5**	**103,0**	**424,7**
A	117,8	108,0	127,2	103,0	131,0	105,0	137,6
B	282,2	105,0	296,3	95,0	281,5	102,0	287,1

Source: DANE. DSCN

Products A and B are elementary products. *The total* is the sum of products A and B. For each year, the volume and price indices of A and B are known, and are expressed in relation to the immediately previous year:

$$I_{vol} (91/90),\ I_{vol} (92/91),\ I_{vol} (93/92)\ \text{etc.}$$

The volume and prices indices of *the total* derive from the volume and price indices for products A and B according to the following formulas:

$I_{vol}91/90$ (total) = Value (total) $^{\text{at 91 prices}}$/Value (total) $^{\text{at 90 prices}}$= 435.0/400.0=108.8

This is a Laspeyres type volume index, meaning that it can be expressed as a weighted arithmetic mean of the volume indices of elementary products A and B in which the weights used are proportional to the values observed in the basic period (year 90, then 91, 92); this formula is applied to all the volume indices of the *total* variable in the series.

In the same way, it is possible to verify that the corresponding price indices are Paasche indices, that is, weighted harmonic means of the elementary price indices where the weightings are proportional to the current values.

Applying the method described above, the calculations of the variables at 1990 prices are made as follows:

Table 5. Calculation at prices of 1990 using the method followed until the 2000 base

Products	1990 current prices	Volume index (91/90)	1991 values 1990 prices	Price Index (91/90)	1991 current prices	Volume index (92/90)
Total	**400,0**	**108,8**	**435,0**	**98,6**	**429,0**	**101,0**
A	100,0	105,0	105,0	110,0	115,5	107,1
B	300,0	110,0	330,0	95,0	313,5	99,0

Products	1992 values 1990 prices	Price Index (92/90)	1992 current prices	Volume index (93/90)	1993 values 1990 prices	Price Index (93/90)	1993 current prices
Total	**404,1**	**104,8**	**423,5**	**98,1**	**392,5**	**108,2**	**424,7**
A	107,1	118,8	127,2	110,3	110,3	124,8	137,6
B	297,1	99,7	296,3	94,1	282,2	101,7	287,1

.
Source: DANE- DSCN
Note: The volume indices for A and B 1990 base are obtained by multiplying the volume indices of a year by those of the previous one.
       The total value at 1990 prices is obtained by adding up values for A and B. The volume index for the total is obtained by comparing the
       values at 1990 prices with the 1990 value. This volume index depends on the year chosen as base.

Considering products A and B as elementary products, the volume indices in relation to 1990 are obtained by multiplying the volume indices of a year in relation to the immediately previous year, a procedure which is called chain linking or chaining.

$$I^{1992/1990}{}_{vol}\ (A) = I^{1992/1991}{}_{vol}\ (A)\ X\ I^{1991/1990}{}_{vol}\ (A)$$

$$107.1 = 105.0\ x\ 102.0$$

$$I^{1993/1990}_{vol}(A) = I^{1993/1992}_{vol}(A) \times I^{1992/1990}_{vol}(A) = I^{1993/1992}_{vol}(A) \times I^{1992/1991}_{vol}(A) \times I^{1991/1990}_{vol}(A)$$

$$110.3 = 103.0 \times 107.1$$

For the *total*, this is not the method that is used. By definition, the value of the *total* at constant prices is the sum of its components at constant prices. Meaning that:

$$\text{Value}^{1992/1990}(\text{total}) = \text{Value}^{1992/1990}(A) + \text{Value}^{1992/1990}(B) = 107.1 + 297.0 = 404.1$$

The volume index of the *total* for year 1992 in relation to year 1990 is deduced by comparing the value of the total in 1992 at 1990 prices with the value of the total in 1990.

$$I^{1992/1990}_{vol}(\text{total}) = \text{Value}^{1992/1990}(\text{total})/\text{Value}^{1990/1990}(\text{total}) = 404.1/400.0 = 101.0$$

Mathematically, this volume index is a weighted average of the calculated volume indices for products A and B in which weights are proportional to the values of the variables **in base year 1990**.

In effect, we have:

$$(107.1 \times 100.0 + 99.0 \times 300.0)/400.0 = 101.0$$

This index depends on the value of the variables A and B in the base year (here, 1990).

As a result of the method that is used, for the *total* variable obtained as sum of variables A and B, the relationship between the indices of two consecutive years is not equal to the index calculated for these years in the accounts at previous year's prices . We have:

$$I^{1992/1991}_{vol}(\text{total}) \neq I^{1992/1990}_{vol}(\text{total})/I^{1991/1990}_{vol}(\text{total})$$

$$93.2 \neq 101.0/108.8 = 92.8$$

$$I^{1993/1992}_{vol}(\text{total}) \neq I^{1993/1990}_{vol}(\text{total})/I^{1992/1990}_{vol}(\text{total})$$

$$97.4 \neq 99.4/101.0 = 98.4$$

Additionally, when the base year changes, the annual growth rates are modified as a result of the changes in weights, as these are proportional to the values of the year taken as the base.

These are the negative consequences of the method of calculation of fixed base indices: *the rates of growth in volume between any two years of the series depend on the year taken as a base.*

2.2 COMMENTS

To separate the effect of the change in prices from the change in volume given the change in current value of an economic variable is not easy. The theories of index numbers are based on the theories of the consumer and the producer. These show how the economic agents react when facing changes in the relative prices of products available on the

market. It is known that the change in relative prices leads the economic agents (for example, the consumers) to modify the basket of goods and services that they acquire, with the purpose of maximizing their earnings (or minimizing their expenditure), in such a way that the effect of the change in the prices of products cannot be measured applying strictly the new prices to the basket of products that was previously acquired, a measurement that distorts the effect, as it does not takes into account the consumers' individual faculty to modify their basket when facing a change in relative prices.

The most current method (and that has been used in the national accounts before the construction of the 2005 base) to breakdown the change in the value of a basket of products consists of using a Laspeyres type volume index, that is a weighted average of the elementary volume indices of the products where the weights are the values of the period of reference, and a Paasche type price index, that is an harmonic average of the elementary price indices of products weighted by the values in the current period.

This is written as:

$$\text{I val}_{(n/0)} = \left(\sum p_o q_n \,/\, \sum p_o q_o \right) \; \times \; \left(\sum p_n q_n \,/\, \sum p_o q_n \right)$$

$$\text{I val}_{(n/0)} = \quad \text{(Laspeyres volume index)} \quad \times \quad \text{(Paasche price index)}$$

Nevertheless, the theory of index numbers explains that this breakdown has several limitations:

On the one hand it tends, generally, to overvalue the effects of the changes in relative prices between year 0 and year n, since, implicitly, it does not allow any substitution between products. Therefore, it overvalues the effects of "volume" when a product (for example, computers) sees its relative prices decrease, while its volume increases more rapidly than the average of the other products.

On the other hand, and this is explained in detail in *Eurostat Handbook on Price and Volume Measure in National Accounts,* every change of base year generates a change of the indices of aggregates because the values of the variables in the base year serve as weights of the elementary indices. And this is why in Colombia, every change of base year generates changes in the growth rates at constant prices, not only due to changes in the evaluations themselves associated with their revisions (a controlled change), but also due to the mechanical effect induced by the change in the weights of the elementary indices of evolution of the components.

In addition, in the case of new products that did not exist in the base year (case, for example, of products related to the new technologies, of the introduction or disappearance of new taxes on production, etc.), there is no clear way to calculate the volume index in relation to a non-existing item in the base period.

These limitations, and mainly the last ones, have induced the international agencies to discard the use of this method in their recommendations.

2.3 PROPOSAL FOR THE 2005 BASE

Considering the above mentioned remarks on fixed base indices, and in order to comply with the international recommendations, for the 2005 base it has been decided to adopt the principle of linking annual calculations to establish the accounts at constant prices, that is to say, that for each aggregate[18], the volume index of year (n) in relation to the basic year will be strictly the product of consecutive annual indices.

The consequence of this decision is that the value at constant prices (the one obtained by multiplying the value of the basic period by the volume index) of any aggregate is no longer the sum of its parts, each of them evolving according to its own chained indicators. The difference is called *"statistical discrepancy"* and will appear systematically in the calculations at constant prices.

This discrepancy is not an error but simply the consequence of using a formula of estimation of the growth rates of the aggregates that does not have the additivity property but that does respect the analysis done at inter-annual detailed level.

Usually this discrepancy is not a relevant value, of the order of 1‰ but it appears in all the cases in which a variable is the sum or the difference of two or more variables.

Nevertheless, these discrepancies may become more important if the variables combined have very different growth rates, and strongly fluctuating relative weights. .

Table 6. Method of calculation used in the 2005 base and statistical discrepancy

Products	1990 current prices	Volume index (91/90)	1991 values 1990 prices	Price Index (91/90)	1991 current prices	Volume index (92/90)
Total	400,0	108,8	435,0	98,6	429,0	101,4
A	100,0	105,0	105,0	110,0	115,5	107,1
B	300,0	110,0	330,0	95,0	313,5	99,0

Products	1992 values 1990 prices	Price Index (92/90)	1992 current prices	Volume index (93/90)	1993 values 1990 prices	Price Index (93/90)	1993 current prices
Total	405,6	104,4	423,5	98,8	395,1	107,5	424,7
A	107,1	118,8	127,2	110,3	110,3	124,8	137,6
B	297,0	99,8	296,3	94,1	282,2	101,7	287,1
Sum	404,1				392,5		
Discrepancy	1,5				2,6		

Source: DANE. DSCN

Notes: The volume indices for A and B 1990 base are obtained by multiplying volume indices of a year respect of the previous one.
The total value at 1990 prices is obtained by adding the values of A and B.
The volume index for the total is obtained by comparing the current year value at 1990 prices with the total value for year 1990.
These volume indices do not depend on the year chosen as base.
There is a controlled statistical discrepancy between the total value and the sum of the values at constant prices..

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[18] Only one exception applies and it refers to the change of inventories that, as its name suggests, corresponds to the difference of two levels and therefore, requires a special treatment.

In this example, the basic calculations at current prices and at previous year's prices are similar to those in the example presented in Table 5 above. The difference happens when the variable "total" is calculated for 1992 at 1990 prices: it is directly obtained from its year to year indices instead of being obtained by adding its components A and B. The difference with the sum is the statistical discrepancy.

This means that for two consecutive years ((n-1) and n), Laspeyres volume indices are calculated in which the volume indices of components are weighed by their value in year (n-1). The following year, when comparing year n with year (n+1), the volume index used weighs the volume indexes of year (n+1) with relation to year (n), using the values of year (n) as weights, etc., that is to say, that when comparing the value that takes a variable in year (n) in relation to its value in year (p), a chain of Laspeyres indices is constructed in which two consecutive years are compared by means of a Laspeyres index, taking the previous year as a base.

Mathematically, this means:

$$I^{Lenc}vol^{(n/0)} = ((\sum p^{n-1}q^n)/(\sum p^{n-1}q^{n-1})) \times ((\sum p^{n-2}q^{n-1}/\sum p^{n-2}q^{n-2})) \times \ldots \times ((\sum p^0 q^1)/(\sum p^0 q^0))$$

Each one of the factors $((\sum p^{m-1}q^m)/(\sum p^{m-1}q^{m-1}))$ is a Laspeyres index which base is the previous year and is denominated "link" of the "chained index".

This method has the advantage of allowing a permanent update of the system of weights and, therefore, to include products or new structures within the comparisons. Additionally, when changing the base year (which will happen in the future), the growth rates between two years will not change, since in its comparison, the base year does not enter, as it was previously the case.

Nevertheless, the disadvantage of using this type of index is that it does not have the additivity property.

This concretely means that when applying this index to an aggregate of variables, the value at constant prices of this aggregate is not the sum of its components at constant prices: a difference appears, called "statistical discrepancy", which is not an error but reflects the lack of additivity of the formula that is used: usually, this discrepancy is small.

The national accounts referring to the goods and services accounts are initially elaborated at current prices and at previous year's prices; and these accounts are balanced. From these data, for each one of the variables and aggregates of the system, the growth rates of a year in relation to the immediately previous one are deduced. By multiplication of successive annual growth rates of each variable or aggregate, its growth in relation to the base year is established, and multiplying the value of the base year by the derived indices, the values of each variable "at base year prices by linking" is calculated.

In spite of the absence of additivity of the aggregates, the annual growth rates of an aggregate can be expressed as a weighted average of the annual growth rates of its components, in which the weights are proportional to the current values of the components in the previous period.

3. CHANGE IN INVENTORIES

3.1. THEORETICAL FRAMEWORK

The changes in inventories refer to the increase or decrease of the stock of merchandise, for its later use or sale: they include the net increase of the goods that were not sold in the period or are in fabrication process, or the raw material, packaging and other inputs which have not been used in the period and are accumulated as inventories. They are estimated by the difference between the value of the goods that enter the inventories in a given period and the value of the merchandise that leave the inventories, all of them valued at the prices prevailing at the moment they entered or left inventories.

3.2. SOURCES OF INFORMATION AND METHOD OF CALCULATION

3.2.1 General method

The change in inventories is calculated directly using the available sources of information, especially the Annual Manufacturing Survey (EAM) and the Annual Trade Survey (EAC); in the case of bovine cattle, it is estimated from the cattle stock according to its potential use and in that of coffee, using data provided by the National Federation of Coffee Growers. In other products such as petroleum the financial statements of the corporations are used.

The change in inventories, for 2000-2007, is established working the data in annual chronological series and, for part of the inventories, in consistency with the quarterly accounts.

The method used to calculate the change in inventories depends on the information available: value of the opening and closing inventories in the wholesale trade, retail and vehicles surveys; finished products, for cattle; for raw materials and coffee, information in quantities and values or prices.

- **Calculation using the value of the inventories**. In the annual manufacturing and trade surveys (EAM and EAC), the change in inventories was approximated by the difference between the value of the inventories at the end and at the beginning of the period, eliminating the effect of revaluation (nominal holding gains).

$$\Delta I = \text{closing Inventory}[19] - \text{opening Inventory}[20]$$

Where:

ΔI= Change in inventories of the period
Closing Inventory = Corresponds to the value of the final inventories of the period under study
Opening Inventory = Corresponds to the value of the initial inventories of the period under study

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[19] Net of nominal holding gains
[20] Net of nominal holding gains

The nominal holding gains in inventories originates in the increase or decrease of the accounting value of inventories due to changes in prices even though no transaction had taken place (purchase, sale or production of goods and services). The amount of the calculated holding gain relates to the method of valuation and registry of inventories by the companies.

- **Calculation from information on quantities.** When information on quantities is available, the change in inventories at constant prices is obtained by multiplying the change in quantities by the average price of the base year for the accounts at constant prices or by prices of the current year in the accounts at current prices[21]. This method is used in the calculation of the change in inventories of coffee, raw materials and finished products.

  ΔICtes = QΔI x Pr
  ΔIKtes = QΔI x Pr b 2005

ΔICtes=	Change in inventories at current prices.
ΔIKtes=	Change in inventories at 2005 fixed base constant prices.
QΔI=	Change in inventories in quantity
Pr=	Average price of the current year.
Pr b 2005=	Average price of year 2005.

- **Method used in the 2000 base to calculate the change in inventories**. In the 2000 base, although the information from the surveys was consulted, the results derived from the commodity flow balances were favored, which frequently lead to treating the change in inventories as a balancing item and obtain unacceptable implicit levels of change in inventories. Additionally, because of the method of calculation of the accounts that was used, this heading at constant prices implicitly included an important component of adjustment for statistical discrepancy[22].

3.2.2 **Stages for the estimation of the change in inventories**.

In order to calculate the change in inventories the following tasks were carried out. Depending on the available information, all or some of them were actually undertaken.

a. Analysis of consistency of the basic information;

b. Elimination of holding gains and calculation of the change in inventories at constant prices;

c. Calculation of the change in inventories at current prices;

d. Calculation of the change in inventories when information in quantity is available;

e. Disaggregation by type of products.

In case where information on values (EAM and EAC in the components of goods in process and goods for resale) is available, stages a, b, c and e are carried out. When

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[21] In this case, there is no estimation of holding gains
[22] Refer to Chapter 2 of the document thereof

information in quantity is available (finished products and raw materials in EAM), stages a, d and e are carried out.

a.   Analysis of the consistency of the basic information. In a first stage, the information of the surveys is analyzed and criticized; for this purpose the relationship between different variables is reviewed: In the case of EAC, between the costs of sales and sales[23], the opening and closing inventories and the sales; in the case of EAM, between the quantities in inventory at the beginning and end of the period and total production.

The relationship between inventories and sales establishes the capacity of storage of the enterprises (or establishments in the case of the EAM). The extreme cases of 100% indicate a level of storage equal to that of sales, and of 0% that there is no storage capacity at all. The acceptable range of this relationship depends on the activity of the enterprise/establishment; for example, in the case of sales of motor vehicles, it is possible to maintain a high volume of inventories whereas in the case of sales of perishable products, the relation must be significantly low, indicating a high rotation of inventory, as the companies must commercialize their merchandise quickly to avoid incurring in losses of spoiled merchandise.

In the case of manufacture, the process consists in verifying that for the 2000-2007 period, the accumulated relationship of change in inventories against the production does not exceed 1.5%; a higher relationship would show inconsistency in the basic information. This relationship must tend to *0 (zero)* as it is anticipated to find in the change in inventories as much withdrawals as accumulations.

This relationship is equal to the sum of the change in inventories (ΔI) divided by the sum of the production (Pn) of the 2000-2007 period.

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Where:

ΔIn: is the change in inventories of year n.
Pn: corresponds to the national production of year n.

At the general level of the manufacture, this relation did not surpass *1%*; nevertheless, for some products, there were some relationships higher than *2%*, which indicates that the change in inventories tends to show positive results and an ever increasing tendency or negative results and an ever decreasing tendency. Both cases are possible if and only if the accumulation or withdrawal is small from year to year. Otherwise, an unsustainable accumulation of inventories appears, with increasingly smaller sales coupled with an increase in production, which finally would lead any company to bankruptcy.

The consistency analyses were made for commercial or manufacturing establishment on the 2000-2007 series and covering the main industrial and commercial companies; it

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[23] This relationship should present acceptable levels: a 100% value corresponds to no gain whereas 0% value represents the maximum possible gain; an acceptable margin depends on the nature of the commercial activity; for instance, in non-specialized retail trade, this relationship is around 86%, that is, the margin is about 14% which seems reasonable.

makes no sense to separately evaluate the quality of the inventories observing the data on a year to year basis. The abnormal changes in these relationships led to the analysis of the data on a case-by-case basis and to adjust them in the event of error. In most cases, inconsistent data were related with inconsistent measurement units.

b.   Exclusion of the holding gains and calculation of the change in inventories at constant prices. The valuation of the inventories and the calculation of the change in inventories at constant prices was made by deflating the opening and closing inventories. In order to establish the proper deflator to be used and the period to be considered, some companies were consulted, in order to establish the system companies were using to record their inventories, the valuation method and the speed of rotation of the inventories.

As a result of this process of consultation, it was possible to establish that the system most used is the permanent inventory system; the most common valuation method among companies is the LIFO system (Last In, First Out), which indicates that the inventories, at the end of the year, are valued at the cost of the last purchase performed by the establishment; and finally that in average the period of rotation of the inventories is of three months.

As a consequence, the deflators to be used correspond to the average of the last three months of year (*n-1*) of the CPI or of the PPI (depending on the ISIC activity), in the case of the opening inventory, and the average of the three last months of year (*n)* in the case of the closing inventory respectively.

For example, for the ISIC Rev.3. (AC) activity 5133 (Wholesale of footwear), the CPI for footwear is used.

The available data are as follows:

At current prices:
Opening Inventories (Dec. 31, 1999) =   32.144
Closing Inventories (Dec 31, 2000) =   46.114

(in Million pesos)

And considering the information of Table 7:

Table 7. Average of the CPI for footwear October, November and December 1999 and 2000

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Deflator opening inventory   96,90
Deflator closing inventory   99,53

Then, the change in inventories for the wholesale trade of footwear at 2005 constant prices[24] is:

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[24] It should be observed that in the case of the change of inventories, the calculations at constant prices do not follow the principle of chaining

$\Delta I^{(5133)}_{2000} = (46.114/99,53) - (32.144/96,90) = 13.160$ million pesos (of year 2005)

c.   Calculation of the change in inventories at current prices. For the wholesale trade, retail and sale of vehicles activities, and the components of manufacture, in which what is known are inventories in values, the change in inventories at current prices is calculated applying to the change in inventories at 2005 fixed base constant prices, an index of annual average prices, that is, the one that is used to construct the deflator, but in this case it is the annual average of the index that is used.

In the example of footwear, this process is carried out as follows:

Annual Average of CPI for footwear 99,49 in base 100= 2007
For the 2005 base, the Annual Average CPI for footwear is 98,15

 ΔI current prices = 13.160 x 98,15 = 12.917 million pesos

d.   Calculation of the change in inventories when information in quantity is available. In the manufacturing establishments, information in quantity is available for finished goods and raw materials. Once the data have been reviewed for consistency, the change in inventories is calculated as the difference in quantity between the closing and opening inventory, which is valued using the implicit average price derived from the survey, in the base year or the current year, whether the accounts are calculated at constant or current prices. In the case of raw materials, the information on quantities is not directly available, but it is deduced from the information on the quantities acquired, and quantities consumed and the balance of transfers between establishments of the same enterprise, as illustrated in the following example.

Amount acquired in year 2000 =   2.686 kilograms
Amount consumed in year 2000 =   2.281 kilograms
Balance in the amount sent or received year 2000 =   -390 kilograms
QΔI2000 = Change in inventories in quantities for year 2000.

QΔI2000 = 2.686 – 2.281 + (- 390) = 15

e.   Breakdown by type of products. As it was previously mentioned, the information on inventories for trade refers to a total level by 4 digit ISIC(Rev. 3) activity; considering that it is necessary to present results within the national accounts product classification, an approximated correspondence between the ISIC activity classification of trade and the national accounts product classification is used, under the assumption that the total inventories reported by an enterprise in a given activity corresponds to a unique product or a defined list of products of national accounts, as it is shown in the following example (Table 8).

Table 8. Correspondence between the ISIC Rev. 3 AC activity classification and the national accounts product classification

ISIC Rev. 3	Activity description	Product codes national accounts	Product description national accounts
5135	Wholesale of pharmaceutical and medical goods, perfumery, cosmetics and soaps	280202- 280203	Pharmaceutical goods, cleaning preparations, perfumery and cosmetics
5231	Retail of pharmaceutical, medical and odontological goods; perfumery and cosmetics in specialized stores		
5142	Wholesale of paints and related goods	280201	Paints, varnishes and rrelated goods
5242	Retail of paint and related products in specializaed stores		
5153	Wholesale of basic chemical products, plastics and rubber in primary form and chemicals for agricultural use	280101- 280102 280105- 280106	Basic chemical products (organic and inorganic) fertilizers, pesticides, plastics in primary state

source: DANE - DSCN

For the case of finished products and raw materials, since the information is available in the CPC nine digits classification, it is possible to associate each of them to a six digits national accounts product on the basis of the existing correlation table.

3.3. RELATIONSHIP BETWEEN ANNUAL AND QUARTERLY ESTIMATIONS

In trade, the annual and quarterly information were worked in coherent form, taking into consideration the companies that are common between the Survey of Department Stores and Hypermarkets (EGAH) and the Annual Trade Survey (EAC). For these companies the results obtained in the annual and the quarterly exercises were compared, that in conclusion are the same. In Graph 1 the results obtained in the two surveys are compared and Table 9 presents the results of the comparable companies.

It is evident that the companies that participate in both surveys, EGAH and EAC, present the same information both at the monthly and annual level, thus demonstrating that there is consistency in the information they report. At the same time, the department stores and hypermarkets (EGAH) are those that concentrate most of the change in inventories in the total retail trade that is measured by the EAC.

Table 9. Results of the change in inventories from the Annual Trade Survey (EAC) and the Survey of Department Stores and Hypermarkets (EGAH) 2000-2006

Million pesos

Year	2000	2001	2002	2003	2004	2005	2006
EAC	212.365	425.837	118.174	15.669	169.250	116.109	290.054
EGAH	188.915	439.660	106.241	786	195.285	98.827	317.098

Source: DANE - DSCN

Graph 1. Change in inventories results of EAC (retail trade), common companies for EAC and EGAH, and EGAH total 2000-2006
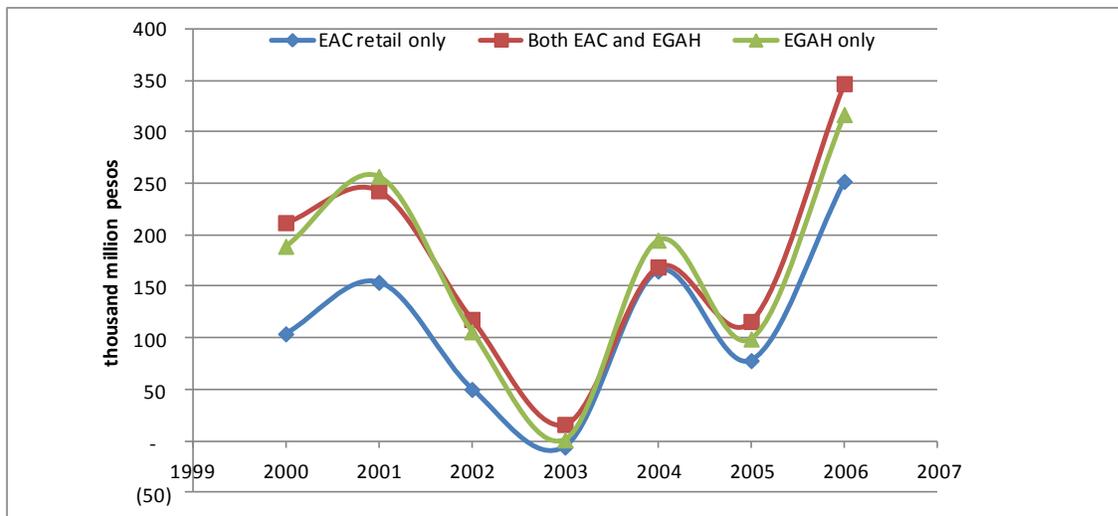
Source: DANE - DSCN.

3.4. PRESENTATION OF RESULTS

Table 10 presents the results obtained from the surveys, by component of the change in inventories.

Table 10 Annual Change in inventories, according to survey and components 2000-2007

								Thousand million pesos
Survey and components	Year							
	2000	2001	2002	2003	2004	2005	2006	2007
Total EAC	331	193	281	100	579	517	1.314	1.439
Trade ΔI	331	193	281	100	579	517	1.314	1.439
Total EAM	826	542	451	560	1.426	1.152	1.800	1.355
ΔI finished goods	165	69	-96	-138	319	509	140	156
ΔI raw materials	478	299	312	417	768	433	1.157	941
ΔI goods in process and for resale	183	174	235	281	339	210	503	258

Source: DANE - DSCN

Table 11 presents the results of the 2000-2007 series, at current prices and table 12 those at constant, fixed base 2005 prices.

3.5 INTEGRATION OF THE RESULTS IN THE SYSTEM OF NATIONAL ACCOUNTS

The change in inventories is part of the demand for products. The results for this variable, obtained from the surveys and other information, are compared with the elements of supply and other elements of the demand for products calculated through other procedures, modifying, in some cases, the estimations that had been made. The reasons for these adjustments correspond to the macroeconomic coherence of the commodity flow

balances. Thus, only those products belonging to the 25 two digits code of national accounts (products of paper, cardboard and their products) and code 2601 (books, printed matters; printed maps and others) were modified with respect to the original proposal, although the proposed level was used as a reference point for the new value of the change in inventories. Once a coherent balance between supply and demand has been reached, the change in inventories to be considered in each year is defined; the data are shown in Table 12.

Table 11. Results: Change in inventories at current prices (2000-2007)

thousand million pesos

Products	Years							
	2000	2001	2002	2003	2004	2005	2006	2007
Total Change in inventories	1.598	1.429	1.291	1.558	1.875	1.889	3.062	2.441
01	-30	-78	-14	42	24	-79	12	63
02	38	90	4	127	-11	-168	-169	-13
03	166	221	438	453	234	359	285	388
06	30	103	101	-21	-61	-27	247	-112
07	249	123	24	196	-159	237	-207	-463
08	49	44	-2	51	42	63	-15	9
09	1	0	1	0	0	1	0	-1
10	32	-10	-12	58	42	-2	31	1
11	26	24	26	63	71	17	47	106
12	7	55	33	-35	20	27	-29	27
13	32	12	16	65	64	31	72	-16
14	43	-10	20	-22	14	-62	65	60
15	-16	-9	-38	15	11	-10	36	16
16	-1	21	-16	0	-16	45	-6	-6
17	168	388	-89	-100	153	-115	56	202
18	-113	13	-99	35	-6	146	-30	61
19	5	-3	15	3	-12	6	-20	1
20	124	28	81	43	113	-39	77	51
21	51	37	31	41	-4	23	71	26
22	104	12	73	55	115	5	145	-72
23	16	-8	10	34	54	31	-12	33
24	12	6	-8	21	-11	-10	0	11
25	69	1	56	10	10	198	22	132
26	49	-14	111	-24	3	5	12	47
27	-36	21	-16	-38	82	27	19	101
28	224	228	286	188	85	376	630	379
29	50	31	75	18	103	132	116	32
30	68	-26	66	82	238	77	270	248
31	96	-6	4	96	151	319	386	307
32	19	41	18	-40	87	-29	114	71
33	85	34	6	26	101	90	236	146
34	-62	21	104	39	268	170	520	467
35	-12	10	-11	15	-2	2	-16	23
36	54	32	12	50	37	10	80	95
37	1	-3	-15	12	35	33	17	21

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Table 12. Results: Change in inventories at 2005 constant prices (2000-2007)

Products	Years							
	2000	2001	2002	2003	2004	2005	2006	2007
Total Change in Inventories	1.616	1.406	811	1.258	1.970	1.889	2.999	2.130
01	-65	-191	-51	132	30	-79	25	65
02	51	120	-131	120	-1	-168	-171	-122
03	181	213	365	366	251	359	291	296
06	56	154	141	-28	-71	-27	237	-165
07	446	257	45	273	-189	237	-187	-472
08	78	91	-18	56	41	63	-9	8
09	0	0	1	1	0	1	0	-1
10	21	-13	3	47	46	-2	30	1
11	30	18	21	54	87	17	47	76
12	-1	67	19	-46	19	27	-35	-13
13	24	10	-3	53	61	31	69	-5
14	-4	-6	40	7	30	-62	60	10
15	-11	-7	-17	15	20	-10	34	17
16	7	22	-16	-9	-7	45	-5	14
17	172	269	-68	-108	158	-115	51	149
18	-162	6	-112	35	-3	146	-27	24
19	5	-1	20	4	-8	6	-17	-2
20	85	31	58	30	109	-39	76	22
21	60	32	58	64	2	23	70	26
22	137	38	67	38	69	5	140	-66
23	13	9	-1	25	41	31	-12	31
24	8	8	-9	20	1	-10	1	14
25	9	10	-11	-4	2	198	24	105
26	32	-8	-14	-16	-13	5	8	54
27	-59	54	-49	-61	58	27	16	323
28	226	178	210	125	108	376	615	218
29	53	9	93	-27	144	132	107	89
30	85	-54	70	70	245	77	262	249
31	88	46	-40	-50	187	319	370	357
32	-20	37	31	11	101	-29	105	61
33	75	-33	17	14	104	90	243	95
34	-76	-3	109	26	203	170	503	508
35	-5	6	-13	12	26	2	-16	12
36	60	20	14	4	85	10	76	128
37	18	18	-19	4	33	33	18	23

DANE-DSCN

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4. HOUSEHOLD FINAL CONSUMPTION EXPENDITURE

4.1. HOUSEHOLD FINAL CONSUMPTION EXPENDITURE (HFCE)

Household final consumption expenditure includes the goods and services acquired by households (by purchases on the market) for the satisfaction of the wants and needs of its members. It also includes the imputed value corresponding to remuneration in kind, received by employees, in the form of food, dwellings and others; the value of the goods produced on own account by households and consumed by its members (consumption of self-produced goods), and the value of owner-occupied dwellings (imputed rentals).

4.2. METHODOLOGY

The starting point to estimate the level of household final consumption expenditure for base year 2005 is to identify the sources of information on demand. Subsequently, the information available on supply, on employment and on the other economic uses of the goods and services, enable adjusting the HFCE. Finally, these two approaches are reconciled in order to obtain an estimation of HFCE that is consistent at macroeconomic level.

4.3. SOURCES OF INFORMATION ON DEMAND

The main source of information for the calculation of HFCE for the 2005 base is the National Household Income and Expenditure Survey (ENIG) 2006-2007. Additionally, statistics on sales of new motor vehicles, information from the Superintendencies (Public Utilities, Health, and Finance) and specific research on consumption of cigarettes and illegal substances were used.

● **National Household Income and Expenditure Survey (ENIG).** ENIG 2006-2007, provides information for all households resident in the national territory. In order to use this information the following adjustments were introduced:

  – **Price Adjustments:** in order to express the values of the survey at 2005 prices, a CPI item was assigned to each one of the products of the survey.

  – **Volume Adjustments:** The survey referred to consumption between 2006 and 2007. In order to reflect the changes in the volume of the items demanded between 2005 and the reference period of the survey, it is assumed that within this short period, the demand *per capita at* constant prices did not undergo significant changes; as a consequence, the change in volume between 2005 and the reference period of the survey was considered equal to the change in population.

Subsequently, a correlation was established between the national accounts product classification and the Classification of Individual Consumption by Purpose (COICOP) used in the survey and a conceptual homologation of the expenses was made. In this process, the following aspects generated the main difficulties:

- The survey groups items by purpose (COICOP), whereas national accounts classify products according to their level of transformation. It is the case, for instance, of "fresh or frozen fish" that in the survey corresponds to a single item while the national accounts classification includes fresh fish within group 05, and the fish that has some level of processing or packaging within group 10.

- Products of different nature might be grouped under the same purpose. This is the case, for instance, of the product "complete medical prescription" included in the survey, which may include a wide range of products as vitamin-added foods, pharmaceutical products, medical and surgical devices, cotton weaved products as bandages and gauzes, among others.

- The survey reports expenses that do not belong to household final consumption expenditure as defined by SNA. The main cases that appeared were as follows :

  ➢ Goods and services that improve the value of the dwelling; in national accounts they represent the noncurrent maintenance of an asset and they are registered as an increase in the value of fixed capital (a part of gross fixed capital formation).

  ➢ The installment payments of credits originated in purchases of goods and services in previous periods (financial transactions).

● **Survey on Sales of new motor vehicles (CVAN)**. In order to calculate the consumption of vehicles the Survey of New Motor Vehicle Sales (CVAN) was used, which provides information on the sales of different types of vehicles (private cars and sport utility vehicles). For year 2005, these sales amounted approximately 3.8 billion pesos, of which almost 0.7 billion correspond to Gross Fixed Capital Formation[25] (GFCF) and the rest to HFCE.

● **Information from auditing and control agencies.** Corporations of different sectors report their financial statements quarterly or annually to the agencies that control and regulate them. In national accounts this information is used to complement the statistics of HFCE in the following cases:

- **Public Utilities.** The Superintendency of Public Utilities has created a Unified System of Information (SUI), in which the invoiced value of all public utilities by type of users: residential (by socioeconomic categories), commercial or industrial, is reported. Household final consumption expenditure includes the consumption of the services and other goods invoiced to residential units. Table 13 presents the value reported by this entity for year 2005:

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[25] GFCF is estimated using the accounting information of the institutional sectors.

Table 13. Estimation of Household Final Consumption Expenditure (HFCE) in Public Utilities based on the reports of the Superintendency of Public Utilities, 2005 base Year 2005

thousand million pesos

Public Utilities	Value
Electricity and related services	5.195
Gas	1.135
Water	1.238
Sewage systems, garbage disposal, sanitation and environmental protection	1.684

Source: DANE, DSCN

- **Lotteries, betting and gambling.** Household final consumption expenditure on lotteries, betting and gambling is equal to the difference between the value of tickets sold less the value of prizes paid; these data were obtained from the reports to the Superintendency of Health. For year 2005, the corresponding value of HFCE was approximately 2.7 billion pesos.

- **Financial Intermediation Services Indirectly Measured (FISIM).** They correspond to financial services not directly invoiced by financial intermediaries, both on deposits including certificates of deposit, as well as on credits received (consumption credit, credit cards and housing credit). Households pay for these services indirectly. They receive for their deposits an interest rate lower than the one that would be used if the services had been directly invoiced, and pay on their credit a higher nominal interest rate than the one that they would have paid, had the services been separately invoiced.

- **Insurance.** The HFCE in insurance services is calculated as the difference between the value of the premiums and the expected value of the claims depending on the kind of insurance that the households contract. For this calculation, the information was provided by the Colombian Federation of Insurance Companies (FASECOLDA).

● **2005 Census, DANE.** Imputed and actual rentals: their value was calculated using information from the 2005 Census and the results of ENIG 2006-2007.[26] The data obtained from the survey came close to the production of rentals of dwellings that was calculated (see chapter 7). The result of the calculation of production of imputed rentals is 19.9 billion pesos, whereas ENIG 2006-2007 reported 18.7 billion.

● **Statistics on consumption of cigarettes and illicit substances.** From a research on the incidence of the consumption of cigarettes and illicit substances carried out in 1998, and more recently the data provided by the National Health Survey for 2007, it was possible to establish the number of consumers and their frequency of consumption; from this information the total number of cigarettes consumed was deduced. This volume, valued at the average price of 2005 gives a household final consumption expenditure

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[26] The value of the rent was obtained from the number of dwellings occupied on own-account and an average value of rent. This average value of rent was derived from the 2005 Census, and corresponds to actual rentals and is detailed by type of dwelling, area, occupancy and stratum (socio economic classification of neighborhoods).

value close to 2 billion pesos. The household final consumption expenditure of illicit substances has a methodology which is similar to that of cigarettes.

4.4. ADJUSTMENTS TO THE VECTOR OF HOUSEHOLD FINAL CONSUMPTION EXPENDITURE

● **Adjustments of demand.** As a result of exploring the different sources of information from the demand side, an estimate for household final consumption expenditure was consolidated; this calculation was made independently and it derived from ENIG and other adjustments to demand.[27] The obtained results are shown in Table 14.

Table 14. Independent calculation. Estimation of household final consumption expenditure by COICOP divisions.
2005

				Thousand million pesos
	Division	ENIG	Demand Adjustment	Estimated HFCE
Total		129.684	16.546	146.230
01	Food and non-alcoholic beverages	27.643	-	27.643
02	Alcoholic beverages, tobacco and narcotics	1.266	1.834	3.100
03	Clothing and footwear	7.695	-	7.695
04	Housing, water, electricity, gas and other fuels	35.655	2.747	38.402
05	Furnishings, household equipment and current household maintenance	5.635	-	5.635
06	Health care	2.841	3.528	6.370
07	Transport	13.435	1.778	15.213
08	Communication	5.526	-	5.526
09	Recreation and culture	5.068	2.423	7.492
10	Education	4.717	-	4.717
11	Restaurants and hotels	12.122	-	12.122
12	Miscellaneous goods and services	8.082	4.227	12.309

Source: DANE - DSCN

Within the total of this independent calculation, 88.7% corresponds to the information directly provided by the ENIG and the remaining 11.3% refers to the adjustments due to other sources of demand.

● **Adjustments of synthesis.** Consequently, additional adjustments were made to give macroeconomic consistency to the national accounts and to complete the synthesis process. These adjustments were originated in the following considerations:

– Expensive foods that are not well reported in the survey; in particular, certain types of oil, fruits, dairy and high quality sweeteners that are consumed by a very small segment of the population.

– Products that are consumed by members of the household who do not respond the survey, especially consumptions made by students outside their home. The pocket money they receive is used mainly for the consumption of carbonated beverages, snacks and other food products.

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[27] The adjustments are taken from the sources described in section 4.3.

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- Goods and services that due to their negative social perception have a high degree of omission in household surveys; as are the cases of alcoholic beverages and the prostitution services.

- Legal and accounting services that are used by a limited number of households and can be taken into consideration within the framework of the compilation of the employment matrix.

Table 15. Adjustments made to each division of household final consumption expenditure. 2005 base
Year 2005

thousand million pesos

	Divisions	HFCE after demand adjustments	Adjustment due to synthesis	HFCE National accounts
	Total	146.230	77.518	223.748
1	Food and non-alcoholic beverages	27.643	14.465	42.107
2	Alcoholic beverages, tobacco and narcotics	3.100	4.697	7.797
3	Clothing and footwear	7.695	7.810	15.505
4	Housing, water, electricity gas and other fuels	38.402	7	38.409
5	Furnishings, household equipment and current household maintenance	5.635	4.693	10.328
6	Health care	6.370	1.146	7.516
7	Transport	15.213	7.755	22.967
8	Communication	5.526	3.696	9.222
9	Recreation and culture	7.492	3.691	11.183
10	Education	4.717	6.379	11.096
11	Restaurants and hotels	12.122	12.149	24.270
12	Miscellaneous goods and services	12.309	11.040	23.349

Source: DANE, DSCN

The adjustments due to synthesis represent 34.5% of the total value of household final consumption expenditure, whereas 65.5% can be explained by the sources of information on demand.

● **Adjustment to supply coming from sources of information on demand.** The ENIG information enabled adjusting supply, in particular for those products for which the value reported in the survey was superior to the value calculated using other sources. The main adjusted items are the following:

- **Service of water supply:** the reported data of the survey for the rural area enabled identifying that the regulating organization does not cover, in its statistics, the value of the water supply of a part of the rural aqueducts. The value of the production reported by the regulatory entity was increased to take into account the rural organizations that do not report the value of their incomes.
- **Meals taken outside the household:** the high degree of informality that characterizes the supply of this service makes its measurement difficult. The survey becomes a good tool to estimate both expenses and production. The

estimated production originally estimated for the 2005 base was adjusted according to the difference found between supply and demand.

– **Footwear:** the expenses in footwear given by the survey showed an underestimation of the supply, which is explained by the non-registered imports and by the informal production of this item.

– **Agricultural products:** the survey allowed estimating the magnitude of two phenomena identified for perishable goods.

  ➢ *Non-commercialized production*: physical production that does not reach the market, either because its price is less than the costs of collection and transportation to the collection centers or because it was not harvested due to particularities of the place of production.

  ➢ *Losses in commercialization*: it corresponds to the production that is lost in trading chain and causes a greater value of the unit trade margins.

  The main adjustments due to the survey with respect to the agricultural statistics were those made for leguminous vegetables, potatoes and tomatoes.

5. EMPLOYMENT MATRIX

5.1. IMPORTANCE

The System of National Accounts 2008 (SNA 2008) recommends the integration of employment data to the description of the productive process in order to establish technical-economic relationships of interest for economic analysis. Among the most important indicators the following ones are worth mentioning: the distribution of national employment by activity, the average output corresponding to employees and independent workers, the average wage per worker and, in general, the definition of indicators that explain the characteristics of production and employment.

From the statistical point of view, the employment data constitute a reference framework for occupational research and for the estimation of the production of small producers that are not observed in the economic surveys. As a matter of fact, there is a lack of statistical information on an important part of the productive units for many reasons among which the following can be mentioned: they are not part of the statistical surveys of the productive activities due to the reduced size of their production, they are not visible to the surveys even to direct canvassing techniques which could be because the activities take place inside the dwellings or simply because they are informal units.

The incorporation of the employment matrix in the analysis of production, for the 2005 base, enabled bringing coherence between the levels of occupation and production, to establish the level of aggregated wages and salaries by economic activity and the productive technical characteristics by institutional sector.

In the different bases of the national accounts of Colombia, partial information on employment has been included in the estimations by sector (1975 and 1994 bases), and more recently, a global treatment has been included (2000 and 2005 bases).

5.2 INFORMATION ON EMPLOYMENT

The data on employment come from sources that consider the supply or the demand for labor. The supply is covered by labor force surveys and the demand by the surveys to enterprises (or establishments) and by means of administrative records.

Labor force surveys include information on the total occupation of the country and its characteristics. They constitute a reference for occupational research with respect to the small producers that are not observed by the surveys applied to productive activities.

The economic surveys and the administrative records enable the estimation of the employment by organized enterprises on a contract basis (either formal or informal). They provide information on the number of jobs in the units covered by the surveys.

● **Continuous labor force surveys:** This research by DANE estimates the number of occupied persons, as well as the number of jobs and their economic characteristics. The survey provides basic information on the structure of the labor force and the characteristics

of the occupied population in terms of: level of education, occupational position, the type and value of income and hours worked, among others. Table16 presents information on the occupied persons and total employment according to main economic activities and to total jobs.[28] Total jobs is the sum of the first and the second job. The first job corresponds to the activity or trade in which the occupied person spends more time, in exchange for aremuneration or other type of income, and the second corresponds to the activity or trade where the occupied person receives a compensation but to which he/she dedicates less time[29]. According to the same table the total number of occupied persons in 2005 reaches 17,04 million and total number of jobs is 18,04 million.

Table 16. Labor supply, by number of occupied persons in first and second jobs, according to main categories of activity
2005

Thousands

NA Activities	Main activities	Occupied first job			Occupied second job			Total number of jobs		
		Total	Employees	Self-employed	Total	Employees	Self-employed	Total	Employees	Self-employed
	Total	17.039	8.620	8.419	1.004	428	576	18.043	9.047	8.996
01-05	Agriculture, farming of animals, fishing, forestry and relataed activities	3.530	1.417	2.113	348	108	240	3.878	1.525	2.353
06-09	Mining, extraction of crude oil	179	97	83	8	2	6	187	99	88
10-36	Manufacturing	2.334	1.380	954	88	40	48	2.422	1.419	1.003
38-40	Electricity, gas, water collection, treatment and supply	101	90	11	4	3	1	105	94	11
41-42	Construcción and civil engineering	822	394	428	29	11	18	852	406	446
43-44	Wholesale and retail trade, repair of motor vehicles, personal and household goods	3.443	1.209	2.234	143	37	106	3.586	1.245	2.341
45	Hotels , restaurants, bars and similar	831	384	447	45	15	30	876	399	476
46-50	Transport, post and telecommunications	1.219	515	703	47	17	30	1.265	532	733
51	Financial intermediation	206	185	21	10	9	1	216	194	22
52-53	Real estate, rentals, biusiness activities	783	404	379	42	19	23	824	423	401
54	Public administration and defence	472	395	77	26	19	7	498	414	84
55-61	Community, social and personal services	3.119	2.149	970	214	148	66	3.334	2.297	1.036

Source: Continuous labor force surveys (ECH).
Note: Data expanded using the demographic projections of 2005 population census.
Original survey data without adjustment between survey (ENH and ECH)

● **Surveys to enterprises and administrative records.** The surveys to enterprises (or establishments) are institutional instruments of DANE. For the analysis of the employment matrix the following surveys were used:

- Annual Manufacturing Survey (EAM). It can be described as a census of the manufacturing establishments with 10 or more occupied persons.

- Annual Services Survey (EAS). It is also a census type research, addressed to enterprises with 40 or more occupied persons.

- Annual Trade Survey (EAC), a census type research addressed to companies with 20 or more occupied persons, and

- Micro establishments Survey, a sample survey covering the establishments with 9 or less occupied persons that reports on a quarter and annual basis.

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[28] Jobs are defined in section 5.3
[29] DANE, *Manual Gran Encuesta Integrada de Hogares*

The Unique System of Information of Personnel in Public Service (SUIP) keeps administrative records providing information on Government employees by categories, for personnel with working contract (formal Government payroll) and on individual service contracts.

The Superintendency of Solidarity Economy reports the occupation generated by the "cooperatives of associated labor[30]" and the Ministry of Defense provides information on employment by the police and by the professional military corps. Table 17 presents the number of reported jobs by the economic surveys and the administrative records.

Table 17. Labor demand. Number of occupied persons.
Economic surveys and administrative records
2005

	Thousands
Source	Jobs
EAM	588
EAS	552
EAC	779
Microestablishments	1.283
SUIP	209
Cooperatives of associated work	459
Armed forces and police	240

Source: DANE from the sources detailed in the table

5.3 EMPLOYMENT MATRIX

The purpose of an employment matrix is to provide information on the occupied population, related in a coherent form to the variables of production, intermediate consumption and remuneration of employees. The matrix also serves to estimate the size of non-observed economic activities, whose statistical and/or accounting data are unavailable.

The employment matrix includes the following sub matrices:

– Number of jobs by activity.

– The number of jobs by occupational status (categories) as follows: employees (including private, government and domestic), and the self-employed which include employers, own-account workers, members of cooperatives of producers and contributing family workers with no remuneration.

– The equivalent employment on a full-time basis and the number of jobs (post) by activity and occupational status.

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[30] A cooperative that provides exclusively labor force to corporations, and assumes all the rights and responsibilities associated with this labor force.

"Employment in SNA 2008 is defined as all persons, both employees and self-employed persons, engaged in some productive activity that falls within the production boundary of the SNA and that is undertaken by a resident institutional unit"[31]

"Employees are persons who, by agreement, work for a resident institutional unit and receive remuneration for their labour. Their remuneration is recorded in the SNA as compensation of employees. The relationship of employer to employee exists when there is an agreement, which may be formal or informal, between the employer and a person, normally entered into voluntarily by both parties, whereby the person works for the employer in return for remuneration in cash or in kind"[32].

"Self-employed persons are persons who are the sole or joint owners of the unincorporated enterprises in which they work, excluding those unincorporated enterprises that are classified as quasi-corporations. Persons who work in unincorporated enterprises are classified as self-employed persons if they are not in paid employment that constitutes their main source of income; in that latter case, they are classified as employees"[33].

The self-employed workers in turn, are divided into employers and own-account workers and they receive mixed income[34] in return for their activities, The owners are defined as all of those occupied persons that manage their own enterprise or practice their profession using the services of one or more remunerated workers[35], and the own-account workers as all of those occupied persons that manage their own enterprise or practice their profession without contracting any employee.

The agreement between an employee and the employer defines a job and each self-employed person has a job[36].

The full-time equivalent employment (FTEE) measures the intensity of the labor factor employed in a productive process. It is defined as the number of full-time equivalent jobs and it is calculated as the total hours worked divided by the annual average of hours worked in a full-time job (according to local standards).

5.4 CONSTRUCTION OF THE EMPLOYMENT MATRIX

For the construction of the employment matrix the following steps were followed:

(i) reclassification of the occupied population according to type of contract and nature of the employment by activity, (ii) calculation of the coefficient of full-time equivalent employment by activity, status (occupational category) and geographic area, (iii) estimation of employment associated with sources that do not report the corresponding occupations and (iv) reconciliation of the supply and the demand for labor.

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[31] SNA 2008 para. 19.19
[32] SNA 2008 para 19.20
[33] SNA 2008 para 19.25
[34] Mixed income is considered to be the accounting balance of the generation of income account of the unincorporated companies, owned by the members of the households (SNA 1993)
[35] *Manual de la Gran Encuesta de Hogares*
[36] SNA 2008para 19.30

● **Reclassification of the occupied population***:* The first step in the construction of the employment matrix consists in analyzing the information provided both by the continuous labor force survey (labor supply) and, by the Economic Surveys (labor demand) in order to reclassify the occupied persons. The treatments were as follows:

   a. **Government workers with individual service contracts**: In the continuous employment survey, these persons are classified as own-account workers (self-employed); the national accounts consider them employees. The reason for this treatment is based on the type of income received by the worker: the self-employed workers receive a mixed income since they provide labor and capital and assume financial risks, whereas the workers for the Government have an explicit contract by means of which they are remunerated on the basis of work done and only provide their labor force, and no capital.

   b. **Workers hired through private employment agencies***:* Following the recommendations of SNA 2008 (para. 19.21 h), these workers must be treated as employees of business service activities (7491) and not of the activity of the establishments they work for, that is to say, they must be treated as if employment was generated by the employment agencies themselves and not by the establishment where they actually develop their activities.

   c. **Workers of cooperatives of associated work:** In conformity with the definition of the International Conference of Labor Statisticians (ICLS), the members of cooperatives supplying labor are to be considered self-employed workers; however, in the base 2005 national accounts, these workers are considered by convention, employees of the non-financial corporations sector within the business services activity. The labor force survey does not have a special classification for this category of workers, so for the time being, the source of information on this type of employment is provided by the administrative records of the Superintendency of Solidarity Economy.

● **Calculation in terms of full-time equivalent employment (FTEE):** The second step in the construction of the employment matrix consisted in calculating the full-time equivalent employment. This is a method for homogenizing the quantity of labor by means of the hours worked, in such a way that part-time workers are converted to an equivalent of full time workers disregarding productivity considerations. From the analysis of the average worked hours for what is considered full-time job, the coefficient of adjustment by activity and occupational status was calculated. Graph 2 shows that in average, in the first employment, private sector workers or employees work 47 hours by week, government employees 41 hours, domestic employees 46 hours, and the day laborers, 43 hours. The self-employed persons work in average 41 hours, employers, 50 hours and contributing family workers 31 hours per week.

Graph 2. Average hours worked per week by occupational status, first and second jobs

2005
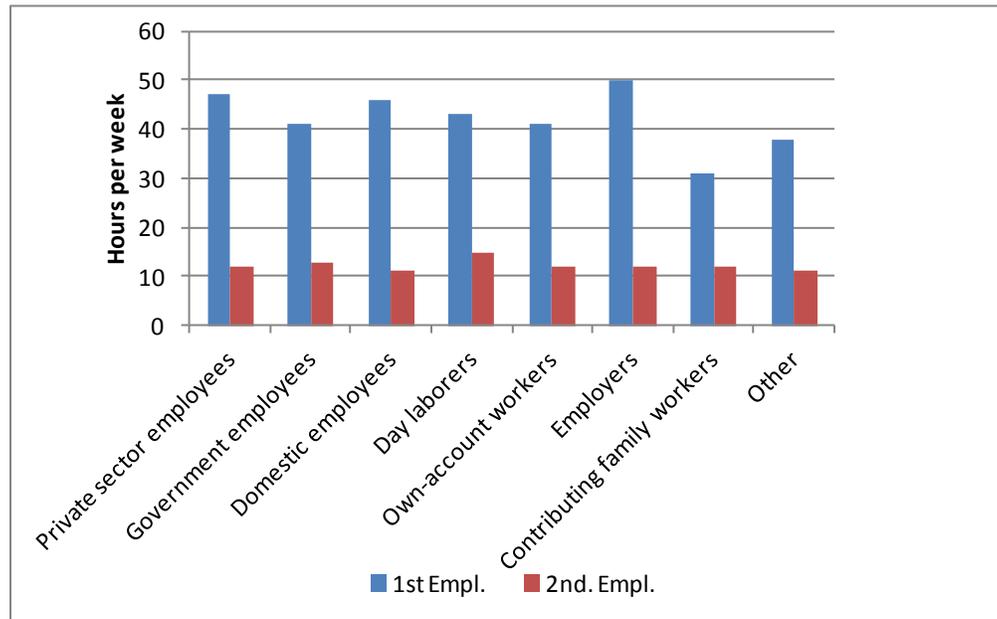
With respect to the economic activity (refer to graph 3), the one that reports the higher average number of hours worked per week is transport (52 hours), followed by electricity, gas and water (47 hours), trade and construction (46 hours), followed by public administration and defense (42 hours); the activity that reports the lowest level of worked hours is community and personal social services (38 hours).

Graph 3. Average number of hours worked by economic activity, first and second jobs 2005
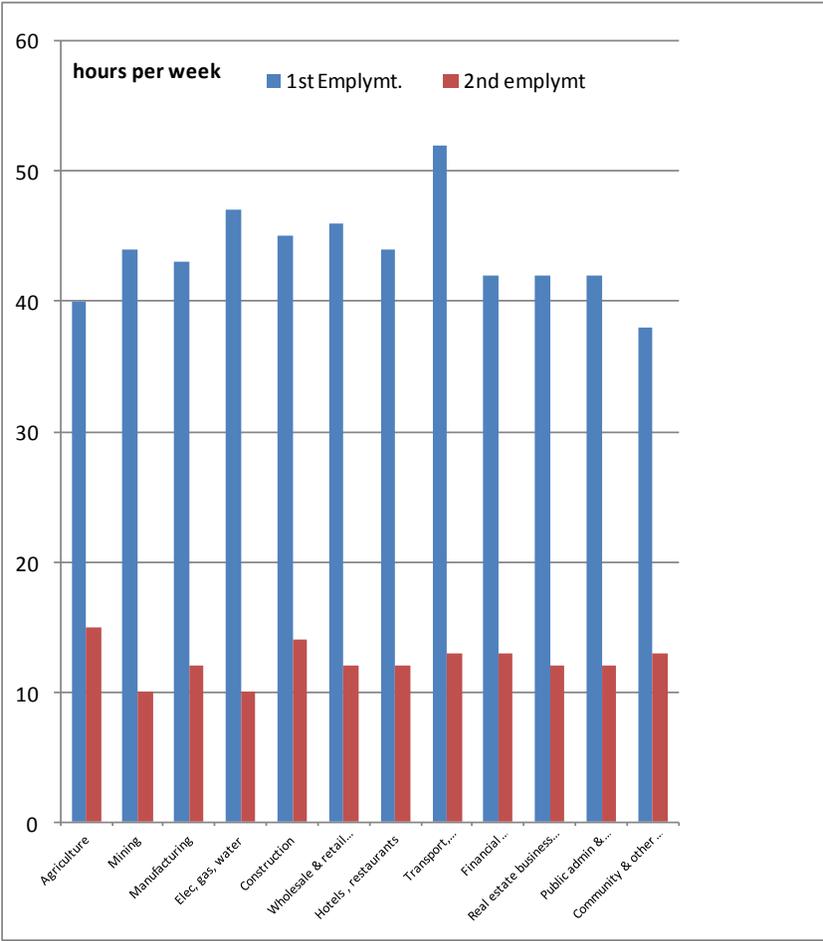
DANE, DIMPE - Continuous Labor force survey (ECH).

The adjustment coefficient for full-time equivalence calculations relates the average of hours actually worked per week and the weekly average of the time normally worked. According to the ICLS, the weekly average of time worked is established by the legislation of each country: In Colombia the legal full-time duration of work is 48 hours per week. Table 18 presents the coefficients of adjustment for the first and second jobs by activity, geographic area and separately for employees and self-employed workers.

Table 18. Coefficients of adjustment, first and second employment, by main economic activity 2005

NA Activities	Activity	First employment				Second employment			
		Urban area		Rural area		Urban area		Rural area	
		Employees	Self-employed	Employees	Self-employed	Employees	Self-employed	Employees	Self-employed
	Total	0,98	0,95	0,86	0,75	0,27	0,27	0,29	0,29
01-05	Agriculture	0,89	0,81	0,86	0,72	0,28	0,28	0,34	0,33
06-09	Mining	-	-	0,80	0,71	-	-	0,22	0,17
10-36	Manufacturing	0,98	0,93	0,81	0,68	0,25	0,30	0,25	0,28
38-40	Electricity, gas, water	1,00	-	0,83	-	0,20	-	0,26	-
41-42	Construction	0,98	0,93	0,92	0,89	0,28	0,16	0,33	0,31
43-44	Wholesale and retail trade	1,00	0,98	0,94	0,87	0,24	0,32	0,30	0,28
45	Hotels & restaurants	1,07	0,88	0,90	0,77	0,22	0,20	0,29	0,33
46-50	Transport, telecom.	1,08	1,09	1,08	1,00	0,24	0,31	0,33	0,37
51	Financial intermediation	0,91	0,96	0,82	0,50	0,28	0,27	0,25	0,42
52-53	Real estate & business act.	0,99	1,01	0,81	0,72	0,27	0,22	0,27	0,18
54	Public admin & defence	1,04	-	0,87	-	0,29	-	0,27	-
55-61	Community & other services	0,85	0,89	0,67	0,59	0,28	0,26	0,29	0,26

Source: DANE - DIMPE ECH and DSCN

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The activities that presented coefficients higher than 1.0 in the employee category and the main job were the following: electricity, gas and water, trade and motor vehicle repair, transport and communications, hotels and restaurants; this means that in these activities, the average number of hours worked is above the legal work load. On the contrary, the activities that presented a smaller coefficient were: social and community services, manufacturing, and agriculture, which means that employment on a part-time basis has relevance in these activities. In general, the category of self-employed workers has a coefficient lower than 1.0 which means that, in average, they work less than the legal work load.

● **Imputation for sources that do not report information on the level of employment.** The third step in the construction of the employment matrix was to impute the level of employment for those sources that provide information on the cost of production and manpower, but do not report the number of employees. In this process, it was necessary to use the indicators of average production and average remuneration obtained from the economic surveys, the adjustments in the level of production of the national accounts and some complementary information from additional sources:

– National Tax and Customs Directorate (DIAN);

– Financial statements collected through the different superintendencies;

– Research in specific sectors;

– Estimations based on chains of production;

– Adjustments in the commodity flow balances.

In order to illustrate how to impute employment to the value of output for the sources that do not report the number of employees, the procedure applied in the case of the manufacturing sector is explained as follows:

Table 19 presents the indicators of average output per capita (in million Colombian pesos) and the average wages (expressed in number of monthly minimum wages- SMMLV) for some industrial activities in 2005. The establishments covered both by the Superintendency of companies and the EAM[37] are identified as large size enterprises (to be subject to the control of the superintendency, the companies must have assets valued at more than 30,000 monthly minimum wages (SMMLV)). The establishments included in the EAM, must employ more than 10 persons; if their assets are between 5,000 and 30,000 SMMLV, they are classified as medium size corporations The information derived from the survey to micro establishments is used in the elaboration of the indicators for small producers.

Table 19 Indicators of average production and wages. Manufacturing sector, 2005

Activity	Establishment size	Average production (million pesos)	Average wage (# of M.M.W.) (1)
Manufacture of other food products n.e.c.	Large	192,3	3,0
	Medium	66,5	1,9
	Micro	30,2	0,8
Preparation and spinning of textile fibres, weaving of textiles, and finishing of textiles produced in other production unit	Large	103,4	2,6
	Medium	68,5	2,0
	Micro	11,9	1,2
Manufacture of wearing apparel, including knitted and crocheted fabrics and articles; dressing and dyeing of fur; manufacture of articles of fur	Large	64	1,8
	Medium	40	1,5
	Micro	15,2	1,0
Tanning and dressing of leather; manufacture of footwear; manufacture of travel accesories, luggage, handbags, saddlery and harnesses	Large	67,9	1,9
	Medium	48	1,6
	Micro	18,5	1,1
Processing of wood, manufacture of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Large	137,1	3,0
	Medium	48	1,7
	Micro	35	1,1
Publishing and printing	Large	136,8	4,6
	Medium	81,9	2,9
	Micro	21,6	1,1
Manufacture of chemicals and chemical products except synthetic rubber in primary forms	Large	302,8	5,4
	Medium	159,8	3,1
	Micro	92,2	1,4
Manufacture of rubber and plastic products including synthetic rubber in primary forms	Large	160,6	3,3
	Medium	76,7	1,9
	Micro	72,9	1,7
Manufacture of furniture	Large	81	2,1
	Medium	53,6	1,6
	Micro	22,8	1,0

(1) Number of minimum monthly wages
Source: Dane- DSCN

Once the indicators were established, the next step was to impute the employment to each one of the sources. Table 20 presents a summary of the employment associated to all the sources of information for the manufacturing sector.

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[37]Refer to *Metodología de la Nueva Base de las Cuentas Nacionales 2000*, Chapter 29, *Sector - Activity matrix.*

Table 20. Employment, by source of information.
Manufacturing activities
2005

		thousand jobs
Source	Direct employment	Imputed employment
Total	763	474
Chains		190
Adjustment in Commodity-Flow Balances		124
DIAN		94
Superintendencies		66
Annual Manufacturing Survey EAM	587	
Microestablishments	176	

Source: DANE - DSCN

● **Comparison of supply and demand for labor.** The last step in the construction of the employment matrix consists in integrating it to the production and the generation of income accounts. This procedure enables identifying the activities with employment (for the supply side) but that do not have production figures associated with them (nothing from the demand side).

To identify this employment, the total supply (from the labor force survey) is compared with the total demand (economic surveys, administrative records and imputed employment). The balance obtained by main activities (refer to Table 21) is denominated "non-observed employment" and corresponds to jobs of very low value added. The statistical system used for the observation of demand does not get to it, and it would remain outside the calculations of national accounts, were the employment matrix not used.

The most interesting example of this comparison between the supply and demand for labor is observed in the sector of trade and motor vehicle repair. The information provided by the labor force survey reports 3,423,000 full-time jobs, whereas the economic surveys complemented with the imputed employment only report around 1,400,000 jobs. The balancing difference between the sources enables determining the economic dimension of the activity of informal trade.

**Table 21. Balance supply and demand for labor, by main activities
2005**

Activity	Labor Supply FTEE[a]			Labor demand Economic surveys, several records			Imputed employment			Balance (non-observed employment)		
	Total	Employees	Self-employed	Total	Employees	Self-employed	Total	Employees	Self-employed	Total	Employees	Self-employed
Total	15.924	8.761	7.164	3.997	3.367	630	8.567	5.231	3.336	3.493	292	3.201
Agriculture	2.819	1.243	1.576				2.819	1.243	1.576			
Mining	214	129	85				156	94	62	57	35	23
Manufacturing	2.068	1.325	743	1.208	1.151	57	174	174		686	0	686
Electricity, gas, water	76	69	7	105	95	10						
Construction	864	425	438				820	404	416	44	21	22
Wholesale and retail trade	3.423	1.255	2.168	1.393	988	405	267	267		1.763		1.763
Hotels & restaurants	850	410	439	197	146	51	578	228	350	74	36	38
Transport, telecom.	1.138	483	654	85	65	20	851	320	531	202	98	103
Financial intermediation	179	163	17	17		17	167	167				
Real estate & business act.	998	651	347	628	628					370	23	347
Public admin & defence	649	649	0	208	208		539	539				
Community & other serv.	2.648	1.958	689	156	86	70	2.195	1.794	401	297	78	218

ie- DSCN

/ data.

The activities in which the phenomenon of the information deficiency is more noticeable, due to the existence of small and individual organizations (informal, home industries), are the following: other food products; textiles, wearing apparel; footwear; leather products, wood and cork, wood furniture; publishing and printing; non-metallic mineral products; furniture, and other manufactured goods. In the case of trade, the problem is associated to a great extent with the existence of street vendors, and in hotels and restaurants with the presence of very small entrepreneurs.

For the economic activities in which non-observed employment is estimated, production and generation of income accounts were constructed, using the indicators of average remuneration, average production and average mixed income derived from the survey of micro- establishments.

5.5 PRESENTATION OF RESULTS

The use of the employment matrix in national accounts is of great importance because it is the unique statistical instrument that enables a more accurate determination of the economic size of the productive activities developed in the very small companies and the informal activities, that is, all those units and establishments that are at the margin or in the "penumbra" of the scope of main statistical operations.

The application of this instrument enabled identifying, for base year 2005, the level of employment corresponding to unobserved jobs, which represents 23% of the total employment generated in the economy.

Table 22 presents the matrix of full-time equivalent employment by main activities, status in employment and geographic area for year 2005.

Table 22. Full-time employment equivalent (FTEE), corresponding to first and second jobs, and by activities
2005

thousand jobs

NA Activities	Activities	First employment				Second employment			
		Urban area		Rural area		Urban area		Rural area	
		Employees	Self-employed	Employees	Self-employed	Employees	Self-employed	Employees	Self-employed
	Total	6.957	5.136	1.504	1.904	83	81	16	43
01 - 05	Agriculture	313	347	920	1.203	1	3	9	22
06 - 09	Mining	83	28	45	56	0	1	-	1
10 - 36	Manufacturing	1.042	615	74	116	9	8	1	4
38 - 40	Electricity, gas, water	64	6	5	1	0	-	-	-
41 - 42	Construction	368	388	54	44	3	4	-	2
43 - 44	Wholesale and retail trade	1.178	1.876	68	260	8	26	1	6
45	Hotels & restaurants	373	354	33	75	3	7	-	3
46 - 50	Transport, telecom.	442	582	38	63	3	7	1	2
51	Financial intermediation	158	16	2	0	2	-	-	-
52 - 53	Real estate & business act.	631	329	15	11	5	7	-	-
54	Public admin & defence	606	-	34	-	8	-	1	-
55 - 61	Community & other services	1.699	595	216	74	39	17	4	2

Source: DANE-DSCN

-: empty

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6. CALCULATION AND DISTRIBUTION OF FINANCIAL INTERMEDIATION SERVICES INDIRECTLY MEASURED (FISIM)

6.1 THEORETICAL FRAMEWORK

The main activity of financial intermediaries consists in borrowing funds from the units that have the capacity of providing them under the form of deposits, bills and bonds, and transforming them into loans and other financial instruments so as to channel them to the units that require them. The financial intermediaries do not charge explicitly for the total value of these services; they do it in an indirect way, paying to the lenders a smaller rate of interest than otherwise would be the case and charging higher rates of interest to those borrowing from them. By these differentials of interests they obtain an important part of their income, with which they cover the expenses of their operations and obtain an operating surplus.

According to this description, a part of the value of the production of financial intermediaries is indirectly measured, and has been denominated Financial Intermediation Services Indirectly Measured (FISIM). This value is estimated by subtracting from the total of property income received on loans, credit cards and other investments (operations on assets), the interests paid on deposits, bills and bonds (operations on liabilities). The revenue obtained from trading shares, bonds and other instruments issued by others is excluded from FISIM "since financial intermediaries when buying or selling titles in the free market cannot control the prices at which they buy or they sell, nor the types of interest which they perceive or pay"[38]. To obtain the total production of financial intermediaries, FISIM must be added to the income obtained by the remuneration of the services of intermediation invoiced and measured directly as commissions, professional fees and other administrative charges.

Table 23 presents, for period 2000-2007, the production of financial intermediaries (financial institutions and intermediaries taking deposits) broken down into invoiced services and FISIM; Table 24 presents the values of FISIM by type of intermediary.

Table 23. Production of Financial Intermediation Services (financial institutions and other intermediaries taking deposits) directly and indirectly measured, according to transaction. 2000-2007

								Thousand million pesos
	Transaction	2000	2001	2002	2003	2004	2005	2006	2007
P.111	Typical ouput	7.727	7.704	8.266	9.582	10.806	12.190	12.632	16.837
	FISIM	5.791	5.481	5.760	6.526	7.577	8.703	9.548	12.163
	Comissions, fees and others	1.936	2.223	2.506	3.056	3.229	3.487	4.084	4.674

Source: Superintendency of Finance, Superintendencia of Solidarity Economy

Estimates: DANE, DSCN.

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[38] Commission of the European Communities (2002) *Report to the Council and the European Parliament on the allocation of FISIM*, volume 8

Table 24. Production of Financial Intermediation Services Indirectly Measured (FISIM), by type of intermediary
2000-2008

Type of Intermediary	2000	2001	2002	2003	2004	2005	2006	2007	2008
Depository corporations	5.027	4.773	4.915	5.550	6.472	7.457	8.217	10.615	14.063
Other financial intermediaries (i) [a]	191	108	181	204	238	274	302	391	805
Quarterly FISIM [b]	5.218	4.880	5.096	5.754	6.711	7.731	8.519	11.005	14.868
Other financial intermediaries(ii) [c]	573	600	664	772	866	971	1.029	1.158	1.219
Annual FISIM [d]	5.791	5.481	5.760	6.526	7.577	8.703	9.548	12.163	16.087

Source: Superintendency of Finance (SFC), Superintendency of Solidarity Economy (SES)

[a] Information from intermediaries specialized in leasing - SFC

[b] Based on a quarterly sample of financial intermediaries controlled by SFC, who provide monthly reports

[c] Information from savings and credit cooperatives, and from employees funds among others - SES

[d] Annually all the financial intermediaries controlled by SFC and SES are analized.The latter provides information annually. This is the reason why the levels of quarterly and annual FISIM differ.

Estimates: DANE – DSCN

- **Allocation of FISIM.** FISIM that is produced is considered to be used by the agents who make transactions with financial intermediaries through credits (commercial, mortgages, consumption) or by means of deposits and other investments. According to SNA 93, para. 6.125: "… Whenever the production of output is recorded in the system, the use of that output must be explicitly accounted for elsewhere in the system. Hence, FISIM must be recorded as being disposed of in one or more of the following ways: - as intermediate consumption by enterprises, as final consumption by households, or as exports to non-residents."

- **Imported FISIM.** The financial institutions that produce FISIM do not need to be resident and neither do their clients; therefore, it is possible to have imports and exports of those services. Non-resident financial intermediaries produce FISIM through the operations conducted with resident units, for example, when granting loans to the government or to corporations (financial and non-financial).

- **Supply and demand of FISIM:** As it is done with other products, the commodity flow balance of FISIM has to be established. The supply elements are production and imports and their use the different components of demand.

$$P + M = CI + HFCE + X$$

Where:
P: Production
M: Imports
CI: Intermediate consumption
HFCE: Household final consumption expenditure
X: Exports

- **Impact of FISIM:** The distribution of FISIM to the users has different effects on the national accounts aggregates: it modifies Gross Domestic Product insofar as it increases

final consumption of households, that of non-profit institutions serving households (NPISHs) and that of government as well as the balance with the rest of the world (X-M). For producing activities and sectors, FISIM enters as a cost of production (intermediate consumption), and therefore, decreases their value added. In the distribution of income accounts, the amount of interests received and paid are reduced, as part of the nominal interest paid is recorded as cost of the intermediation service and only the difference with this intermediation cost is recorded as interest.

- **FISIM paid by lenders or by borrowers:** FISIM originates in operations with borrowers (loans and other investments) and with lenders (deposits and certificates). A breakdown is done between those two categories through a reference rate considered as pure interest charged for the intermediation, "…it should contain no service element and reflects the risk and maturity structure of deposits and loans. The rate prevailing for inter-bank borrowing and lending may be a suitable choice as a reference rate" (SNA 2008, para. A3.25).

FISIM generated in operations with lenders and with borrowers are calculated by applying the reference rate to the balances both of loans and of deposits of the financial institutions. The difference between the interests gained on loans and the interest calculated using the reference rate (FISIM paid by borrowers) and the difference between the interests calculated using the reference rate and the interests paid on deposits (FISIM paid by lenders) constitutes total FISIM. This method of estimation is called the reference rate method, in which FISIM is calculated according to the following formula (SCN 2008 para. A.3.24):

$$(r_L - rr) \, y_L + (rr - r_D) \, y_D$$

Where:
r_L = Interest rate received from borrowers
r_D = Interest rate paid to lenders
y_L = balance of corresponding assets
y_D = Balance of corresponding liabilities
rr = Reference rate of interest

6.2 METHODOLOGY OF CALCULATION AND ALLOCATION OF FISIM

6.2.1 Information used: In order to calculate FISIM and to distribute it among users, the information used is that of the balances of assets and liabilities of the financial intermediaries classified according to the counterpart sectors (government, financial corporations, non-financial corporations, households and rest of the world) and the interests received and paid by these intermediaries. Additionally, the financial statements collected by the Superintendencies of Finance and Solidarity Economy were used.

6.2.2 Methodology of calculation: In order to calculate FISIM and to assign it to users the following tasks were performed:

- Choice of the reference rate
- Calculation of FISIM paid by lenders and by borrowers
- Allocation of FISIM among users

- Distribution of the intermediate consumption by activity

   a. **Choice of the reference rate:** The recommendation is to use as reference rate, either the interbank interest rate, or the rate received by the Central Bank, or an average market rate, or any other rate of generalized use. For the 2005 base, the <u>midpoint rate</u> (MPR) was chosen as the implicit reference rate, which is calculated quarterly as the relationship between the interests received plus the interests paid by the financial intermediaries and the balances of loans plus the balances of deposits[39].

$$(r_L + r_D)/(y_L + y_D)$$

   In this methodology, financial instruments with different interest rates (received or paid) are grouped together, though credit cards or consumption credits for instance can be more expensive than microcredits. Nevertheless, the estimations made by type of financial instrument might lead in some cases to inconsistent results. The reason is, on the one hand, that the available information presents few levels of classification; and on the other, that the financial market does not present a sufficient level of specialization that would make the detailed estimations more relevant.

   For year 2005, and on the basis of the values of loans, deposits and interest, the calculated reference midpoint rate $r_{(MPR)}$ is 10,56%, according to the following data:

   Data in thousand million $
Loans	$ 80.190
Interests received	$ 11.488
Deposits	$ 64.209
Interests paid	$ 3.756

   Reference interest rate = (($11.488 + $3.756)/($80.190 + $64.209)) * 100
   $r_{(MPR)}$ = 10,56%

   b. **Calculation of FISIM paid by lenders and by borrowers**: In order to calculate FISIM paid by lenders and by borrowers, the midpoint reference rate is applied to the sum of the quarterly averages of loans and deposits of the monetary corporations. The difference between the interest paid to the intermediaries by the borrowers and that calculated applying the reference rate (FISIM by borrowers) plus the difference between the interest calculated applying the reference rate and the interest actually paid to the depositors (FISIM by lenders) represents the estimated income corresponding to total FISIM.

   FISIM paid by borrowers:
Loans	$80.190
Interests received	$11.488

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[39] Some exercises were carried out in which FISIM was calculated using the interbank interest rate, and the results obtained were very similar to those using MPR, estimated as the average interest rate of the loans and deposits of financial intermediaries [MPR=(interests received +interests paid)/(stock of loans+ stock of deposits)]

r $_{(MPR)}$ =   10,56%
r =   14,33% = 100*11.488/80.190
Interests corresponding to the reference rate:
$7.622 = ((($80.190 + $64.209) /2) * 10,56%)
Margin on assets =   14,33% - 10,56% = 3,77%
FISIM paid by borrowers   = $11.488 - $7.622 = $3.866

FISIM paid by lenders:
Deposits $64.209
Interests paid $ 3.756
r $_{(MPR)}$ =   10,56%
r =   5,85% = 100*3.756/64.209
Interests corresponding to the reference rate:
$7.622 = ((($80.190 + $64.209) /2) * 10,56%)
Margins on liabilities =   10,56% - 5,85% = 4,71%
FISIM paid by lenders= $7.622 - $3.756 = $3.866

Total FISIM =   **$3.866 + $3.866 = $7.731**
(by lenders and by borrowers)

Where:
r: Implicit actual interest rate
r$_{(MPR)}$:   Reference midpoint interest rate

Table 25 presents the calculated data of FISIM paid by lenders and by borrowers[40].

Table 25. Annual Financial Intermediation Services Indirectly Measured (FISIM) with lenders or borrowers. (Method of the reference rate)
2000-2008

thousand million pesos

Variables	Years								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Loans balances	49.301	50.726	53.117	59.113	68.541	80.190	96.545	124.434	150.593
Deposits balances	31.484	38.315	42.802	46.461	53.039	64.209	74.927	91.652	107.661
Interests received	7.555	7.740	8.303	8.657	10.046	11.488	12.328	16.395	22.856
Interests paid	2.337	2.860	3.207	2.903	3.335	3.756	3.809	5.390	7.988
FISIM total (received-paid)	5.218	4.880	5.096	5.754	6.711	7.731	8.519	11.005	14.868
Interest Rate (Reference Midpoint Rate)	12,2%	11,9%	12,0%	10,9%	11,0%	10,6%	9,4%	10,1%	11,9%
Interests of reference	4.946	5.300	5.755	5.780	6.690	7.622	8.069	10.893	15.422
FISIM by borrowers [a]	2.609	2.440	2.548	2.877	3.355	3.866	4.260	5.503	7.434
FISIM by lenders [b]	2.609	2.440	2.548	2.877	3.355	3.866	4.260	5.503	7.434
FISIM total (by lenders and by borrowers)	5.218	4.880	5.096	5.754	6.711	7.731	8.519	11.005	14.868

Source: Financial statements of financial corporations controlled by the Superintendency of Finance

Estimates: DANE - DSCN

[a] Difference between interests received and the reference interests

[b] Difference between the reference interests and interests paid

– **Imports and exports of FISIM**. In order to calculate FISIM on imports and exports, information of the Balance of Payments (interest) and of the International Investment Position of the Central Bank was used. In the case of imports, services paid on loans of non-resident intermediaries to all the resident sectors are considered

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[40] In Tables 24 and 27, the data correspond to quarterly estimations.

(supplementary interest); whereas for the exports, the services provided by the resident financial intermediaries through loans to non-residents (supplementary interest) are considered. The six months LIBOR rate was used as reference interest rate, as it is an international rate with ample commercial use, at which a great number of transactions of the country with the external financial sector is made. Table 26 shows the values of imported and exported FISIM.

Table 26. Imports and exports of Financial Intermediation Services Indirectly Measured (FISIM), 2000 – 2008

thousand million pesos

FISIM	Years								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Exports	16	22	18	26	20	25	38	51	75
Imports	561	1.719	2.183	2.586	1.967	1.096	614	705	1.845
Reference rate (LIBOR)	6,7%	3,7%	1,9%	1,2%	1,8%	3,8%	5,3%	5,3%	3,0%

Source: Information from Balance of Payments and from International Investment Position from the Central Bank

Estimates: DANE - DSCN

c. Allocation of FISIM among users: FISIM was distributed according to the purpose of each financial instrument and its counterpart sector. The intermediation services generated by the commercial portfolio were considered as intermediate consumption of the productive sectors, such as the non financial corporations, the government or households as producers; whereas those associated with credit cards or those of consumption loan were classified as final consumption expenditure of households. Table 27 illustrates how FISIM was assigned among transactions on assets and on liabilities.

Table 27. Purpose of the financial instruments on assets and on liabilities

Balances on financial instruments		Purpose
Operations on assets	Consumption credit and leasing	Final consumption
	Trade credit and leasing	Intermediate consumption
	Microcredit credit and leasing	Intermediate consumption
	Housing credit	Intermediate consumption
	Discount operations	Intermediate consumption
	Factoring operations	Intermediate consumption
	Credit cards	Intermediate consumption / Final consumption
	Overdrafts	Intermediate consumption / Final consumption
	Credits paid by the Rest of the world	Exports
Operations on liabilities	Savings deposits (Current account deposits, savings and others)	Intermediate consumption / Final consumption
	Term deposits certificates (CDT)	Intermediate consumption / Final consumption
	Term savings Certificates (CDAT)	Intermediate consumption / Final consumption
	Imports	Imports / Intermediate consumption

Source: DANE, DSCN

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Once FISIM has been calculated, it has to be assigned to the sectors that use them: financial corporations, non-financial corporations, government, households and rest of the world. For this purpose, the following information was used: information on government, published information on the commercial portfolio, specialized information on the portfolio of outstanding housing mortgages. In the case of households, they manage a great variety of financial instruments to carry out their purposes of consumption and production. They incur in FISIM payments both as final consumption and as intermediate consumption, as follows:

– Intermediate consumption for the real or imputed production of rentals of dwellings assigned to the real estate activity, in their capacity as owners;

– Intermediate consumption for the production of goods and services in different activities, in their capacity as unincorporated enterprises;

– Final consumption of households in their capacity as consumers.

Table 28 presents FISIM paid by lenders and borrowers and its distribution by purpose and institutional sector.

Table 28. Financial Intermediation Services Indirectly Measured (FISIM), according to use and institutional sector
2000-2008^P

thousand million pesos

FISIM	Years								
	2000	2001	2002	2003	2004	2005	2006	2007	2008^P
Distribution of FISIM by lenders	2.609	2.440	2.548	2.877	3.355	3.866	4.260	5.503	7.434
Intermediate consumption	2.254	2.083	2.199	2.498	2.919	3.355	3.637	4.516	5.961
Goverment IC	236	233	245	282	322	356	381	482	560
Financial IC	218	256	284	326	325	301	329	374	457
Corporations IC	600	510	510	587	766	946	1.054	1.381	1.876
Unincorporated enterprises and households IC	438	375	376	434	561	694	772	1.010	1.465
Household mortgage IC	762	708	784	869	945	1.058	1.101	1.269	1.603
Household final consumption expenditure	338	335	331	353	415	487	585	936	1.397
Exports	16	22	18	26	20	25	38	51	75
Distribution of FISIM by borrowers	2.609	2.440	2.548	2.877	3.355	3.866	4.260	5.503	7.434
Intermediate consumption	1.188	1.028	1.003	1.093	1.134	1.150	1.190	1.639	2.224
Goverment IC	485	414	396	425	432	421	426	597	829
Financial IC	143	123	120	131	136	138	143	197	267
Corporations IC	561	490	487	536	566	590	621	845	1.128
Household final consumption expenditure	1.421	1.412	1.545	1.785	2.221	2.716	3.070	3.864	5.210
Distribution of imported FISIM	561	1.719	2.183	2.586	1.967	1.096	614	705	1.845
Imports financial sector (SFC)	57	158	91	89	41	12	17	19	69
Goverment imports (IIP-BoP)	139	458	650	934	843	479	256	290	757
Corporations imports (IIP-BoP)	364	1.103	1.442	1.563	1.083	605	341	396	1.019

Source: Financial statements Superintendency of Finance and Superintendency of Solidarity Economy

Calculations: DANE - DSCN

^{P}: preliminary

– **Commodity flow balance of FISIM**. Once produced and imported FISIM (supply) and consumed and exported FISIM (demand) have been estimated, the commodity flow balance is established; the results of the series are shown in Table 29.

The total supply of FISIM for year 2005 was 9.799 thousand million pesos (national production: 8.703 thousand million pesos, of which 3.351 paid by lenders, and 3.352 by borrowers; and imports, 1.096 thousand million pesos).

The demand of FISIM by producing sectors was 6.086 thousand million pesos, household final consumption expenditure 3.688 while the exported services of intermediation amounted to 25 thousand million pesos.

Table 29. Commodity flow balances of Financial Intermediation Services Indirectly Measured (FISIM), at basic prices, 2000-2008[p]

Thousand million pesos

FISIM	Years								
	2000	2001	2002	2003	2004	2005	2006	2007	2008p
Total supply	6.351	7.200	7.943	9.112	9.544	9.799	10.163	12.868	17.932
Imports	561	1.719	2.183	2.586	1.967	1.096	614	705	1.845
National product	5.791	5.481	5.760	6.526	7.577	8.703	9.548	12.163	16.087
Total demand	6.351	7.200	7.943	9.112	9.544	9.799	10.163	12.868	17.932
Intermediate consumption	4.290	5.130	5.717	6.562	6.454	6.086	5.956	7.439	10.640
Financial corporations	*201*	*284*	*215*	*225*	*179*	*151*	*160*	*216*	*337*
Central Bank	1	3	4	5	2	1	0	0	1
Depositary corporations	57	158	91	89	41	12	17	19	69
Other financial auxiliaries	143	123	120	131	136	138	143	197	267
Government	*983*	*1.206*	*1.392*	*1.586*	*1.492*	*1.088*	*850*	*1.380*	*2.245*
Central Government	618	823	1.005	1.138	1.105	744	530	804	1.425
Local Goverment	365	383	388	447	387	344	320	576	820
Non financial corporations	*2.055*	*2.628*	*2.987*	*3.493*	*3.401*	*3.299*	*3.323*	*3.988*	*5.837*
Households	*1.050*	*1.012*	*1.122*	*1.259*	*1.381*	*1.547*	*1.622*	*1.855*	*2.222*
Unincorporated corporations	2	3	6	4	3	3	6	7	9
Dwelling owners (mortgages)	1.048	1.009	1.116	1.255	1.378	1.544	1.616	1.848	2.213
Final consumption	2.045	2.047	2.208	2.523	3.070	3.688	4.169	5.378	7.217
Households	*2.045*	*2.047*	*2.208*	*2.523*	*3.070*	*3.688*	*4.169*	*5.378*	*7.217*
Exports	*16*	*22*	*18*	*26*	*20*	*25*	*38*	*51*	*75*

Source: Financial statements Superintendency of Finance and Superintendency of Solidarity Economy.

[p]: preliminary

d. **Distribution of intermediate consumption by activity**: FISIM used as intermediate consumption was assigned among activities[41] taking into account two main criteria: The level of total production by activity, complemented and put in coherence with the second criterion: information of the 5,000 major debtors of the financial system by activity (ISIC), provided by the Superintendency of Finance.

On the other hand, FISIM consumed by the sub-sectors of government and the financial corporations (except intermediaries) were assigned directly to the corresponding activities, given their specificity (activities 51 and 54). FISIM corresponding to individual corporations and mortgage loans (households as home owners) were assigned to the real estate and rentals of dwellings services (activity 52). The results obtained for year 2005 appear in Table 30.

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[41] With the purpose of distributing FISIM among activities, different exercises were made in order to bypass the lack of direct information on interests received and paid by the different activities

Table 30. Distribution of Financial Intermediation Services Indirectly Measured (FISIM), by activity, 2005

	Activity	Value	Percent
		Thousand million pesos	
	Total	6,086	100
1	Specialized production of coffee	21	0.3
2	Agriculture, related service activities except production of coffee	105	1.7
3	Farming of animals and hunting	96	1.6
4	Forestry, logging and related service activities	6	0.1
5	Fishing, operation of fish hatcheries and fish farms;	6	0.1
6	Mining of coal and lignite; extraction of peat	36	0.6
7	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	98	1.6
8	Mining of metal ores	19	0.3
9	Quarrying of non-metallic minerals	10	0.2
10	Production, processing and preservation of meat and fish	76	1.2
11	Manufacture of vegetable and animal oils and fats	19	0.3
12	Manufacture of dairy products	32	0.5
13	Manufacture of grain mill products, starches, bakery, noodles and similar	66	1.1
14	Manufacture of coffee products	27	0.4
15	Sugar mills and refineries	13	0.2
16	Manufacture of cocoa, chocolate and sugar confectionery	10	0.2
17	Manufacture of other food products n.e.c.	16	0.3
18	Manufacture of beverages	40	0.7
19	Manufacture of tobacco products	3	0.1
20	Preparation and spinning of textile fibres, weaving of textiles, and finishing of them	17	0.3
21	Manufacture of other textiles	8	0.1
22	Manufacture of wearing apparel, knitted and crocheted fabrics, dyeing and manufacture of fur articles	59	1.0
23	Tanning and dressing of leather; manufacture of footwear and travel accessories	16	0.3
24	Processing of wood, manufacture of products of wood and cork, except furniture	10	0.2
25	Manufacture of paper, paperboard and paper and paperboard products	34	0.6
26	Publishing and printing	28	0.5
27	Manufacture of coke, refined petroleum products and nuclear fuel	74	1.2
28	Manufacture of chemicals and chemical products except synthetic rubber [1]	116	1.9
29	Manufacture of rubber and plastic products including synthetic rubber [1]	40	0.7
30	Manufacture of other non-metallic mineral products	50	0.8
31	Manufacture of basic metallurgical products and of fabricated metal products, except machinery and equipment	65	1.1
32	Manufacture of machinery and equipment n.e.c.	17	0.3
33	Manufacture of office, accounting and computing machinery, electrical machinery, radio, television and communication equipment, medical, precision and optical instruments, watches and clocks and apparatus n.e.c	15	0.2

Table 30. Distribution of Financial Intermediation Services Indirectly Measured (FISIM), by activity (2005)
(cont.)

		Thousand million pesos	
	Activity	Value	Percent
34	Manufacture of motor vehicles, trailers, semi-trailers and other transport equipment	36	0,6
35	Manufacture of furniture;	17	0,3
36	Other manufacturing n.e.c.	14	0,2
37	Recycling	-	-
38	Generation, transmission and distribution of electricity	92	1,5
39	Manufacture of gas including from coke oven products; distribution of gaseous fuels through mains	14	0,2
40	Water collection, treatment and supply; Steam and hot water supply	19	0,3
41	Building construction (for residential and non-residential use), including land preparation	138	2,3
42	Civil works and infrastructure construction, including the rental of equipment with operator	119	2,0
43	Wholesale and retail trade	389	6,4
44	Repair of motor vehicles, motorcycles and personal and household goods	47	0,8
45	Hotels, restaurants, bars and similar establishments	136	2,2
46	Land transport; transport via pipelines	133	2,2
47	Water transport	5	0,1
48	Air transport	21	0,3
49	Supporting and auxiliary transport activities; activities of travel agencies	20	0,3
50	Post and telecommunications	94	1,5
51	Financial intermediation, including insurance, pension and severance funds	451	7,4
52	Real estate activities and rental of dwellings	1.544	25,4
53	Renting and business activities	175	2,9
54	Public administration and defense; compulsory social security	1.041	17,1
55	Market educational services	57	0,9
56	Non-market educational services	75	1,2
57	Market health and social work	113	1,9
58	Sewage and refuse disposal, sanitation and similar environmental services	18	0,3
59	Market activities in community, social and personal services, entertainment	58	0,9
60	Non-market activities in community, social and personal services, entertainment	13	0,2
61	Private households with employed persons	-	-

Source: Financial Statements Superintendency of Finance and Superintendency of Solidarity Economy.
Estimates: DANE - DSCN

6.2.3 Calculation of FISIM at constant prices. The calculation of FISIM, both at current and at constant prices, derives from conventions and arbitrary elements. "These conventions make measurement at constant prices even more problematic, specially where quality change is considered an important factor" (Eurostat, Handbook on Price and Volume Measures in National accounting, para 4.9, 2001).

Since there is neither price nor directly observable amount that would be really representative of FISIM production and because of the non-existence of any precise

method for the deflation of FISIM[42], it is recommended to use methods based on detailed indicators of production or on the application of margins of interest of the reference period to the balances of loans and deposits (expressed at prices of the reference period). The first method requires precise information on prices and quantities by financial instrument, which actually is problematic and complicated; while the second requires the use of a price index showing the real change in the value of money, that although not actually possible, can be approximated by a general price index, since it measures the change in the purchasing power of the currency.

The estimation of FISIM at constant prices in the new 2005 base came close to the second recommended practice. The balances of loans and deposits were deflated by a general price index excluding food and fuels, in order to reduce the distortions caused by the changes in the prices of petroleum and *commodities*.

The margins of interest applied to the balances were estimated as the difference between the implicit rate on assets[43] and the midpoint rate (FISIM constant assets), and between the midpoint rate and the implicit rate on liabilities[44] (FISIM constant liabilities).

The other allocations by purpose, economic activity and institutional sector followed the methodological framework defined for the calculation of FISIM at current prices. Results of constant FISIM at basic prices of 2005 year appear in Table 31.

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[42] *Eurostat Handbook on Price and Volume Measures in National Accounts* describes possible methods to be used for deflating as follows: Method A: most recommended methods; Method B: methods that can be used if method A cannot be applied; Method C: methods that should not be used. The most recommended ones are those that include precise and sufficient information on the prices and the quantities of each product (para. 4.9 and following)

[43] Total interests received by loans over total balances of loans.

[44] Total interests paid by deposits over total balances of deposits.

Table 31. Supply and use of Financial Intermediation Services Indirectly Measured (FISIM) at previous year prices,
2000-2008

Thousand million pesos

FISIM	Years								
	2000	2001	2002	2003	2004	2005	2006	2007	2008ᵖ
Total supply	5.912	5.399	7.267	8.636	9.534	10.053	11.335	12.663	14.867
Imports	539	582	1.776	2.350	2.192	1.591	1.064	611	721
Production	5.373	4.818	5.491	6.286	7.341	8.462	10.271	12.052	14.146
Total demand	5.912	5.399	7.267	8.636	9.534	10.053	11.335	12.663	14.867
Intermediate consumption	4.067	3.640	5.095	6.175	6.537	6.410	6.843	7.336	8.479
Financial corporations	*168*	*170*	*263*	*199*	*202*	*186*	*167*	*211*	*249*
Central Bank	1	1	3	4	2	2	1	0	0
Depositary corporations	18	46	146	72	71	50	15	20	19
Other financial auxiliaries	149	124	113	123	129	135	152	191	230
Government	*1.014*	*898*	*1.190*	*1.467*	*1.551*	*1.269*	*1.084*	*1.322*	*1.592*
Central Government	637	553	843	1.047	1.172	919	731	759	910
Local Goverment	377	344	347	420	379	350	352	564	682
Non financial corporations	2.110	1.879	2.533	3.253	3.407	3.439	3.831	3.945	4.628
Households	*775*	*693*	*1.109*	*1.256*	*1.377*	*1.516*	*1.761*	*1.857*	*2.010*
Unincorporated corporations	2	3	5	4	3	3	7	7	8
Dwelling owners (mortgages)	772	690	1.104	1.252	1.374	1.512	1.754	1.850	2.002
Final consumption	1.828	1.738	2.156	2.436	2.977	3.620	4.451	5.276	6.323
Households	*1.828*	*1.738*	*2.156*	*2.436*	*2.977*	*3.620*	*4.451*	*5.276*	*6.323*
Exports	17	22	16	25	19	24	41	51	66

Source: Financial statements Superintendency of Finance and Superintendency of Solidarity Economy.

ᵖ: preliminary

Calculations: DANE - DSCN

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6.3 Main methodological changes as compared to the 2000 base

FISIM considered in the new 2005 base incorporate substantial changes with respect to the measurements in the 2000 base. The modifications appear essentially in conceptual, methodological and statistical aspects; therefore, the results differ to a great extent from those found in the 2000 base, both in levels, structures of distribution and growth rates.

The main differences that explain the changes in the results between the two bases refer to the information used on the balances of assets and liabilities, the elimination of bonds in the calculation of FISIM in the 2005 base, the method used to calculate FISIM at constant prices and the distribution of FISIM by activity and sector. As far as the reference rate is

concerned, although it was modified, as the interbank rate was used in the 2000 base and the midpoint rate in the 2005 base, this change did not generate significant modifications.

In the assets and liabilities by class of instrument, the information that was used is the one published by the Superintendency of Finance on a quarterly basis and that presents results classified by economic activity or according to the type of indebtedness between the public and the private sectors. This information was complemented with data on the government external debt, that of corporations and of registered financial institutions coming from bulletins of the Central Bank. In the 2000 base, aggregated series were used that did not register the short term movement of assets and liabilities of the sectors.

7. PRODUCTION OF RENTALS OF DWELLINGS

The rentals of dwellings are part of the activity named "real estate services and rental of dwellings"; it includes rentals of residential real estate on own account and those rendered to third parties. The former relates to rentals imputed to dwellings occupied by their owners and the latter to the actual payments for dwellings rented to third parties.

The production of the sub-sector is calculated as the product between the stock of dwellings and the average value of rentals. The estimation is made for all departments at the level of grouped population and rural area, by type of occupancy (own-account, actually rented and other[45]), by stratum, and by type of dwelling (apartment, house and other type[46]). The calculation was made quarterly, for the period extending from the first quarter of 2000 to the fourth quarter of 2009.

7.1. STOCK OF DWELLINGS

The stock of dwellings for base year 2005 was calculated using the results of the 2005 Census of Population and Housing and information on energy subscribers reported by the Superintendency of Public utilities.

The stock is obtained from the number of occupied dwellings and it is classified by area (urban, rural) and by form of occupancy (dwellings actually rented, and imputed dwellings: used on own account or other type of occupancy). The combination of these categories defines four groups. In addition, the stock by socio-economic stratum and type of dwelling is calculated.

The quarterly series of the stock of dwellings is calculated in three steps:

- Adjustment of the number of occupied dwellings to the data of the 1993 and 2005 censuses;
- Interpolation of the adjusted number of urban and rural dwellings;
- Breakdown of the stock by stratum and type of dwelling.

● **Adjustment of the number of occupied dwellings of the 1993 and 2005 censuses**
The censuses present errors of coverage generated by the difficulty of access, either because of geographic or of public order conditions, or by loss of information in the process of data transmission.

In order to correct these errors of coverage, estimations of omission and adjustments of the census data are made, giving priority to the estimation of population, by means of the demographic conciliation process that looks for the coherence between the demographic information of two censuses (in this case the 1985 and 2005 censuses) and demographic events, such as: births, deaths and migration.

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[45] Dwellings in other types of occupancy include dwellings occupied without payment with the permission of the owner; dwellings belonging to a family member and used without payment; dwellings in usufruct; dwellings used without owner's rights, etc.
[46] This category includes dwellings of one-single room type, tents, boats, natural shelters, bridges, etc.

From the demographic conciliation and the indicator of persons per dwelling derived from the censuses, the number of dwellings was adjusted, that in each census are obtained from the following formula:

● **Interpolation of urban and rural adjusted dwellings.** In order to obtain the quarterly series of the stock of dwellings that enables calculating the production of rentals of dwellings, the adjusted number of dwellings of the 1993 and 2005 censuses are used and the results are interpolated. For the interpolation of dwellings, different methodologies are applied for the urban area and for the rural area.

– **Interpolation of urban dwellings**. The main source of information for the interpolation of urban dwellings is the Building Census. This census is a research that DANE has been carrying out since year 1997 and which consists of applying the longitudinal panel[47] technique to make a quarterly follow-up to each construction project that is in progress[48].

The indicator used to estimate the quarterly stock of dwellings is the number of newly finished residential units, broken down by socio-economic stratum and type of dwelling (house or apartment).

Thus, from the census information (1993 and 2005) and the Building Census, the urban quarterly stock of dwellings was calculated as follows:

a.   Interpolation of adjusted dwellings 1993 (quarter III)[49] - 2005 (quarter II)[50].
b.   Adjustment of the stock of dwellings to take into consideration the 1999 earthquake in the coffee region that destroyed a part of the stock.
c.   Expansion of the number of newly finished dwellings, reported by the Building Census.
d.   Calculation of the stock of dwellings, from the finished units, for the departments covered by the Building Census.
e.   Calculation of the stock of dwellings for the departments **not covered** by the Building Census.

a. Interpolation of adjusted dwellings 1993 (quarter III) - 2005 (quarter II). The initial procedure to obtain the stock of dwellings consisted in interpolating the adjusted number of dwellings of the 1993 and 2005 censuses, considering the population growth, as a first indicator of the growth of the stock of dwellings of the country.

b. Adjustment of the stock of dwellings due to the earthquake in the coffee region. The stock of dwellings of the affected departments: Caldas, Quindío, Risaralda, Tolima and Valle del Cauca, was adjusted, using the registry of damaged dwellings carried out by the Network of Social Solidarity, in coordination with DANE. The adjustment consisted

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[47] The longitudinal panel technique enables following-up the same unit of observation over time.
[48] Methodology of the Building Census. (DANE) Bogota 2009
[49] The third quarter of 1993 is taken as a reference, because the 1993 Census was carried out in October; therefore, it is the closest quarter to this point in time.
[50] The second quarter of 2005 is taken as reference because the census data refer to June.

in decreasing the stock corresponding to the first quarter of 1999[51] using the number of destroyed dwellings.

c. Expansion of newly finished dwellings, as reported by the Building Census. After performing the first interpolation of the stock of dwellings in accordance with the demographic behavior of the country, and including the decrease in dwellings generated by the earthquake in the coffee region, the indicator of newly finished units of the Building Census was added with the purpose of introducing the dynamics of the real estate sector into the series.

d. Calculation of the stock of dwellings, from the newly finished units of the Building Census. As of the second quarter of 1997, the newly finished units (expanded), are added to the stock (obtained with demographic interpolation), in order to obtain the final series. The results are presented in Table 32.

Table 32. Stock of urban dwellings, per quarters
Total departments covered by the Building Census
1997 (quarters II-IV) - 2009 (quarters I-IV)

Year	Quarters			
	I	II	III	IV
1997	(…)	5.028.663	5.070.276	5.125.540
1998	5.185.686	5.251.301	5.300.768	5.349.139
1999	5.359.314	5.398.409	5.435.301	5.474.338
2000	5.506.685	5.537.654	5.568.047	5.605.045
2001	5.639.200	5.683.131	5.720.312	5.774.050
2002	5.824.516	5.874.567	5.931.976	5.999.388
2003	6.053.529	6.116.794	6.178.303	6.240.606
2004	6.303.737	6.357.860	6.418.287	6.483.307
2005	6.545.389	6.600.130	6.643.069	6.691.013
2006	6.731.346	6.780.877	6.840.123	6.891.158
2007	6.948.412	6.983.496	7.032.056	7.081.035
2008	7.131.247	7.183.775	7.241.741	7.295.769
2009	7.340.101	7.398.438	7.443.212	7.510.025

Source: DANE-DSCN.

(…): not available

e. Calculation of the stock of dwellings for the departments **not covered** by the Building Census. The interpolation of dwellings of the departments not covered by the Building Census was made in first instance with the quarterly indicator of population, and to the obtained stock of dwellings, the quarterly behavior of the municipalities covered by the Building Census was applied. (see Table 33).

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[51] The earthquake in the coffee region occurred on January 25, 1999.

Table 33. Stock of urban dwellings
Total departments not covered by the Building Census
1993 (quarters III and IV) - 2005 (quarters I-IV)

Years	Quarters			
	I	II	III	IV
1993	(…)	(…)	674.929	683.187
1994	691.503	699.877	708.168	716.517
1995	724.923	733.389	741.670	750.008
1996	758.401	766.850	775.241	783.692
1997	792.193	800.751	842.086	849.915
1998	858.426	867.467	874.940	881.918
1999	887.673	893.381	898.803	904.735
2000	909.736	914.473	919.139	924.482
2001	929.600	935.755	940.961	947.806
2002	954.511	961.448	969.619	979.170
2003	986.845	995.704	1.004.139	1.012.892
2004	1.021.799	1.029.438	1.037.903	1.047.014
2005	1.055.530	1.063.407	1.072.229	1.081.556

Source: DANE-DSCN

(…) not available

– **Interpolation of the number of rural dwellings.** In order to obtain the series of rural dwellings a factor of interpolation was created from the index of new constructed dwellings between censuses 1993 and the 2005 and the index of quarterly increase of population derived from the projections of rural population.

Similarly as for the urban stock, an adjustment was made in the first quarter of 1999, consisting in removing the dwellings that had been destroyed in the 1999 earthquake in the coffee region. The results of the rural stock are shown in Table 34.

Table 34. Stock of rural dwellings
1993 (quarters III and IV) - 2009 (quarters I-IV)

Years	Quarters			
	I	II	III	IV
1993	(…)	(…)	2.156.210	2.163.701
1994	2.171.201	2.178.702	2.186.081	2.193.457
1995	2.200.839	2.208.225	2.215.480	2.222.736
1996	2.229.989	2.237.247	2.244.470	2.251.692
1997	2.258.916	2.266.145	2.273.374	2.280.604
1998	2.287.838	2.295.072	2.302.343	2.309.614
1999	2.313.446	2.320.865	2.328.363	2.335.861
2000	2.343.363	2.350.863	2.358.402	2.365.950
2001	2.373.497	2.381.046	2.388.732	2.396.425
2002	2.404.119	2.411.812	2.419.687	2.427.558
2003	2.435.438	2.443.321	2.451.404	2.459.492
2004	2.467.589	2.475.693	2.484.030	2.492.376
2005	2.500.732	2.509.095	2.517.532	2.525.982
2006	2.534.441	2.542.905	2.551.631	2.560.371
2007	2.569.117	2.577.879	2.586.775	2.595.680
2008	2.604.599	2.613.534	2.622.699	2.631.877
2009	2.641.066	2.650.273	2.659.708	2.669.157

Source DANE – DSCN

(…) not available

● **Breakdown of the stock by stratum, type of dwelling and number of rooms.** In order to disaggregate the stock of urban and rural dwellings by socioeconomic stratum, the

information of residential subscribers of energy reported by the Superintendency of Public Utilities was used. The structure was established for year 2005, by department, and consisted in calculating the share of the residential subscribers of energy of each stratum, within the total of residential subscribers of energy. The strata were then grouped according to the following classification:

–   Stratum 1 = socioeconomic stratum 1 + socioeconomic stratum 2
–   Stratum 2 = socioeconomic stratum 3 + socioeconomic stratum 4
–   Stratum 3 = socioeconomic stratum 5 + socioeconomic stratum 6

The breakdown by type of dwelling (apartment, house, another type), was derived from the structure of the 1993 and 2005 Population and Housing Censuses.

As of the third quarter of 2005, the structure by stratum and type of dwelling are obtained from the indicator of culminated units, reported by the Building Census.

Table 35 presents the stock of dwellings at national level for year 2005 by type of occupancy, stratum and type of dwelling.

Table 35. Stock of occupied dwellings, according to stratum and type of dwelling. Year 2005 Base, 2005

Strata	Type of dwelling	Number of dwellings		
		Total	Own account and other	Leased
	Total	7.774.901	5.023.649	2.751.252
1	Apartment	981.691	629.158	352.533
	House	3.062.795	2.026.528	1.036.267
	Other type	331.342	214.741	116.601
2	Apartment	953.346	596.136	357.210
	House	1.829.988	1.164.240	665.748
	Other type	172.967	108.191	64.776
3	Apartment	188.060	120.364	67.696
	House	254.712	164.291	90.421
	Other type	0	0	0

Source: DANE - DSCN   .

7.2. AVERAGE VALUE OF RENTALS

The average value of rentals is calculated using the results of the 2007 Living Conditions survey and the consumer price index of the product "rentals". From the survey, the value of the average rental actually paid by households for each of the regions covered by the survey is obtained; the calculation is made at urban and rural level, by type of dwelling and socioeconomic stratum.

The geographic coverage of the Living Conditions survey corresponds to the following regions:

- – Atlantic region.
- – Central region.
- – Eastern region.
- – Pacific region.
- – Orinoquia.
- – San Andres.
- – Bogota.
- – Antioquia.
- – Valle del Cauca.

The following procedures were carried out for the calculation:

- – The values in 0 and extreme values (less than 10.000 pesos a month and more than 5 million pesos a month) were excluded from the database of rentals of dwellings.
- – The entries with at least one field of information missing were eliminated from the database (region, type of dwelling, stratum, value of the rental).
- – The average value of rentals by region, type of dwelling and stratum, was then calculated using the Microsoft Excel dynamic table tool.

In order to obtain the level of average value of rentals of year 2005, the rentals calculated for year 2007 were back-casted, using the consumer price index of rentals. Table 36 presents the average annual value of rentals of year 2005 at national level, by type of dwelling and stratum.

In order to calculate the series of average rental, a first exercise was made, using the values of rentals derived from the labor force survey that also collects information on income (and imputed income); nevertheless, when looking at the series, many unexplained irregularities appeared, because the sample changes from period to period. This is the reason why it was decided to use the changes in the CPI.

Table 36. National average value of annual rentals, by stratum, according to type of dwelling 2005

			Thousand pesos
Type of dwelling	Stratum		
	1	2	3
Apartment	2.076	3.573	9.289
House	2.448	4.255	10.885
Other	1.280	1.736	--

Source: DANE - DSCN
--: void

7.3. RENTALS OF DWELLINGS

The production of rentals of dwellings is calculated both for the imputed services and the actual services. The imputed services refer to the rental services on own-account and are obtained as the product of the stock of owner-occupied dwellings and in other type of occupancy and the average value of rentals of dwellings actually leased and presenting

the same features (in terms of stratum and type of dwelling). In the classification of national accounts, it corresponds to product 520101.

On the other hand, the services of rentals to third parties are calculated as the product of the stock of rented dwellings and the average annual value of rentals of rented dwellings.

The corresponding product in the classification of national accounts is the 520102. The annual series of the rentals of dwellings is obtained as the sum of quarters.

Table 36 presents the results for year 2005. As it can be observed, the production of rentals of dwellings on own-account for year 2005 amounts to 16.770 thousand million pesos and the production of actual rentals of dwellings to 9.203 thousand million pesos, for a total of rentals of dwellings amounting to 25.973 thousand million pesos.

Table 37. Imputed rental, actual and total rentals,
according to stratum and type of dwelling.
2005 Base
Year 2005

Thousand million pesos

Stratum	Type of dwelling	Total rentals	Imputed rentals (520101)	Actual rentals (520102)
	Total	25.973	16.769	9.203
1	Apartment	2.038	1.282	756
	House	7.499	5.229	2.269
	Other	424	274	150
2	Apartment	3.406	2.076	1.330
	House	7.786	4.916	2.870
	Other	300	183	117
3	Apartment	1.747	1.075	672
	House	2.773	1.734	1.039
	Other	0	0	0

Source: DANE - DSCN

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8. TAX ON FINANCIAL MOVEMENTS

8.1 TAX ON FINANCIAL MOVEMENTS

The Tax on Financial Movements (GMF) is an indirect tax of the national order that applies to financial transactions made by the users of the system.

- **Generating fact.** The generating fact is defined in article 871 (added by Law 633 of 2000) of the Tributary Statute and relates to the execution of the following financial transactions:

  – Use of resources from current accounts or savings accounts by individuals or corporations or disposition of resources of deposit accounts in the Central Bank, whenever such disposition implies:

  - ➢ Withdrawal in cash
  - ➢ Withdrawal by means of savings book
  - ➢ Withdrawal by means of checkbook
  - ➢ Withdrawal through debit card
  - ➢ Withdrawal through an electronic teller
  - ➢ Withdrawal or payment in payment centers
  - ➢ Debit Notes

  – Issuance of cashier's checks;

  – Movements among accounts;

  – Transfer of resources;

  – Transfer of resources between different co-owners on collective portfolios (even when not linked to a current account, a savings account or a deposit);

  – Withdrawal of resources by the beneficiary or trustee on collective portfolios (even when not linked to a current account, a savings account or a deposit);

  – Disposition of resources through so-called contracts or collection agreements or similar means that financial organizations subscribe with their clients and that are not handled using current accounts, savings accounts or deposits;

  – Payments or transfers to third parties through debit notes handled using accounts other than current accounts, savings accounts or deposits;

  – Accounting movements that represent the payment of liabilities or the transfer of goods, resources or of rights of any kind;

  – Debits on deposits considered as positive balances of credit cards;

- Reimbursement of term deposits by means of deposits on the account of the beneficiaries.

- **Accrual.** The GMF is an instantaneous tax and is accrued at the moment in which the financial transaction is made, that is, when the resources, object of the financial transaction, are made available, either by installment, payment in cash or issuance of check. It is accrued for each operation subject of the tax.

- **Base of the Tax.** The base of GMF is the total value of the financial transaction through which the resources are made available. In the case of term deposits (DT) paid by means of deposits on a current account, savings account or on a deposit in the Central Bank, the base is made of the value of the principal and the interests.

- **Subjects of the tax.** Subjects of the GMF are the users and clients of the financial sector and other organizations overseen by the Superintendency of Finance, that of Securities and that of Solidarity Economy, including the Central Bank.

- **Retaining agents.** The retaining agents authorized by law and responsible for the collection and payment of the GMF are as follows:

  - The Central Bank

  - Entities overseen by the Superintendency of Finance, the Superintendency of Securities or the Superintendency of Solidarity Economy.

8.2 TREATMENT IN THE NATIONAL ACCOUNTS OF COLOMBIA

There have been changes in the treatment of the GMF between the 2000 base and the 2005 base. These modifications change the level and growth of Gross Domestic Product but not the gross saving nor the net lending of the agents.

● **Treatment in the 2000 base.** In the 2000 base, it was considered as a specific tax on financial operations, and was classified within the current taxes on income, wealth, etc. as (D.59) *other current taxes*, defined as: "taxes payable periodically, in most cases annually, on the property or net wealth of institutional units, excluding taxes on lands or other assets owned or rented by enterprises and used by them for production".

Additionally, within the classification of taxes of the Government Finance Statistics Manual of the International Monetary Fund (GFS Manual), it was considered as belonging to the category of *Taxes on financial and capital transactions* (1134). "[...] includes taxes on change of ownership of property, except those classified as gifts, inheritance or estate transactions. Included are taxes on the issuance, purchase and sale of securities, taxes on checks and other forms of payment and taxes levied on specific legal transactions, such as the validation of contracts and the sale of immovable properties."

● **Treatment in the 2005 base.** The analysis was based on several considerations such as:

- The taxable basis of GMF is the amount of the transactions, that is, it is not a tax on a checkbook, for example, that would be independent of the amounts being withdrawn by means of the checks.

- Although GMF seems apparently to be levied on the change in property (which would justify the treatment in the 2000 base following the principles of classification of the GFS manual), it is not the change in property that generates the tax, but simply the use of certain types of means of payment: making transactions, for example, using directly currency does not give rise to the payment of the tax: it is not a tax to the change of property but on the use of certain means of payment.

Therefore, in the 2005 base, GMF is considered within the "taxes on products excluding VAT, import and export taxes (D.214), defined as "taxes on goods and services that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation". Within this group, a specific category of taxes on financial and capital transactions is identified that "consists of taxes payable on the purchase or sale of non-financial and financial assets including foreign exchange. They become payable when the ownership of land or other assets changes, except as a result of capital transfers, (mainly inheritance and gifts) (GFS, 2001:1134). They are treated as taxes on the services of intermediaries".

Although the generating fact of GMF is often the same as that of FISIM, and that, therefore, GMF could be associated with this transaction, the principles of calculation of both are very different, As a consequence, in the product classification of the system, GMF is considered separately as a tax on products associated with a "product" which basic value is 0 and purchaser's value equal to the value of the tax (product with code 510103).

8.3 ANALYSIS OF THE RESULTS

As a consequence of this change in treatment, the level of global GDP was affected as shown in Table 38.

Table 38. Gross Domestic Product – Production approach at current prices
Year 2005

Transaction	Definition	2000 Base		2005 Base	
		Value	Percentage	Value	Percentage
	Gross domestic product	335.547	100,0	340.156	100,0
P.1	Output	582.515	173,6	589.688	173,4
P.11	Market output	512.587	152,8	520.834	153,1
P.12	Output for own final use	20.014	6,0	24.166	7,1
P.13	Otrher non-market output	49.913	14,9	44.688	13,1
P.2	Intermediate consumption (-)	272.870	81,3	278.407	81,8
B.1	Value added	309.645	92,3	311.281	91,5
D.21-D.31	Taxes less subsidies on products	25.902	7,7	28.875	8,5
D.21	Taxes on products	26.384	7,9	29.415	8,6
D.211	Non-deductible Value added type taxes (VAT)	17.588	5,2	17.857	5,2
D.212	Taxes and duties on imports, excluding VAT	3.148	0,9	2.949	0,9
D.213, D.214	Other taxes on products	5.649	1,7	8.609	2,5
D.31	Subsidies on products (-)	482	0,1	540	0,2

SourceDANE - DSCN

For year 2005, the amount of "other taxes on products" changes from 5.649 thousands million pesos in the 2000 base to 8.609 thousands million pesos in the 2005 base and from representing 1,7% of GDP in the 2000 base it gets to represent 2,5% in the 2005 base. With the purpose of evaluating the impact of the change in the treatment of the Tax on Financial Movements on GDP, it is necessary to know if for the payer, it is an intermediate consumption (production cost of a producer) or if it is paid by a final consumer as a final consumption element. Nevertheless, it shall be pointed out that if the consuming activity is the public administration in its capacity as a non-market producer, the increase of intermediate consumption turns into an increase of the value of production, though leaving its value added, and thus total GDP, unchanged. It is what is picked up by the first column of Table 39.

It may be observed that the effect of this new treatment on global GDP has little significance (less than 0,3%).

Table 39. Net effect of the treatment of GMF on GDP
2000-2007

thousand million pesos

Years	Effect on non-market output	Effect on taxes on products	Effect on intermediate consumption	Net effect on GDP	GDP at current prices	Net effect on GDP (%)
2000	33	1.038	608	458	208.531	0,22
2001	28	1.416	789	655	225.851	0,29
2002	28	1.443	890	592	245.323	0,24
2003	39	1.685	1.013	707	272.345	0,26
2004	35	2.291	1.441	884	307.762	0,29
2005	34	2.402	1.521	947	340.156	0,28
2006	66	2.672	1.836	882	383.898	0,23
2007	46	2.990	2.046	944	431.072	0,22

Source: DANE - DSCN

9. CONSUMPTION OF FIXED CAPITAL OF THE GOVERNMENT AS NON-MARKET PRODUCER

As it is the case in many other countries, in the estimations of the national accounts made in Colombia, calculations have been made traditionally in gross value, that is, without including a calculation for consumption of fixed capital, not out of ignorance of its importance, but because its calculation is difficult, and requires the existence of large and homogenous series of gross fixed capital formation.

The calculation of consumption of fixed capital (CFC) and its inclusion in the estimations of the national accounts intends to consider within the production costs the wearing down of the capital assets during the period, estimated indirectly by using the costs of maintaining intact the stock of fixed assets used in the production processes. This cost is an actual cost that affects the net worth of the owner of the capital assets, even though it is not materialized in an economic transaction between agents.

In the case of general government omitting the estimation of the corresponding CFC, implicitly leads to the undervaluing of its contribution to GDP, since its production is estimated indirectly by means of its production costs (including the corresponding CFC). Therefore, and since the 2000 base, efforts have been made in Colombia to estimate the CFC corresponding to general government.

Within the framework of the new 2005 base of national accounts, the calculation that had been developed in the previous base has been reviewed, as the levels that had been calculated were considered as excessively high, particularly with respect to the first years of the series. The new results that have been obtained are now within the parameters observed in other countries and can be considered as satisfactory.

Since consumption of fixed capital is estimated using the perpetual inventory method that requires a very large historical series of investments, it was necessary to establish those long series of gross fixed capital formation of government by type of asset, starting from year 1939.

Beyond the inherent difficulties of the procedure, the exercise suffers from limitations that derive from the poor quality and sometimes inconsistencies of the existing historical statistical series, its lack of consistency over time, as well as of the changes in the functions developed by general government and in its size over time, and the incidence of these factors on the same investment behavior.

Additionally, it is necessary to dispose of large series of prices indices of assets, in order to discount the effects of the changes in prices. This is particularly crucial in the periods in which the inflation was high.

Table 40 shows the values of the consumption of fixed capital of government as well as of the production of the government at current prices in the series in the 2000 and 2005 bases.

Table 40. Government consumption of fixed capital
2000 and 2005 bases
2000-2007

<div align="right">Thousand million pesos</div>

Year	2000 Base			2005 Base		
	CFC of Government	Government output	Share of CFC in output value	CFC of Government	Government output	Share of CFC in output value
2000	3.519	35.821	9,8%	2.170	32.418	6,7%
2001	3.654	38.380	9,5%	2.494	34.710	7,2%
2002	3.661	41.675	8,8%	2.787	36.203	7,7%
2003	4.065	46.242	8,8%	3.208	39.474	8,1%
2004	4.065	50.594	8,0%	3.567	44.440	8,0%
2005	4.070	54.754	7,4%	3.746	48.940	7,7%
2006	4.089	59.849	6,8%	4.118	53.720	7,7%
2007	4.099	65.629	6,2%	4.352	60.050	7,2%

Source: DANE - DSCN

10. RESULTS OF THE NATIONAL ACCOUNTS 2005 BASE

The 2005 base marks a landmark in the history of the national accounts of Colombia, since from that point forward, the method of calculation of the accounts at constant prices has been modified, applying the chaining of indices in which the volume and price indices relating to the base year are calculated by multiplying successive indices calculated from year to year.

With the new methodology, in the future, when adopting a new base year, the changes in the measurements of volume will occur exclusively as a result of the existence of new information and not as it was the case until now, as a result of changes in the weights of the different products resulting from the use of a new base year. The technical note on rebasing[52] explains the scopes of this new method of calculation of the volume indices through chaining.

Another document will present the results of the 2005 base, as compared with those of the 2000 base *for all the series.*

The present document provides an introduction to the reading of the results presented in the publication of the national accounts.

According to the national accounts 2005 base, Colombia's Gross Domestic Product increased from 208,531 thousand million pesos in year 2000 to 503,287 thousand million pesos in 2009[53].

On the other hand, per capita GDP for year 2000 was 5'176,751 pesos as compared to 11'189,686 pesos in 2009, that is, it registered a nominal increase of 116,0%. At constant prices GDP per capita increased by 26,4% in the same period.

Year 2005. Year 2005, base year of the new series, has focused most of the efforts and the mobilization of numerous data sources.

For this year, the level of the global GDP is estimated as 311,283 thousand million pesos, corresponding to a per capita GDP of 7' 931,153 pesos.

In table 41 the share of the different aggregated activities in GDP can be observed, which shows that the service activities represent 58,8% of total value added, whereas the activities associated with the farming sector represent only 8,4% of total value added and the manufacturing industry 15,4%.

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[52] Refer to chapter 2
[53] Provisional data estimated from the quarterly accounts

Table 41. GDP by aggregated activities of the national accounts at current prices
2005 Base
2000-2007

thousand million pesos

National accounts Clasification	Item	Values	Share in total GDP (%)
	GDP	340.156	
A.	Agriculture, farming of animals, hunting,forestry,fishing	26.279	8,4
B.	Mining and quarrying	21.371	6,9
C.	Manufacturing	48.082	15,4
D.	Electricity, gas, and water supply	13.708	4,4
E.	Construction	18.915	6,1
F.	Wholesale and retail trade; repair of motor vehicles and household and personal goods, restaurants and hotels	40.335	13,0
G.	Transport, storage and communications	23.285	7,5
H.	Financial intermediation, insurance and pension funding, real estate, renting and business activities	65.096	20,9
I.	Other community, social and personal services activities	54.210	17,4
	Total Value added	311.281	100,0
D.21-D.31	Taxes less subsidies on products	28.875	
D.21	Taxes on products	29.415	
D.211	Non deductible value added tax (VAT)	17.857	
D.212	Taxes and duties on imports excluding VAT	2.949	
D.213-D214	Other taxes on products	8.609	
D.31	Subsidies on products (-)	540	

Source: DANE - DSCN

The estimated total gross supply amounts to 682,459 thousand million pesos, made of gross production (90,6%) plus imports (9,4%) (Graph 4), that is distributed from the point of view of demand between intermediate consumption (40,8%), final consumption (40,8%), gross capital formation (10,1%) and exports (8,4%) (Graph 5).

Graph 4. Percentage share of domestic supply and imports in gross total supply - 2005

9,40%

90,60%

■ Gross production ■ Imports
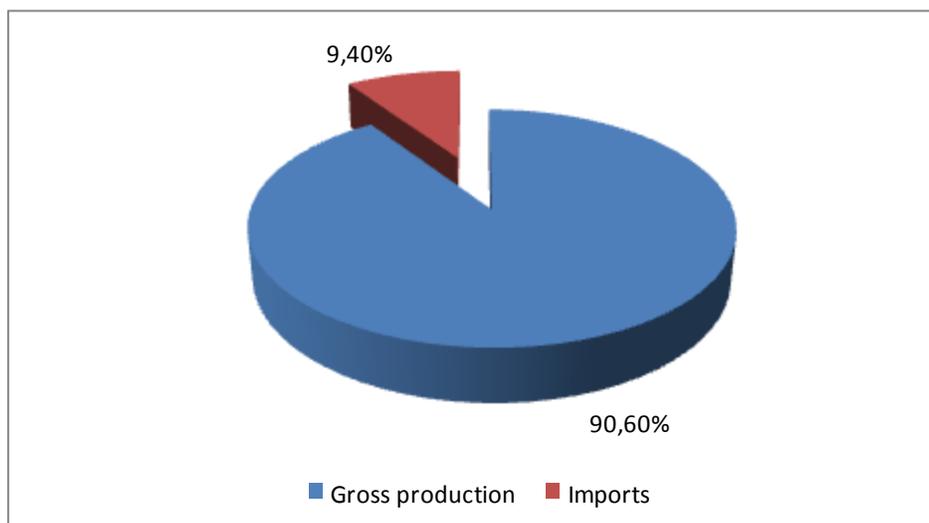
Source: DANE, DSCN.

Graph 5. Percentage share of components of demand in total demand - 2005

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8,40%

10,10%

40,80%

40,80%

■ Intermediate consumption

■ Final consumtion

■ Gross capital formation

■ Exports
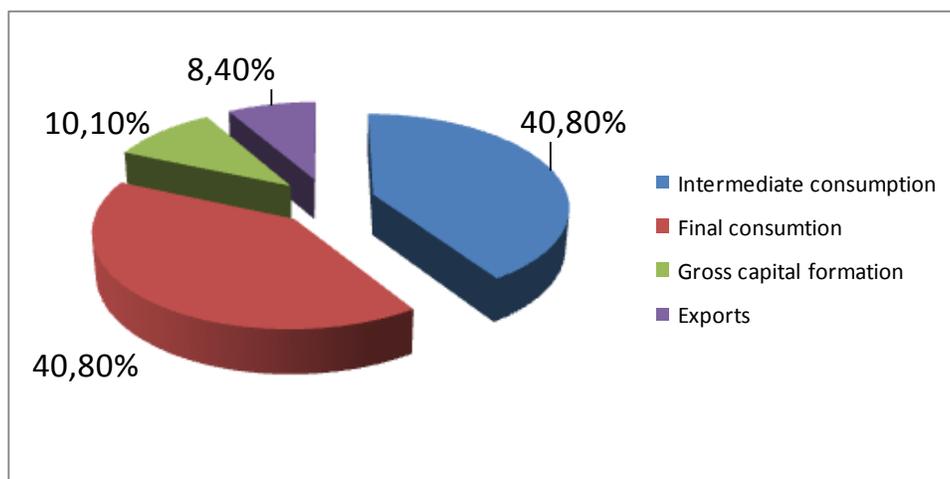
Source: DANE, DSCN

Household final consumption expenditure in the economic territory represents more than 80% of total final consumption and is concentrated in food (19,1%), rentals and public utilities (17,3%). The low participation of expenses in education (5,1%) and healthcare (3,4%) can be pointed out as reflecting, on the one hand, the greater access to public

education and, on the other hand, the extension of the coverage of social insurance in healthcare that reduces the direct expenditure of households on this item.

From the point of view of the institutional sectors, the importance of the productive activity of households is not much different from that of the non-financial corporations and represents almost 40% of the value added generated in the economy, whereas 46% correspond to non-financial corporations. This underlines a productive activity that depends to a large extent on the initiative of individuals, with a still scarce level of institutionalization.

As far as the distribution of value added is concerned, in 2005, the amounts corresponding to the compensation of employees and the operating surplus (the gross income of production corresponding to the production units) have equivalent values (112,589 and 112,304 thousand million pesos, respectively). Mixed income, that corresponds to self-employed workers that provide both labor and capital, amounts to 82,203 thousand million pesos.

The gross saving of resident agents generated in the period, amounting to 65,872 thousand million pesos, is not sufficient to finance gross capital formation (68,782 thousand million pesos); therefore, it is necessary to count on an external financing; the net lending of the rest of the world (the net financing coming from abroad) for this period is estimated in 2,911 thousand million pesos.

Series 2000-2007. In 2000-2007, the growth in volume of GDP has been of 36,2% (Graph 6) and that of imports, 99,2%, resulting in an increase of net supply of 45%. From the demand side, this results in an increase of 31,2% in final consumption (including households, general government and NPISH); 24,4% in gross capital formation, and an increase of 45,2% in exports (Graph 7). In the 2000-2007 period, imports and exports grow faster than national production (36,4%), which illustrates a greater opening of the economy although with a still slow tempo. In the future, a greater growth of exports is augured, with the boom of petroleum exports, a situation that had still not occurred in the period under study.

Graph 6. Growth of the volume Index, Gross Domestic Product (GDP)
2005 Base
2000-2007
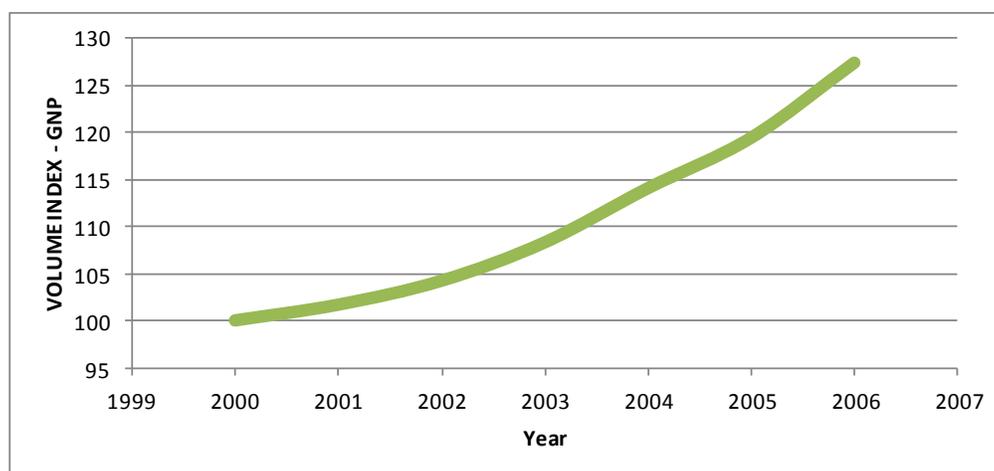
Source: DANE, DSCN.

Graph 7. Components of final demand at current prices

2005 Base
2000-2007
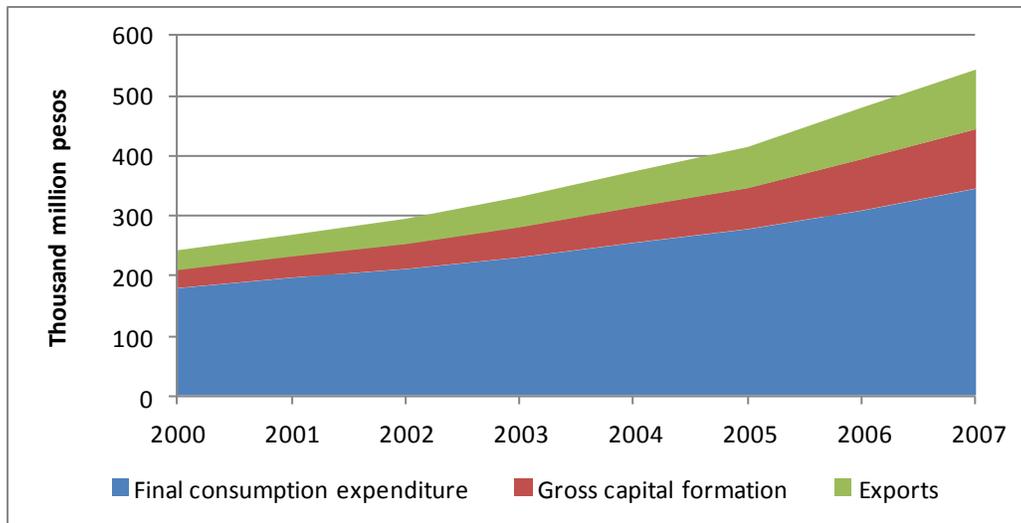
Source: DANE - DSCN

If the relative importance of imports and exports in 2000 and 2007 in value in relation to GDP is compared, it is actually possible to observe that the importance of imports grew from 16,8% of GDP in 2000 to 19,8% in 2007 (Graph 8), whereas exports (Graph 9) grew from15,9% to 16,5% with oscillations in the period, between 14,8% (2002) and 17,6% (2006):

Graph 8. Imports as a % of GDP
 2005 Base
2000-2007
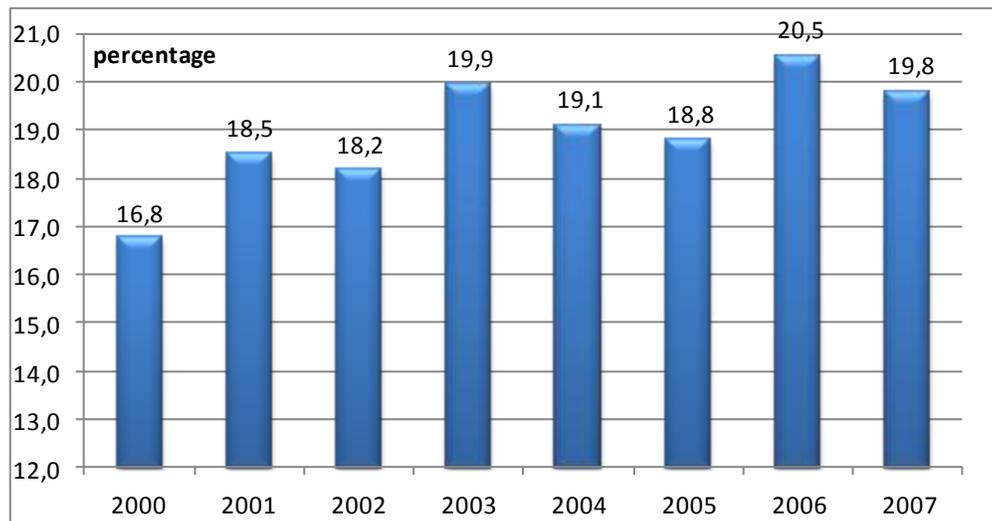
Source: DANE, DSCN.

Graph 9. Share of exports in GDP
2005 Base
2000-2007

percentage

15,9	15,4	14,8	16,6	16,8	16,8	17,6	16,5
2000	2001	2002	2003	2004	2005	2006	2007
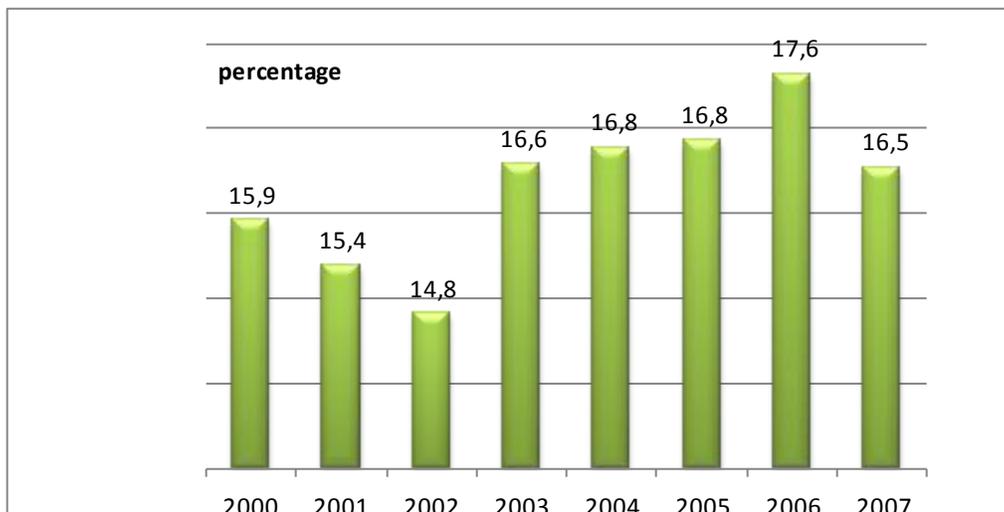
Source: DANE, DSCN.

The behavior of gross fixed capital formation in the period of analysis should be emphasized; its annual volume growth permanently surpassed 9% in all years, and reached 18,1% in 2006 (Graph 10). The majority of the products that constitute gross fixed capital formation had individually irregular changes, but its global change reflects the contribution to a greater economic growth.

Graph 10. Growth of the volume index, Gross fixed capital formation
2005 Base
2000-2007

Volume index
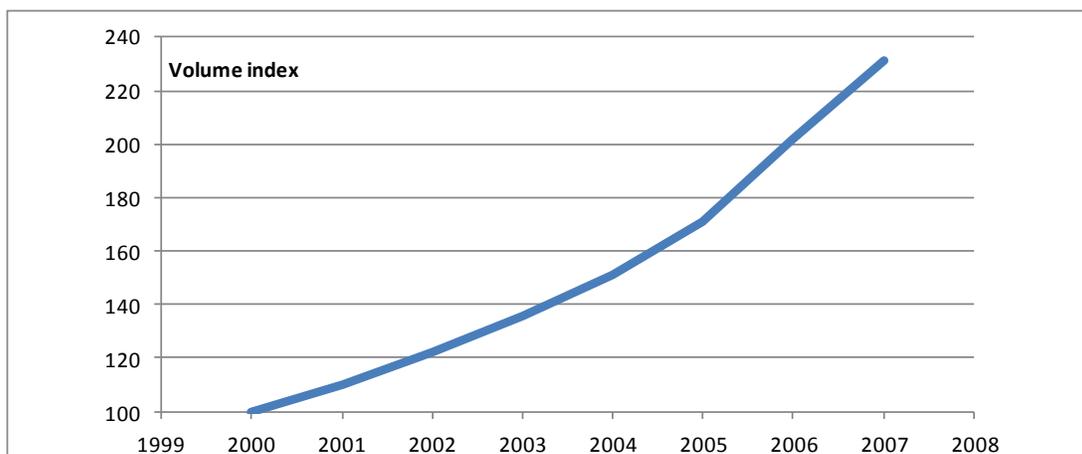
Source: DANE, DSCN.

On the other hand, household final consumption expenditure in the economic territory during the period of analysis (Graph 11) underwent a growth of 31,2% in volume, slightly inferior to that of GDP. Since year 2003 it registered a sustained growth in volume with annual rates greater than 4%. It is important to emphasize the growth of the durable goods consumed by households, which grew 150% in volume for the period (vehicles, motorcycles, goods belonging to the new information technologies) while the non-durable goods, mainly foods and clothes, only grew 20% during the same period.

Graph 11. Growth of the volume index, household final consumption expenditure
2005 Base
2000-2007
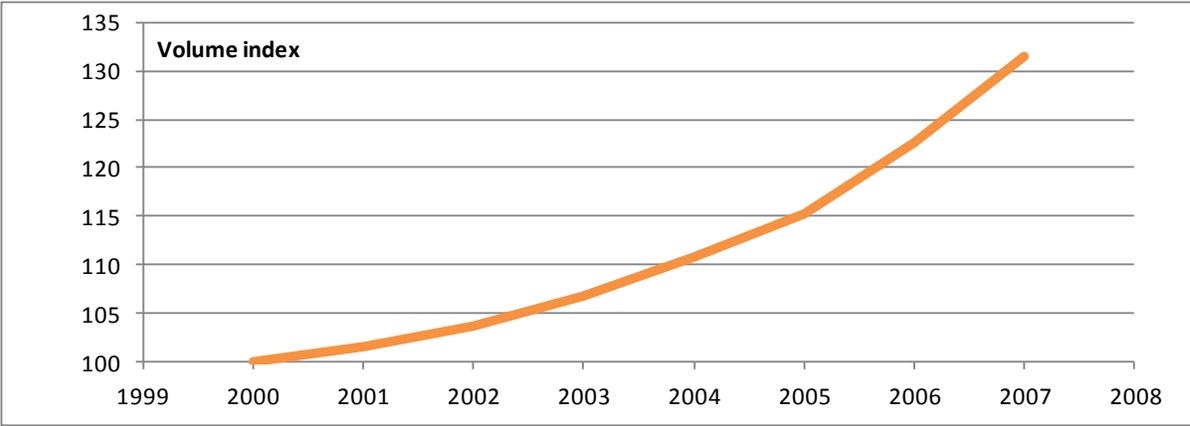
Source: DANE, DSCN.

Important changes in its structure are observed, (Graphs 12 and 13) that reflect the increasing urbanization of the population as, for example, an increase in the share of the expenses in hotels and restaurants (foods taken outside the household) that go from representing 10,3% of expenditure at current prices to 11,3% in 2007, a decrease in the expenditure in food and non-alcoholic beverages from 19,6% to 18,4% as well as an increase in the expenditure in transportation (from 8,1% to 11,3%) and in communication (from 3,3% to 4,8%). A relative decrease in the expenditure in education is also observed (from 5,6% to 4,7%) that reflects the greater access to public education, a situation that is also reflected in the supply side, since public education grew 38.5% in the period whereas private education only grew by 4.4%. The direct expenditure in healthcare for households, on the other hand, does not undergo major relative changes, which is consistent with the extension of the coverage of the social insurance scheme in healthcare associated with the expansion of the subsidized system.

Graph 12. Shares of household final consumption expenditure, by purpose
2005 Base
Year 2000

2000

35,1%
19,6%
17,9%
3,3%
5,6%
8,1%
10,3%

- Food and non-alcoholic beverages
- Rentals, electricity, gas and water
- Restaurants and hotels
- Transport
- Education
- Communications
- Other consumption items
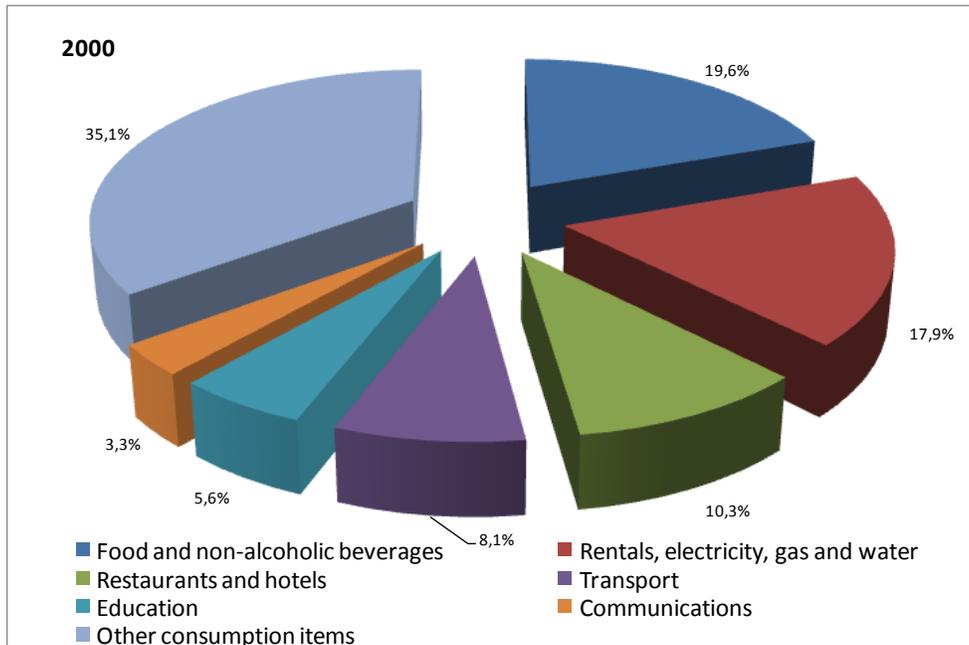
Source: DANE, DSCN.

Graph 13. Shares of household final consumption expenditure, by purpose
2005 Base
Year 2007

2007

33,3%
18,4%
16,2%
4,8%
4,7%
11,3%
11,3%

- Food and non-alcoholic beverages
- Rentals, electricity, gas and water
- Restaurants and hotels
- Transport
- Education
- Communications
- Other consumption items

Source: DANE, DSCN.

100
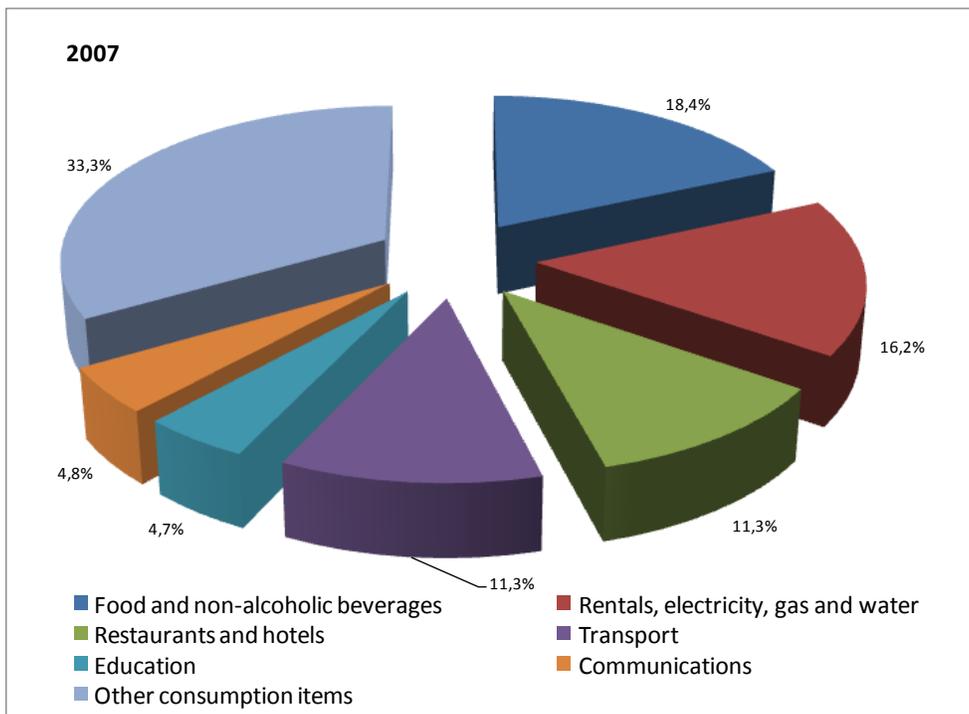
Analyzing the behavior of the productive activities, it is possible to observe that the activity that groups *agriculture, cattle farming, hunting, forestry and fishing and fish farming* showed a smaller dynamism than the rest of the productive activities, since its growth in volume in the period was only 23,5% while the total value added of the economy grew by 36,2%. Consequently, its relative weight in total value added at current prices that represented 8,9% in year 2000 only represents 7,8% in 2007, since it did not show increases in prices that would have had an opposite effect. This relative deceleration occurred in all activities included in this macro activity without exception.

In 2000-2007, the aggregated activities that grew more in value were *construction*, that grew from representing only 4,5% of total value added in 2000, to 7,1% in 2007, and *transport, storage and communications*, which grew from 6,8% to 7,8%, mainly because of communications. *The manufacturing industry* maintained its share, from 15,0% in 2000 to 15,9% in 2007, without any activity particularly standing out in this performance, with the exception of activity 27 (manufacture of refined petroleum products; processing of nuclear fuel).

Graph 14. Share of the main activities in total value added
2005 base
Years 2000 and 2007

Source: DANE, DSCN

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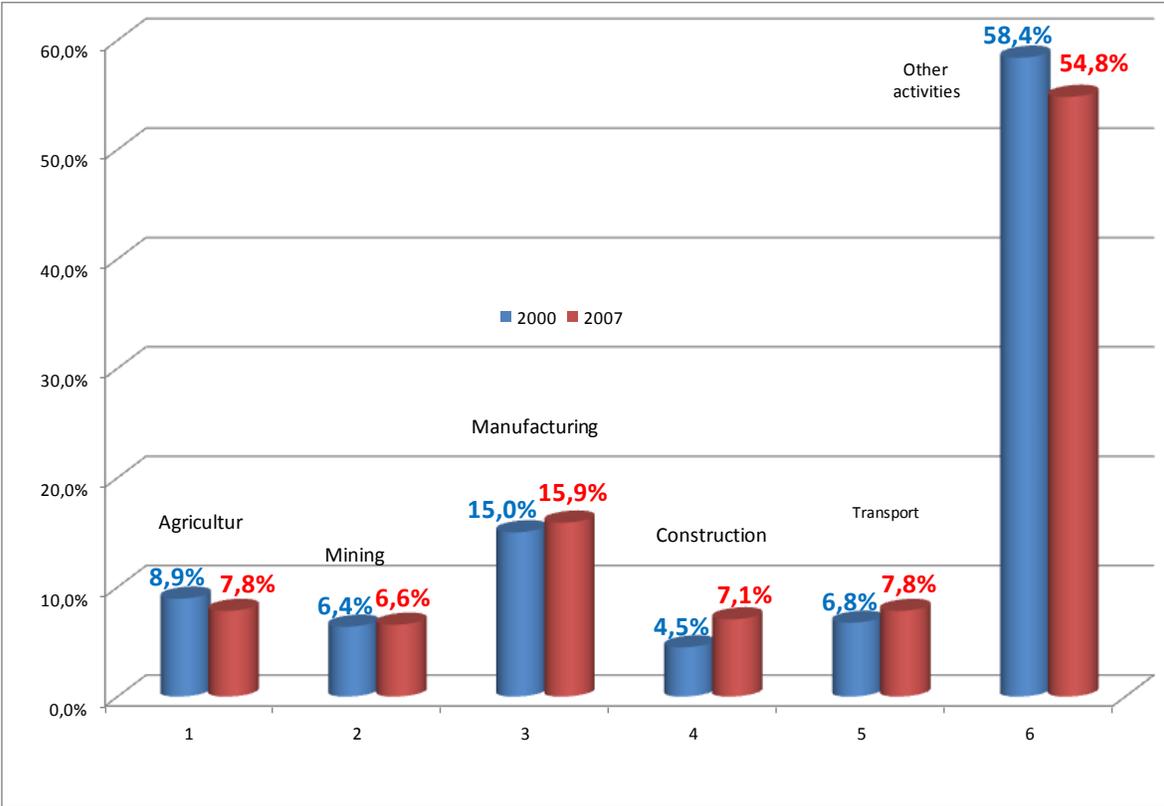
As far as the major macroeconomic aggregates are concerned, an increase of the share of gross operational surplus within total value added (Graph 15) can be observed, that reflects the greater appropriation of the fruits of growth by the owners of the means of production that represent approximately 34% of value added in 2000 through 2003 to reach 35% and 36% in 2004 to 2007 in front of a smaller relative share of the incomes of employees and self-employed persons or on own-account (compensation of employees and mixed income).

Graph 15. Share of gross operating surplus in value added
2005 Base
2000-2007
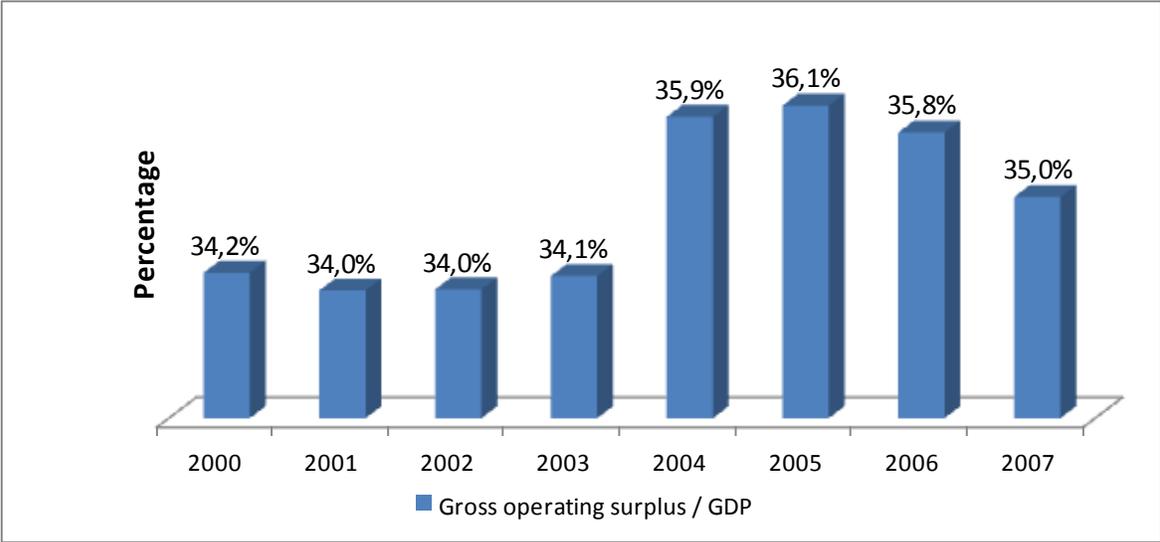
Source: DANE, DSCN.

It is important to observe also the dynamics of gross saving in the period that grew to represent approximately16% of GDP in the first years of the series, to represent close to 22% in 2006 and 2007 (Graph 16). In this growth, a change in the behavior of the national government can be observed, whose gross saving was negative in 2000 to 2002, and 2004, and positive in the other years. On the other hand, the share of households in this gross saving that represented approximately 50% only represents 35% of the total saving at the end of the period, whereas the share of the non-financial corporations grew from 46% to a value close to 51%.

Graph 16 Gross savings by institutional sector
2005 base
2000-2007

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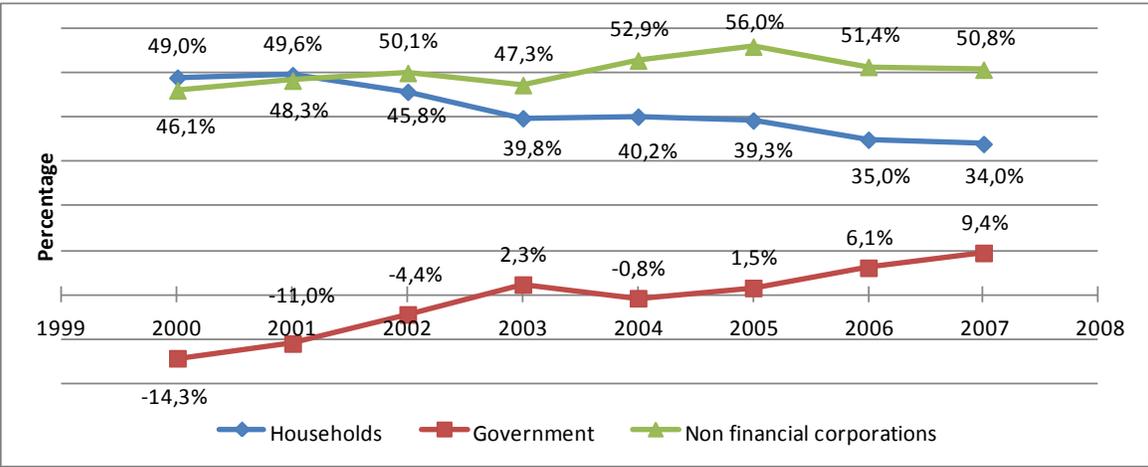
Source: DANE, DSCN

The breach between the growth of gross saving and that of gross capital formation increased during the period, as a result of different growth rates; the gross saving (nominal) increased by 179% whereas gross capital formation grew by almost 220%. Correlatively, the net borrowing with the rest of the world that presented a value of 208 thousand million pesos in 2000 grew to 13,136 thousand million in 2007, a growth that was concentrated in the 2004 to 2007 period. This behavior can be understood as reflecting the increasing interest of foreign investors in the country.

11. COMPARISON BETWEEN THE 2000 BASE AND THE NEW 2005 BASE

In this chapter the comparison of the preliminary results of the 2005 base, with respect to the results obtained with the 2000 base is presented.

11.1 COLOMBIA: NEW BASE OF THE NATIONAL ACCOUNTS YEAR 2005

● **Gross Domestic Product (GDP).** According to the new base of national accounts, the Gross Domestic Product and its main components present the following levels:

- **GDP according to the production approach**

Table 42. Total Gross Domestic Product, at current prices, production approach
2005 Base
Year 2005

thousand million pesos

National accounts codes	Concepts	Values	Share (%)
	GDP	340.156	100,0
P.1	Ouput	589.688	173,4
P.2	Intermediate consumption (-)	278.407	81,8
B.1	Value added	311.281	91,5
D.21-D.31	Taxes on product less subsidies on products	28.875	8,5
D.21	Taxes on products	29.415	8,6
D.211	Non deductible value added tax (VAT)	17.857	5,2
D.212	Taxes and duties on imports (excluding VAT)	2.949	0,9
D.213-D.214	Other taxes on products	8.609	2,5
D.31	Subsidies on products (-)	540	0,2

Source DANE - DSCN

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Table 43. Value added of the main economic activities, at current prices
2005 Base
Year 2005

thousand million pesos

Activities	Values	Share (%)
Total value added	311.281	100,0
Agriculture,animal farming, hunting, forestry and fishing	26.279	8,4
Mining and quarrying	21.371	6,9
Manufacturing	48.082	15,4
Electricity, gas and water supply	13.708	4,4
Construction	18.915	6,1
Wholesale and retail trade, repair of motor vehicles, personal and household goods	40.335	13,0
Transport, storage and communications	23.285	7,5
Financial intermediation, insurance, real state and business activities	65.096	20,9
Social, community and personal service activities	54.210	17,4

Source: DANE - DSCN

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- **GDP according to the expenditure approach**

Table 44. Total Gross Domestic Product, at current prices, expenditure approach 2005 Base Year 2005

thousand million pesos

Concepts	Values	Share in net total supply (%)
Supply		
Gross domestic product	340.156	84,19
Imports	63.896	15,81
Imports of goods	56.784	14,05
Imports of services	7.112	1,76
Net total supply	**404.052**	**100,00**
Demand		
Final consumption expenditure	277.953	68,79
Households final consumption expenditure	223.519	55,32
Goverment final consumption expenditure	53.373	13,21
NPISHs final consumption expenditure	1.061	0,26
Gross capital formation	68.783	17,02
Gross fixed capital formation	66.894	16,56
Change in Inventories	1.889	0,47
Final internal demand	**346.736**	**85,81**
Exports	57.316	14,19
Exports of goods	52.469	12,99
Exports of services	4.847	1,20

Source: DANE - DSCN

- **GDP according to the income approach**

**Table 45. Total Gross Domestic Product, at current prices, income approach 2005 Base
Year 2005**

thousand million pesos

National Accounts code	Concepts	Valores
	Gross Domestic Product	340.156
D.1	Compensation of employees	109.733
D.2	Taxes on production and imports	36.458
D.3	Subsidies (-)	540
B.2	Gross operating surplus	112.302
B.3	Gross mixed income	82.203

Source: DANE - DSCN

● **Comparison with the 2000 Base**: The comparison of the results obtained in the 2000 base with respect to the 2005 base of national accounts, gives the following results:

- **GDP according to the production approach**

It can be observed that, generally, the differences between the total level of GDP in both bases are not very important, in particular for year 2005, the base year of the new series;

the differences are higher for year 2000, which is reflected in a smaller growth of its value throughout the period in the 2005 base, as compared with the 2000 base.

Table 46. Total Gross Domestic Product, at current prices, production approach
2000 and 2005 bases
Years 2000 and 2005

thousand million pesos

Concepts	2000 Base		2005 Base		Change between bases	
	2000	2005	2000	2005	2000	2005
Gross domestic product	196.374	335.547	208.531	340.156	12.157	4.609
Output	331.279	582.515	353.338	589.688	22.059	7.173
Intermediate consumption	149.006	272.870	159.809	278.407	10.803	5.537
Value added	182.273	309.645	193.529	311.281	11.256	1.636
Taxes less subsidies on products	14.101	25.902	15.002	28.875	901	2.973
Taxes on products	14.518	26.384	15.389	29.415	871	3.031
Non deductible value added tax (VAT)	8.558	17.588	8.558	17.857	0	269
Taxes and duties on imports excluding VAT	1.951	3.148	1.737	2.949	-214	-199
Other taxes on products	4.008	5.649	5.094	8.609	1.086	2.960
Subsidies on products (-)	417	482	387	540	-30	58

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The change observed in "taxes on products" is explained partly by the reclassification of the tax on financial movements as a tax on products (before it was treated as a tax on income) (see chapter 8).

Graph 17. Growth rates of Gross Domestic Product (GDP) in value
2000 and 2005 bases[a]
2001-2007
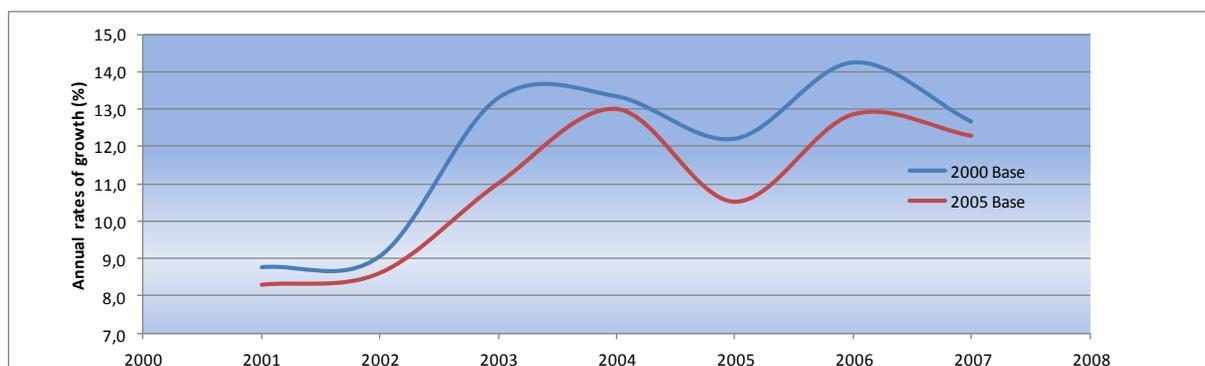
Source: DANE, DSCN.
a For the 2000 base, the data corresponding to year 2007 are provisional..

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- **Value added by main activities**

Table 47. Value added of the main economic activities, at current prices
2000 and 2005 bases
Years 2000 and 2005

thousand milion pesos

Activity	2000 Base		2005 Base	
	2000	2005	2000	2005
Gross Domestic Product	**196.374**	**335.547**	**208.531**	**340.156**
Agriculture, hunting, forestry and fishing	18.882	29.669	17.320	26.279
Mining and quarrying	12.771	22.283	12.361	21.371
Manufacturing	28.436	52.502	29.054	48.082
Electricity, gas and water supply	6.134	11.078	6.816	13.708
Construction	7.299	19.552	8.710	18.915
Wholesale and retail trade, repair of motor vehicles, personal and household goods, hotels and restaurants	24.368	41.854	26.927	40.335
Transport, storage and communications	12.034	22.579	13.065	23.285
Financial intermediation. Insurance, real estate, renting and business activities	32.506	51.226	43.024	65.096
Social, community and personal services activities	39.844	58.901	36.252	54.210
Value added	**182.273**	**309.645**	**193.529**	**311.281**
Taxes less subsidies on products	14.101	25.902	15.002	28.875

Source DANE - DSCN

Table 48. Percentage share of the value added of the main economic activities in GDP, at current prices
2000 and 2005 bases
Years 2000 and 2005

Activities	Base 2000		Base 2005	
	2000	2005	2000	2005
Gross Domestic Product	**100,0**	**100,0**	**100,0**	**100,0**
Agriculture, hunting, forestry and fishing	9,6	8,8	8,3	7,7
Mining and quarrying	6,5	6,6	5,9	6,3
Manufacturing	14,5	15,6	13,9	14,1
Electricity, gas and water supply	3,1	3,3	3,3	4,0
Construction	3,7	5,8	4,2	5,6
Wholesale and retail trade, repair of motor vehicles, personal and household goods, hotels and restaurants	12,4	12,5	12,9	11,9
Transport, storage and communications	6,1	6,7	6,3	6,8
Financial intermediation. Insurance, real estate, renting and business activities	16,6	15,3	20,6	19,1
Social, community and personal services	20,3	17,6	17,4	15,9
Total Value added	**92,8**	**92,3**	**92,8**	**91,5**
Taxes less subsidies on products	7,2	7,7	7,2	8,5

Source DANE - DSCN

11.2 PRODUCTIVE STRUCTURE

Comparing the results of the two bases, some changes of the productive structure of year 2005 are observed, explained by the changes in the relative importance in the value of production (determined by the volumes produced and by the corresponding basic prices)

and by the behavior of the technical production relationships of the economic activities, in particular of the technical input/output coefficients (C.I. /Output).

Indeed, while certain activities increase their relative share (as financial and insurance services and business services), others lose ground in the structure of total GDP (as it is the case of agriculture).

11.3 ANALYSIS BY ACTIVITY

- **Agriculture, farming of animals, hunting, forestry, fishing and fish farming.** Its participation drops 1.1 points, due in particular to the fall of 0.4 points of the agricultural activity. The prices used in the two bases to value output were modified: in the 2000 base, wholesale prices were applied, whereas in the 2005 base, prices in the first regional market were observed, the latter being lower than the former. Another reason for the drop in the relative importance of the sector, is the increase that was observed in the technical coefficient of intermediate consumption of the cattle activity (28.9 in the 2000 base and 36.6 in the 2005 base), due to the increasing participation of highly technified activities, that are high consumers of inputs (such as poultry and pork raising) (Table 49).

Table 49. Technical coefficients of the agriculture, farming of animals, hunting, forestry, fishing and fish farming agriculture sector, according to economic activity. 2000 and 2005 bases
Year 2005

percentage

Activity	2000 Base	2005 Base
Agriculture, forestry and fishing	28,9	32,4
Coffee culture	20,1	16,9
Agriculture of other products	30,5	32,2
Farming of animals, hunting (incl. veterinary activities)	28,9	36,6
Forestry, logging and related service activities	23,9	25,9
Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	30,3	32,8

Source : DANE - DSCN   .

- **Operation of mines and quarries.** The participation of the sector does not present substantial changes, however two facts need to be pointed at:

First: the drop in the value added of the extraction of crude petroleum and the corresponding decrease in its participation in GDP, from 4,2% to 3,9%, due to the greater precision obtained in the breakdown of the financial statements of ECOPETROL, an information that was not available in the 2000 base.

Secondly, an important fall in the technical coefficient of the coal mining activity (from 42.2 to 23.9) as a result of the improvement in the classification of the operations found in the accounting statements and of the greater breakdown provided by the producing enterprises (in particular CARBOCOL).

- **Manufacture.** The fall in its value added (from 52,502 thousand million pesos in the 2000 base to 48,082 thousand million pesos in base 2005) and therefore of its importance in GDP (15,6% in the 2000 base and 14,1% in the 2005), obeys essentially to the increase observed in the technical coefficients of activities such as: the processing and preservation of meat and fish (code 10) (from 79,4% to 90,7%), manufacture of office, accounting and computing machines and other machines (code 33) (from 58,2% to 67,0%) and of manufacture of motor vehicles, trailers and semi-trailers and of other transport equipment (code 34) (from 71,0% to 85,3%), the latter also explained by the increasing import of finished transport equipment and CKD, whose commercialization and assembly generate less value added than the domestic manufacture of the components of motor vehicles. The mentioned behaviors have been verified by means of the detailed crossing of establishment data as collected through the EAM and the financial statements of the enterprises belonging to the sector.

Table 50. Technical coefficients for manufacturing, according to economic activity 2000 and 2005 bases
Year 2005

		percentage
Activity	2000 Base	2005 Base
Manufacturing	67.3	69.5
Production, processing and preservation of meat and fish	79.4	90.7
Manufacture of vegetable and animal oils and fats	79.4	78.4
Manufacture of dairy products	77.4	82.2
Manufacture of grain mill products,starches, bakery,noodles and similar	73.1	75.5
Manufacture of coffee products	91.3	88.5
Sugar mills and refineries	73.7	72.7
Manufacture of cocoa, chocolate and sugar confectionery	68.3	72.3
Manufacture of other food products n.e.c.	72.8	70.4
Manufacture of beverages	57.8	57.8
Manufacture of tobacco products	60.7	60.0
Preparation and spinning of textile fibres, weaving of textiles, and finishing of them	70.6	68.2
Manufacture of other textiles	63.3	61.8
Manufacture of wearing apparel, knitted and crocheted fabrics, dyeing and manufacture of fur articles	62.8	68.2

Cont…

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Table 50. Technical coefficients for manufacturing according to economic activity

2000 and 2005 bases
Year 2005   (cont.)

percentage

Activity	2000 Base	2005 Base
Tanning and dressing of leather; manufacture of footwear and travel accesories	67,9	65,8
Processing of wood, manufacture of products of wood and cork, except furniture	63,1	64,0
Manufacture of paper, paperboard and paper and paperboard products	70,5	71,3
Publishing and printing	60,8	60,7
Manufacture of coke,refined petroleum products and nuclear fuel	53,7	44,8
Manufacture of chemicals and chemical products except synthetic rubber	68,8	70,2
Manufacture of rubber and plastics products including synthetic rubber	70,6	71,4
Manufacture of other non-metallic mineral products	57,4	57,7
Manufacture of basic metallurgical products and of fabricated metal products, except machinery and equipment	67,5	71,9
Manufacture of machinery and equipment n.e.c.	64,3	65,2
Manufacture of office, accounting and computing machinery, electrical machinery, radio, television and communication equipment, medical, precision and optical instruments, watches and clocks and apparatus n.e.c	58,2	67,0
Manufacture of motor vehicles, trailers, semi-trailers and other transport	71,0	85,3
Manufacture of furniture	64,3	64,9
Other manufacturing n.e.c.	54,5	55,4
Recycling	4,2	0,0

Source: DANE - DSCN

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- **Public utilities**. This consolidated sector registers a gain of 1,0% in its share in GDP, derived from various considerations:

  Firstly, the share of activity 38 (Production, collection and distribution of electricity), was increased 0,2% in the 2005 base, based on the complete financial statements of all producing establishments, an information that was not available in the 2000 base.

  In the valuation of activity 39 (Manufacture of gas including that of coke oven products; distribution of gaseous fuels through mains), the 2000 base included propane gas, whereas in the 2005 base, the production of the latter was reclassified in activity 27 (Manufacture of refined petroleum products; processing of nuclear fuel). This situation explains the reduction of its production in 15,7% and, consequently, the modification of the corresponding technical coefficient of the activity (from 62,9% to 48,7%).

  The drop in output derived from the two above-mentioned situations (- 2,1%), was neutralized by the increase in the production of the service of water (69,6%), inasmuch as in base 2005 the production corresponding to rural aqueducts

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administered by farmers and users associations or served directly by small municipalities (Graph 18) that was not registered by the Superintendency of Public Utilities, was estimated.

Graph 18. Public Utilities. Structure of production
2000 and 2005 bases
Year 2005
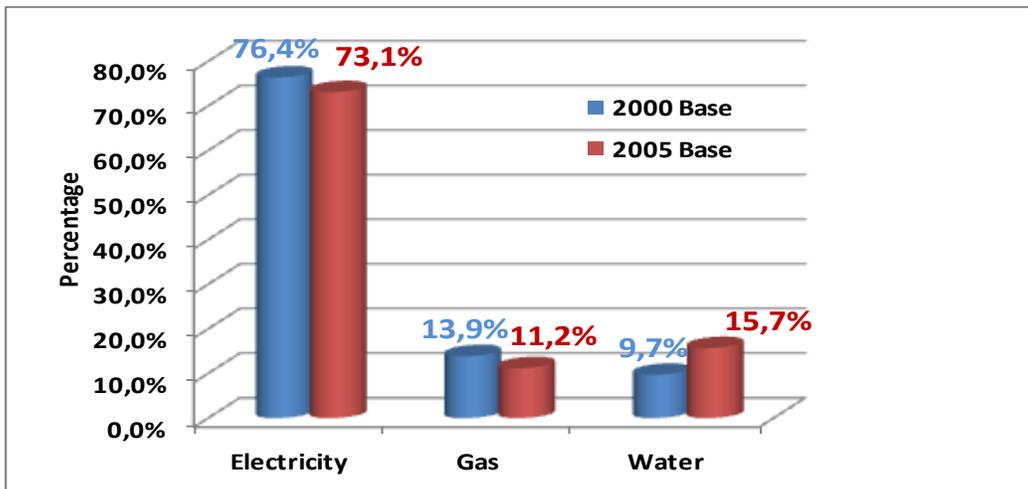
Source: DANE, DSCN

- **Construction.** Its participation in GDP slightly descends (0,3%) as a result of the combined effects of an increase in its production (6,1%) and the increase of 4.1 points in its technical coefficient, as a consequence of the update of the cost structures of the activity.

Table 51. Structure of the value added of construction and share in total GDP
2000 and 2005 bases
Year 2005

thousand million pesos and percentage

Activity	Value added 2000 Base	Share of GDP (%)	Value added 2005 Base	Share of GDP (%)
Gross Domestic Product	335.547	100	340.156	100
Building construction (for residential and non-residential use), including land preparation	11.005	3,3	9.945	2,9
Civil works and infrastructure construction, including the rental of equipment with operator	8.547	2,5	8.970	2,6
Total Construction	19.552	5,8	18.915	5,6

Source: DANE-DSCN   .

- **Trade and repairs.** When comparing the two bases, the activity presents a drop of 1,5% in its share in GDP, due to the transfer of the services of repair of machinery, that was included in trade in the 2000 base, and included in the industrial activity of

machinery and equipment production in the 2005 base (taking into consideration that an important part of it is carried-out as an after-sales operation).

Hotels and restaurants. The production of the activity of restaurants and bars has been the subject of a great re-sizing, based in particular on the tendencies observed in the Income and Expenditure Survey that showed an important increase in the consumption of food and beverages "outside the household". Its share in GDP grew from 1,5% in the 2000 base to 2,7% in the 2005 base. In this re-sizing, the production of the activities of provision of food and that of beverages were increased by 193,5% and 31,4% respectively, which confirms the tendencies observed in household surveys: decline in the purchases of fresh food and increase of the consumption of meals outside the household, with the consequent increase in the acquisition of food by restaurants, which generates significant changes in the structure of the demand of fresh products, particularly agriculture products (more intermediate consumption from productive activities, less household final consumption expenditure).

- **Financial intermediation, real estate, rentals and business services**: The share in GDP of this set of activities was increased in 3.8 points (from 15,3% in the 2000 base to 19,1% in the 2005 base). Two activities are the drivers of this relative increase:

The real estate services and rentals of dwellings increase their importance by 2.7 points, due to the update and adjustment of the stock of dwellings based on the results of the 2005 Census and to the greater breakdown in the estimations (by type of dwelling, number of rooms and socioeconomic stratum) (see chapter 7); in the 2000 base, only the socioeconomic stratum had been considered.

Additionally, the production of the real estate services was readjusted upwards, when including the productions corresponding to the administration of buildings.

The business services, except financial and real estate services, gained 1.4 points in their share due to the change in the treatment of employment agencies; in the 2005 base, their production is defined by their total invoice for services, whereas in the 2000 base it was defined as the difference between the invoiced value and the remuneration paid to the workers in mission, because the remuneration of the workers was assigned to the activities in which they were actually working.

The previous treatment was modified according to the recent international recommendations (SNA 2008 para. 19.21 "persons employed by temporary employment agencies, […] are to be included in the industry of the agency which employs them, and not in the industry of the enterprise for which they actually work").

On the other hand, the rental of construction equipment, considered in the 2000 base as being provided with operator and consequently as part of the construction activity, was transferred, in the 2005 base, to business services because the constructors informed that this service was mainly provided without an operator.

- **Public administration and defence.** The drop in 1.1 points in its share in GDP obeys to a strictly statistical reason: the consolidation of the information system of the General Accounting Office (CGN), which is the source of estimation of the activity.

  To a lesser extent, it is also attributed to the conclusion of the process of institutional transformation of some organizations of government, which meant, in base 2005, the inclusion of some entities in market activities (public hospitals, for example).

- **Other services.** This aggregate activity did not present significant changes in its share in GDP, when comparing the two bases.

  However, the following clarifications with respect to some of the activities that make up the aggregate need to be made:

  The social services and health market activities reduce their share in GDP (from 2,9% to 2,1%), due to a drop in 10,7% in the value of their output (in the 2005 base, a better quality information was available) and to the increase of the technical coefficient (from 52,9% to 60,2%), derived from the inclusion of the so-called intra-consumptions (purchases of healthcare services by healthcare service providers), when incorporating information provided by the Ministry of Social Protection.

  The services of sewerage, elimination of waste, cleaning and other services of environmental protection showed a relative gain in their share in GDP (from 0,3% to 0,5%), as a result of an increase in their production (plus 42,2%) which originated in the inclusion of the value of the recyclable products and in the reduction of the technical coefficient (from 39,9% to 31,8%), because this activity lacks raw materials.

  The structure of the Other community, social and personal service activities was substantially modified in base 2005 in spite of not registering major change in its importance.

  Some of the economic units part of the services of associations (NGO, trade unions, etc.) were reclassified as nonmarket services; on the other hand, the production of other activities was adjusted when consulting the levels of expenditure derived from the Household Income and Expenditure Survey; it refers to betting and gambling, to artistic services, to the promotion and the organization of cultural events, apparently overvalued in the 2000 base, were taken to their more real dimension, thanks to the information provided by the Territorial Entity for Health (ETESA) and by the Superintendency of Health and to the employment matrix that was set up for the 2005 base (see chapter 5). All this meant a drop of approximately 2,1 thousand million pesos.
  However, the above-mentioned reduction was compensated by an improved estimation of the "other personal services".

11.4 GROSS DOMESTIC PRODUCT, 2000 and 2005 BASES

- **The expenditure approach**

Table 52. Gross Domestic Product (GDP) and the main components of the expenditure approach, at current prices,
2000 and 2005 bases
Years 2000 and 2005

thousand million pesos

Conceptos	Base 2000		Base 2005	
	2000	2005	2000	2005
Supply				
Gross Domestic Product	196.374	335.547	208.531	340.156
Imports	37.052	70.576	34.933	63.896
Imports of goods	30.014	57.033	30.099	56.784
Imports of services	7.037	13.542	4.834	7.112
Net total supply	233.425	406.123	243.464	404.052
Demand				
Final consumption expenditure	168.524	275.630	179.214	277.953
Household final consumption expenditure	131.005	216.232	144.200	223.519
Government final consumtion expenditure	37.058	58.562	34.351	53.373
NPISH final consumption expenditure	461	837	663	1.061
Gross capital formation	30.760	72.538	31.062	68.783
Gross fixed capital formation	25.517	65.342	29.464	66.894
Change of inventories	5.175	7.054	1.598	1.889
Acquisitions less disposals of valuables	67	141	(…)	(…)
Internal Final Demand	199.283	348.168	210.276	346.736
Exports	34.142	57.955	33.188	57.316
Exports of goods	30.946	52.924	30.179	52.469
Exports of services	3.197	5.030	3.009	4.847

Source: DANE - DSCN

(…) not available

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In Table 53, it is possible to observe that in the 2005 base, the use whose share has experienced the higher relative change is the change in inventories, consequence of a detailed work, carried out particularly on this variable (agricultural inventories of products, mining products, products in the trade and the manufacture), both in current value and at constant prices (refer to chapter 3).

The change in the final consumption expenditure of government is symmetrical to the new evaluation of the non-market output of general government since by convention, the government consumes its own production of non-market services.

As far as household final consumption expenditure is concerned, although an important work was developed, using the surveys on Living Conditions and the Income and Expenditure Survey (refer to Chapter 4), its share in GDP between the two bases underwent only a slight change (from 64,4% to 65,7%).

Table 53. Shares of the different components of demand, within total net supply, 2000 and 2005 bases
Years 2000 and 2005

	2000 Base		2005 Base	
Concepts	2000	2005	2000	2005
Supply				
Gross Domestic Product	84,1	82,6	85,7	84,2
Imports	15,9	17,4	14,3	15,8
Imports of goods	12,9	14,0	12,4	14,1
Imports of services	3,0	3,3	2,0	1,8
Total net supply	100,0	100,0	100,0	100,0
Demand				
Final consumption expenditure	72,2	67,9	73,6	68,8
Household final consumption expenditure	56,1	53,2	59,2	55,3
Government final consumption expenditure	15,9	14,4	14,1	13,2
NPISHs final consumption expenditure	0,2	0,2	0,3	0,3
Gross capital formation	13,2	17,9	12,8	17,0
Gross fixed capital formation	10,9	16,1	12,1	16,6
Change in inventories	2,2	1,7	0,7	0,5
Acquisition less disposals of valuables	(…)	(…)	(…)	(…)
Internal Final demand	85,4	85,7	86,4	85,8
Exports	14,6	14,3	13,6	14,2
Exports of goods	13,3	13,0	12,4	13,0
Exports of services	1,4	1,2	1,2	1,2

DANE. Dirección de Síntesis y Cuentas Nacionales

(…): not available

The apparent loss of relative importance of Gross Capital Formation is explained by the direct evaluation of the Change in Inventories. On the contrary, the Gross Fixed Capital Formation (the gross investment in physical or intangible nonfinancial assets) gains in participation.

The changes in the imports and exports are explained by the new calculations of smuggling (an inter-institutional project, involving the National Tax and Customs Directorate (DIAN), the Central Bank, and DANE), a revision of the transactions related to the free trade zones, a revaluation of the data referring to illicit crops and the new calculation of the Financial Intermediation Services Indirectly Measured (FISIM).

- **The income approach**

Table 54. Gross domestic product (GDP) according to the income approach, at current prices .
2000 and 2005 bases
Year 2005

thousand million pesos

Concepts	2000 Base		2005 Base	
	Value	%	Value	%
Gross Domestic Product	335.547	100,0	340.156	100,0
Compensation of employees	106.125	31,6	109.731	32,3
Taxes on production and imports	33.231	9,9	36.458	10,7
Subsidies (-)	482	0,1	540	0,2
Gross Operating Surplus	110.425	32,9	112.304	33,0
Gross mixed income	86.248	25,7	82.203	24,2

Source : DANE - DSCN

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Most of the components of GDP, according to the income approach, present only slight changes (although a detailed work was carried out on the incomes of households, using the employment matrix). The taxes on production and imports, partly gain participation, because their value has been increased due to the reclassification of the tax on financial movements (3.227 thousand million pesos).

- **Growth in volume.** In terms of growth in volume, the 2005 base presents more significant differences. Three aspects contribute to this situation: the new sources of information that have been used, the changes in a certain number of treatments (FISIM, changes in inventories), and the new mathematical formula used to determine the growth in volume by means of chained indices (see chapter 2). This formula provides better results for the measurement of the growth in volume, but, as it has been already mentioned, it has the disadvantage of not being additive, that is, that the value at constant prices of an aggregate (sum or difference of elementary variables) is not the aggregate (sum or difference) of these elementary variables at constant prices. These differences in growth rates are shown in the following tables (54 to 56), in which again GDP is presented according to its main components, its growth in volume and the growth of these components.

- Except for year 2004, the growth rates of the economy derived from the new calculation are smaller than the rates calculated for the 2000 base. For year 2007, the calculation corresponding to the 2000 base is provisional. The changes between both bases concern mainly the levels of production, since the growth of intermediate consumption is generally slower in the 2005 base as compared to that observed in the 2000 base (Graph 19).

Table 55. Annual growth rates in volume of the components of Gross Domestic Product (GDP) within the production approach
2000 and 2005 bases
(2001-2007)

percentages

Concepts	2000 Base						
	2001	2002	2003	2004	2005	2006	2007
Gross Domestic Product	2,2	2,5	4,6	4,7	5,7	6,9	7,5
Output	2,8	3,7	5,3	5,5	5,6	7,4	7,7
Intermediate consumption (-)	3,6	5,5	6,2	6,8	5,7	8,3	8,3
Value added	2,1	2,3	4,5	4,3	5,5	6,5	7,2
Taxes less subsidies on products	3,1	5,1	6,4	8,9	8,0	11,6	11,5
Taxes on products	3,1	5,0	6,0	8,7	7,9	11,4	11,4
Non-deductible value added tax (VAT)	2,9	6,6	6,7	7,7	8,6	11,6	11,4
Taxes and duties on imports excluding VAT	9,4	2,4	8,0	16,9	13,8	23,8	16,9
Other taxes on products	0,3	3,0	3,3	6,5	2,6	2,6	6,9
Subsidies on products (-)	2,6	1,7	-8,2	2,4	3,8	3,2	7,2

Concepts	2005 Base						
	2001	2002	2003	2004	2005	2006	2007
Gross Domestic Product	1,7	2,5	3,9	5,3	4,7	6,7	6,9
Output	1,6	2,8	3,9	5,5	4,7	6,8	6,5
Intermediate consumption (-)	1,8	2,9	4,1	5,6	4,8	7,4	6,6
Value added	1,6	2,6	3,8	5,4	4,7	6,3	6,4
Taxes less subsidies on products	3,2	0,7	5,4	4,7	4,9	11,0	11,6
Taxes on products	3,2	0,7	5,4	4,9	4,9	10,9	11,5
Non deductible value added tax (VAT)	0,9	0,3	6,3	5,0	4,3	11,8	12,3
Taxes and duties on imports excluding VAT	12,5	4,0	8,2	13,0	15,9	22,3	19,0
Other taxes on products	3,8	0,0	2,4	1,7	2,8	5,0	6,7
Subsidies on products (-)	1,8	1,6	3,5	8,8	3,8	3,7	3,7

Source DANE - DSCN

Graph 19. Gross Domestic Product (GDP) growth rate in volume
2000 and 2005 bases
2001-2007
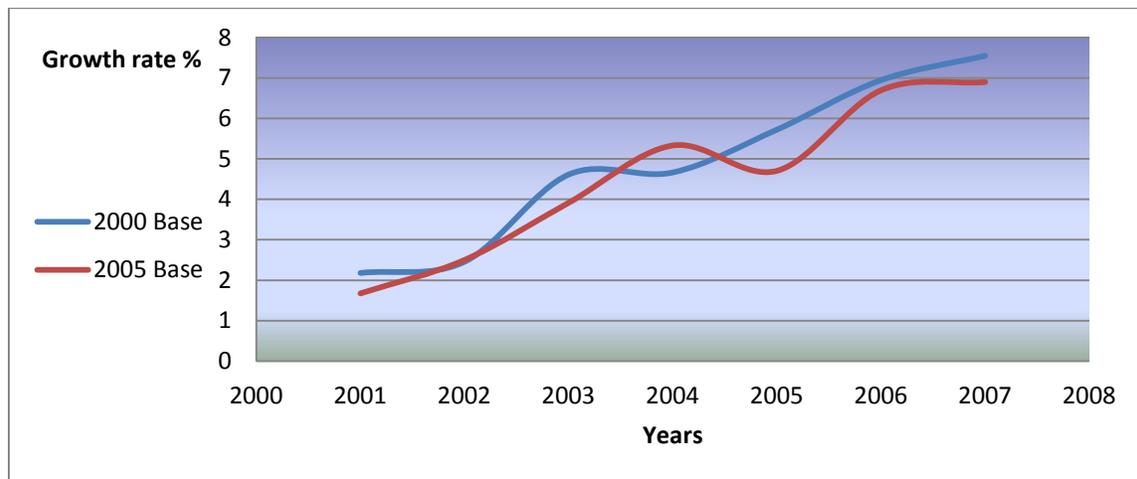
Source: DANE, DSCN
 For the 2000 base, the data corresponding to year 2007 are provisional.

Table 56. Annual growth rates of the components of Gross Domestic Product (GDP) according to the expenditure approach in volume
2000 and 2005 bases
2001-2007

percentage

Concepts	2000 Base						
	2001	2002	2003	2004	2005	2006	2007
Supply							
Gross Domestic Product	2,2	2,5	4,6	4,7	5,7	6,9	7,5
Imports	8,5	1,7	5,8	13	17	16,2	13,9
Imports of goods	9,6	3,5	6,8	13,8	17,9	17,7	14,8
Imports of services	3,7	-6,3	0,7	8,8	12,1	8	8
Net total supply	3,2	2,3	4,8	6,1	7,7	8,7	8,9
Demand							
Final consumption expenditure	2,9	3,3	3,5	3,9	5,1	6,2	6,9
Household final consumption expenditure	2,6	3,1	3,5	3,7	4,7	6,8	7,6
Government final consumption expenditure	3,7	3,9	3,4	4,6	6,4	4,2	4,5
NPISHs final consumption expenditure	11,6	9,6	1,8	3	3,8	13,7	4,4
Gross capital formation	7,9	2,2	14,5	13	19,9	19,1	13,7
Gross fixed capital formation	10,4	7	14,1	13,7	21,2	17,2	15,2
Change in inventories	(…)	(…)	(…)	(…)	(…)	(…)	(…)
Acquisition less disposal of valuables	(…)	(…)	(…)	(…)	(…)	(…)	(…)
Final domestic demand	3,7	3,1	5,2	5,5	7,8	8,9	8,5
Exports	0,4	-2,6	2,2	10	7,2	8	11,4
Exports of goods	0,5	-1,9	1,5	10,3	7,1	6,8	13,2
Exports of services	-0,3	-9,1	9,1	6,8	8,6	19,7	-4,9

Concepts	2005 Base						
	2001	2002	2003	2004	2005	2006	2007
Supply							
Gross Domestic Product	1,7	2,5	3,9	5,3	4,7	6,7	6,9
Imports	8,7	0,3	8,2	10,3	11,9	20	14
Imports of goods	8,6	1	8,9	10,9	13,8	20,7	15,1
Imports of services	9,6	-3,2	4,2	6,9	-0,6	13,7	4,9
Net total supply	2,7	2,2	4,6	6,2	5,9	8,8	8,1
Demand							
Final consumption expenditure	1,7	1,5	2,7	4,3	4,3	6,3	7
Household final consumption expenditure	1,5	2	3	3,9	4	6,4	7,3
Government final consumption expenditure	2,2	-0,6	1,8	6,4	5,2	5,5	6,1
NPISHs final consumption expenditure	0,9	5,8	-0,7	3,1	6,9	9,5	-0,5
Gross capital formation	8,4	10,1	11,4	11,2	12,8	19,2	13
Gross fixed capital formation	9,7	11,1	11,5	11,1	13,2	18,1	14,4
Change in inventories	(…)	(…)	(…)	(…)	(…)	(…)	(…)
Acquisition less disposal of valuables	(…)	(…)	(…)	(…)	(…)	(…)	(…)
Final domestic demand	2,7	2,8	4,2	5,6	5,9	8,8	8,3
Exports	2,8	-2,4	7,4	9,8	5,7	8,6	6,9
Exports of goods	2,8	-1,5	6,5	9,8	6,2	7,5	8,7
Exports of services	2,9	-10,3	15,7	9,5	1,1	20	-11,6

source: DANE - DSCN

(…): not defined / not available

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**Table 57. Annual growth rates of the main economic activities in volume
2000 and 2005 bases
2001-2007**

percentage

Activity	2000 Base						
	2001	2002	2003	2004	2005	2006	2007
Gross Domestic Product	2,2	2,5	4,6	4,7	5,7	6,9	7,5
Agriculture, animal farming, hunting, forestry and fishing	0,5	5,3	3,2	1,8	2,4	3,9	3,9
Mining and quarrying	-7,2	-2,4	0,9	-0,9	1,7	3,2	2,9
Manufacturing	1,6	1	7,3	5,3	5,4	6,8	9,5
Electricity, gas and water distribution	5	1	3,3	2,9	3	3,1	3,7
Construction	1,6	3,2	14,7	13,4	12,8	13,5	11,5
Wholesale and retail trade, repair,hotels and restaurants	3,4	2,9	5,8	6	7,3	8,7	8,7
Transport, storage and communications	4,7	2,5	5,2	5	8,7	9,2	11
Financial intermediation, real estate, renting and business activities	5,1	6,1	5,7	3,9	5,5	6,7	7,3
Social, community and personal service activities	1,8	-0,6	0,2	3,6	4,6	4,7	4,7
Total Value added	2,1	2,3	4,5	4,3	5,5	6,5	7,2
Taxes less subsidies on products	3,1	5,1	6,4	8,9	8	11,6	11,5

Activity	2005 Base						
	2001	2002	2003	2004	2005	2006	2007
Gross Domestic Product	1,7	2,5	3,9	5,3	4,7	6,7	6,9
Agriculture, animal farming, hunting, forestry and fishing	1,8	4,5	3,1	3	2,8	2,4	3,9
Mining and quarrying	-8,3	-1,8	1,7	-0,9	4,1	2,4	1,5
Manufacturing	2,9	2,1	4,9	7,9	4,5	6,8	7,2
Electricity, gas and water distribution	3,2	0,8	4,5	3,5	4,1	4,8	4,1
Construction	5,5	12,3	8,3	10,7	6,9	12,1	8,3
Wholesale and retail trade, repair,hotels and restaurants	2,9	1,5	3,7	7,1	5	7,9	8,3
Transport, storage and communications	3,3	2,8	4,5	7,6	7,8	10,8	10,9
Financial intermediation, real estate, renting and business activities	1,2	3	3,9	4,6	5	6,4	6,8
Social, community and personal service activities	1,3	1,7	2	4,1	3,5	4,4	5
Total Value added	1,6	2,6	3,8	5,4	4,7	6,3	6,4
Taxes less subsidies on products	3,2	0,7	5,4	4,7	4,9	11	11,6

Source: DANE - DSCN

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11.5 THE ACCOUNTS OF THE INSTITUTIONAL SECTORS IN THE 2005 BASE AND COMPARISON WITH THEIR REPRESENTATION IN THE 2000 BASE

The accounts of the institutional sectors complement the accounts of GDP, since they integrate the other economic transactions between the economic agents, which influence their income, their savings and their net lending or borrowing.

All differences between the 2000 base and the 2005 base, concerning activities, are reflected immediately at the level of the institutional sectors (Table 57).

The aggregated accounts of each of the institutional sectors are presented in the following table, where entries of lesser importance for the sector in question, have been grouped to make them more legible. Subsequently, some summarized tables of the main macroeconomic variables are included, in which the contributions of each one of the institutional sectors are emphasized. In DANE's web page, the complete tables can be consulted (refer to the following URL: **http://www.dane.gov.co/daneweb_V09/index.php?option=com_content&view=article&id=127&Itemid=84**).

Table 58. Value added, according to institutional sectors
2000 and 2005 bases
Year 2005

| | Value added | | Share % | |
| | Base year | | Base year | |
Institutional sectors	2000	2005	2000	2005
Total economy	309.645	311.281	100,0	100,0
Non-financial corporations	139.373	143.180	45,0	46,0
Financial institutions	13.390	13.053	4,3	4,2
Government	33.685	31.238	10,9	10,0
Households	122.639	123.136	39,6	39,6
NPISHs	558	674	0,2	0,2

thousand million pesos

Source: DANE - DSCN

- **Non-financial corporations.** In the case of non-financial corporations, there are significant differences in several of their headings, such as:

- The difference in gross value added, of around 3.8 billion pesos, is almost exclusively reflected in a similar increase in the compensation of employees: this increase is attributed, on the one hand, to a greater coverage of employment agencies (in particular the cooperatives of associated work) and on the other, to an improvement in the analysis of the expenditures of corporations, in particular in the mining sector, which previously were mostly classified as intermediate consumption, and that are now distributed between intermediate consumption and gross capital formation.

- With respect to the interests received and paid, the larger difference is observed in the interests received, and derives from the new calculation of FISIM, and a change in the treatment of holding gains that were considered as interest in the 2000 base, and that in the 2005 base are considered as *other changes in the volume of assets*, which only affects the revaluation of net worth and do not correspond to transactions between agents.

- As a result of these modifications and of the improvement of the other items, gross primary incomes increased in approximately 816 thousand million pesos.

- The taxes on income fell in approximately 2.901 thousand million pesos. This decrease is mainly induced by the reclassification of the tax on financial movements, which is no longer viewed as a tax on income but as a tax on product.

- As a consequence, the gross disposable income of corporations fell by approximately 2.416 thousand million pesos.

- Finally, the gross capital formation of non-financial corporations fell by approximately 4.419 thousand million pesos, as a result of the change in the calculation of the change in inventories, both at current and constant prices (Table 58).

Table 59. The economic accounts of non-financial corporations
2000 and 2005 bases
Year 2005

thousand million pesos

Uses			Resources		
Concepts	Base year		Concepts	Base year	
	2000	2005		2000	2005
			Gross value added	139.373	143.181
Compensation of employees	50.094	54.240			
Taxes less subsidies on products and imports	4.841	5.094			
Gross operating surplus	84.438	83.847	Gross operating surplus	84.438	83.847
Interest	11.082	12.458	Interest	7.102	7.954
Other rent	31.386	30.554	Other rent	2.707	2.173
Gross balance of primary income	51.779	50.963			
			Gross balance of primary income	51.779	50.963
			Social contributions and other current transfers	2.702	3.122
Taxes on income	15.803	12.912			
Social contributions and other transfers	4.911	4.990			
Gross disposable income	33.767	36.183			
			Gross disposable income	33.767	36.183
Adjustment for the change in the net equity of households in pension funds	-675	-703			
Gross savings	34.442	36.887			
			Gross savings	34.442	36.887
			Capital transfers	495	432
Gross capital formation	47.442	43.023			
Net lending (+) / Net borrowing(-)	-12.505	-5.705			

Source: DANE - DSCN

- **Financial corporations.** The accounts of the financial corporations are elaborated with much the same sources of information for the 2000 base as for the 2005 base, so that no important differences in the estimations of their economic accounts induced by this change are expected.

  Nevertheless, several facts have modified the macroeconomic representation of this sector:

- On the one hand the change in the calculation of FISIM, by which the securities were excluded from the base of calculation because the financial sector has no

discretion on the interest rates being charged; this, therefore, induced difference in the record of interests (net of FISIM).

- Holding gains were excluded from the interests received by pension funds, which substantially modified the amount of property income attributed to insurance policy holders, dividends and other rents, that decreased from 9.954 thousand million pesos in the 2000 base to 7.179 thousand million pesos in the 2005 base. Additionally, the amount of social contributions was also substantially modified, as a result of a better interpretation of the amounts reported by the insurance companies that manage risks Law 100 (pensions) and by the pension funds.

Finally, and as a result of these adjustments, the global net lending of this sector was reduced from 6.782 thousand million pesos to 2.003 thousand million pesos (Table 59).

Table 60. The economic accounts of financial corporations - 2000 and 2005 bases Year 2005

thousand million pesos

Uses			Resources		
Concepts	Base year		Concepts	Base year	
	2000	2005		2000	2005
			Gross value added	13.390	13.053
Compensation of employees	4.676	4.922			
Taxes less subsidies on products and imports	696	444			
Gross operating surplus	8.018	7.687			
			Gross operating surplus	8.018	7.687
Interest	8.647	11.569	Interest	17.098	15.571
Property income attributed to insurance policy holders, dividends and other rents	9.954	7.179	Property income attributed to insurance policy holders, dividends and other rents	784	1.481
Gross balance of primary income	7.299	5.992			
			Gross balance of primary income	7.299	5.991
			Social contributions	9.259	7.534
			Others currents transfers- net of non-life insurance premiums	10.465	10.185
Taxes on income	1.771	1.676			
Oher current transfers and social benefits other than social transfers in kind	11.542	13.016			
Gross disposable income	13.710	9019			
			Gross disposable income	13.710	9.019
Adjustment for the change in net equity of households in pension funds	7.750	7.120			
Gross saving	5.960	1.899			
			Gross saving	5.960	1.899
			Receivable capital transfers	932	955
Gross capital formation	110	850			
Net lending (+) / Net borrowing (-)	6.782	2.003			

Source: DANE - DSCN

- **General government.** The gross value added of general government was reduced from 33.685 thousand million pesos in the 2000 base, to 31.238 thousand million pesos in the 2005 base, as a result of a decrease in the evaluation of the consumption of fixed capital of general government and of a better distribution of the expenses of the general government between intermediate consumption and compensation of employees.

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Since the 2000 base, the fixed capital consumption of the general government is a component of the production cost of the general government non-market services and is a component of its gross value of production, gross value added and operating surplus. Its calculation is based on the method of permanent inventory; the calculations have been reviewed, in particular, the service life of a great number of the assets that are considered (refer to chapter 9).

Due to the new calculations of FISIM, the amounts of interests received and paid underwent important modifications.

As far as the amounts of taxes less subsidies on production and imports are concerned, they increased from 32.748 thousand million pesos (2000 base) to 35.918 thousand million pesos (2005 base). This change is due to the new treatment of the tax on financial movements (refer to chapter 8) and a new estimation of a certain number of local taxes, derived from a more detailed work on the local organizations, based on a total enumeration in the 2005, whereas a sample was used in the 2000 base. The change of classification of the tax on financial movements also affected, but negatively, the amount of current taxes on income, wealth, etc. received.

Regarding social benefits other than social transfers in kind, they rose from 20.880 thousand million pesos (2000 base) to 22.913 thousand million pesos (2005 base). This increase is explained by the new calculation of the pensions paid by the Instituto de Seguros Sociales (ISS) and by other organizations of the central subsector, as well as of a new estimation of the imputed benefits paid by the local subsector.

The estimation of actual final consumption, that represents the value of the production of non-market collective services by general government, decreases as a consequence of both the lower level of value added, as it has already been commented, as well as a lower level of intermediate consumption, attributable to the new calculation of FISIM, to the reclassification of expenses between intermediate consumption and compensation of employees and the new calculation of the accounts of the local government (Table 60).

Table 61. The economic accounts of general government 2000 and 2005 bases Year 2005

thousand million pesos

Uses			Resources		
Concepts	Bases		Concepts	Bases	
	2000	2005		2000	2005
			Gross value added	33.685	31.238
Compensation of employees	27.816	26.478			
Taxes less subsidies on production and imports	984	762			
Gross operating surplus	4.885	3.998	Gross operating surplus	4.885	3.998
			Taxes less subsidies on production and imports	32.748	35.918
			Interests	6.485	3.169
Property income	10.653	13.346			
			Other property income	8.453	7.891
Balance of primary income (gross)	41.918	37.630	Balance of primary income (gross)	41.918	37.630
Current taxes on income, wealth, etc.	148	77	Current taxes on income, wealth, etc.	22.225	18.568
			Social contributions	17.581	17.799
Social benefits other than transfers in kind	20.880	22.913			
Other current transfers	35.732	32.670	Other current transfers	36.703	36.045
Gross disposable income	61.667	54.380	Gross disposable income	61.667	54.380
Social transfers in kind	21.266	21.936			
Actual final consumption	37.296	31.437			
Gross saving	3.105	1.007	Gross saving	3.105	1.007
			Net receivable capital transfers	-1.429	-1.521
Gross capital formation	11.552	9.757			
Net lending (+) / net Borrowing (-)	-9.876	-10.270			

Source: DANE - DSCN

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- **Economic accounts of households.** The increase in households gross operating surplus is due exclusively to the new calculation of the imputed rentals corresponding to owner-occupied dwellings based on the data of the 2005 Population and Housing Census, and to the implementation of a more detailed methodology, that takes into account stratum and number of rooms of the dwelling (refer to chapter 7).

  The new estimations of both mixed income as well as of the compensation of employees were in part the result of the consistency study of employment by occupational position with the production accounts of the activities (refer to chapter 5).

The decrease of the income coming from property income is explained mainly by the reduction observed in the accounts of the financial corporations of property income attributed to insurance policy holders, dividends and other rents that were commented previously.

The increase of actual final consumption, from 238.335 thousand million pesos in the 2000 base to 246.518 thousand million pesos in the 2005 base, is explained by the direct estimation of household final consumption that was performed in the 2005 base, while in

the 2000 base, this heading was obtained by difference. It is also the consequence of the underestimation of this heading in the 2000 base, a counterpart of the overvaluation of the change in inventories (Table 61).

Table 62. The economic accounts of households - 2000 and 2005 bases
Year 2005

thousand million pesos

Uses			Resources		
Concepts	Bases		Concepts	Bases	
	2000	2005		2000	2005
			Gross value added	122.639	123.136
Compensation of employees	22.984	23.426			
Taxes less subsidies on production and imports	323	737			
Gross operating surplus	13.084	16.770	Gross operating surplus	13.084	16.770
Gross mixed income	86.248	82.203	Gross mixed income	86.248	82.203
			Compensation of employees	107.485	112.545
Interests	5.887	4.860	Interests	4.427	11.750
			Other property income	21.469	18.218
Balance of primary income (gross)	226.826	236.626	Balance of primary income (gross)	226.826	236.626
			Social benefits other than transfers in kind	24.226	26.116
Current taxes on income, wealth, etc.	4.012	3.903			
Social contributions	28.404	26.685			
Other current transfers	2.405	4.514	Other current transfers	18.085	15.368
Gross disposable income	234.316	243.008	Gross disposable income	234.316	243.008
			Social transfers in kind	22.103	22.997
			Adjustment for the change of net equity of households in pension funds	7.074	6.417
Actual final consumption	238.335	246.518			
Gross saving	25.158	25.904	Gross saving	25.158	25.904
			Net receivable capital transfers	1	131
Gross capital formation	13.367	15.003			
Net lending (+)/net borrowing (-)	11.792	10.963			

Source: DANE - DSCN