

Economic and Labour Market Paper

2007/10

Recent dynamics in Brazil's labour market

Christoph Ernst

Employment Analysis and Research Unit
Economic and Labour Market Analysis Department

Copyright © International Labour Organization 2008
First published 2008

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to ILO Publications (Rights and Permissions), International Labour Office, CH-1211 Geneva 22, Switzerland, or by email: pubdroit@ilo.org. The International Labour Office welcomes such applications.

Libraries, institutions and other users registered in the United Kingdom with the Copyright Licensing Agency, 90 Tottenham Court Road, London W1T 4LP [Fax: (+44) (0)20 7631 5500; email: cla@cla.co.uk], in the United States with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923 [Fax: (+1) (978) 750 4470; email: info@copyright.com] or in other countries with associated Reproduction Rights Organizations, may make photocopies in accordance with the licences issued to them for this purpose.

ILO Cataloguing in Publication Data

Ernst, Christoph

Recent dynamics in Brazil's labour market. Economic and labour market paper / Christoph Ernst ; International Labour Office, Employment Analysis and Research Unit, Economic and Labour Market Analysis Department. - Geneva: ILO, 2008

1 p. (Economic and labour market paper ; 2007/10)

ISBN: 978-92-2-120572-2; 978-92-2-120573-9 (web pdf)

ISSN: 1994-8255; 1994-8263 (web pdf)

International Labour Office

employment creation / labour supply / economic development / Brazil

13.01.3

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

ILO publications can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. Catalogues or lists of new publications are available free of charge from the above address, or by email: pubvente@ilo.org

Visit our website: www.ilo.org/publns

Printed in Switzerland

Preface

In the 1990s, after years of inward-looking development strategies, Brazil decided to open up its economy and limit the role of the state through privatization and deregulation programmes. This strategy was accompanied by macroeconomic stabilization policies that used the exchange rate as an anchor for monetary policies. However, the fiscal and monetary policies proved unsustainable, leading to an economic crisis in 1999 and the establishment of a flexible exchange rate system and inflation targeting. The 1990s were characterized by periods of instability, but since 2000, the country has been experiencing steady economic growth. Only minor reforms have been made in the labour market, including the introduction of greater flexibility; however, since the 1990s, the de facto flexibilization of the labour market has increased. Generally, Brazil's new development strategy has led to important structural changes in production.

The main objective of this study is to assess the evolution of the labour market in Brazil between 1992 and 2004, to examine whether the overall employment situation has improved and to identify the factors behind this evolution.

It is clear that during the period of analysis, the overall employment situation did not improve, but actually stagnated. The rising unemployment rate, especially in the urban areas and among women and young people, is a particular cause of concern. The long-term unemployed tend to be those with higher education, whilst people with low levels of education tend to be short-term unemployed, entering and exiting the labour market frequently. These people often experience precarious forms of employment or underemployment. Supply-side pressure remains strong as a result of a growing working-age population seeking to enter the labour force; this is particularly true in the urban areas and among those with higher education. The rapidly increasing female participation rate is a new phenomenon. The study also reveals a structural change in the Brazilian labour market since the end of the 1990. Employment growth accelerated, particularly in the formal segment of the labour market, but as productivity in both segments of the labour market has stagnated, we may assume that this growth was rather labour-intensive.

Brazil's policy-makers must give clear priority to reversing the rising trend in urban unemployment and urban non-formal employment, both of which are significant sources of social conflict in urban areas. Recent data show positive developments. Moreover, productivity, in particular in the non-formal segment of the labour market, must be improved, in order to narrow the gap with the formal segment. Poor working conditions and the productivity of workers in the non-formal segment of the economy must also be addressed. Despite recent improvements, the educational level of Brazilian workers is still below the international average. Raising the educational and skill levels of the Brazilian labour force would increase productivity in both the formal and the non-formal segments of the economy. Another major challenge is to improve the business environment for the self-employed and for micro enterprises by addressing their lack of access to financing and new technologies, as well as by improving the skill level of their labour force. The narrowing gender gap is a positive trend, but more needs to be done, in particular to ensure that women receive the same wages for the same jobs as men, and that they are given the same job opportunities.

Peter Auer
Chief, Employment Analysis
and Research Unit

Duncan Campbell
Director, Economic and
Labour Market Analysis Department

Acknowledgements

The views in this paper are those of the author and do not necessarily express the views of the International Labour Office. Specific thanks are due to Vandeli dos Santos Guerra and Marcia Quintslr who made valuable statistical data available. All remaining errors are mine.

Table of contents

| | |
|--|-----------|
| Introduction..... | 1 |
| 1. Dualism of the Brazilian economy and labour market..... | 2 |
| 1.1. Dualism by productivity of economic sectors | 2 |
| 1.2. Dualism by employment status | 3 |
| 1.3. Dualism by firm size | 5 |
| 1.4. Comparison of proposed criteria..... | 7 |
| 2. Employment creation in Brazil | 8 |
| 2.1. General employment and unemployment trends | 8 |
| 2.2. Evolution of employment by segments of the labour market..... | 11 |
| Evolution by employment status categories | 11 |
| Evolution of productivity by employment status..... | 14 |
| 3. The importance of the evolution of labour supply | 16 |
| 4. Synthesis: Main factors explaining the overall evolution of employment | 20 |
| 4.1. Evolution of employment using the employment situation index..... | 20 |
| 4.2. A special gender focus: The evolution of the gender inequality gap..... | 24 |
| 5. Concluding remarks | 30 |
| Appendix..... | 32 |
| Bibliography | 38 |

List of tables and figures in text

| | |
|--|----|
| Table 1: Share of non-formal and formal employment by productivity, 2003..... | 3 |
| Table 2: Distribution of employment by major employment status, 2004 | 4 |
| Table 3: Employment status categories by average number of years of education, agricultural and non-agricultural sectors, 2004..... | 5 |
| Table 4: Dualism in Brazil's labour market by three main categories, non-agricultural sector, 2003, 2004..... | 7 |
| Table 5: Evolution of the unemployment rate (per cent) by location, 1992-2004..... | 9 |
| Table 6: Evolution of the employment-to-population rate, by location (%), 1992-2004 | 11 |
| Table 7: Evolution of formal and non-formal employment by employment status category and sector , 1992-2004 | 13 |
| Table 8: Evolution of formal and non-formal employment by years of education, according to employment status categories and sector, 1992-2004..... | 14 |
| Table 9: Evolution of the labour force by gender and location, 1992-2004 | 16 |
| Table 10: Evolution of the working age population growth by gender and location, 1992-2004 | 17 |
| Table 11: Labour force participation rates, by average years of education, gender and location, 1992-2004..... | 18 |
| Table 12: Evolution of the participation rate, by gender and location, 1992-2004..... | 19 |
| Table 13: Overall Employment Situation Index for Brazil, 1992-2004 | 21 |
| Table 14: Gender gap in evolution of employment (employment-to-population ratio), by location, 1992-2004 | 25 |
| Table 15: Gender gap in evolution of unemployment, by location, 1992-2004..... | 25 |
| Table 16: Gender gap by average years of education of the unemployed, by location, 1992 - 2004..... | 26 |
| Table 17: Distribution of employment by sector and gender 1992, 1998, 2004..... | 26 |

| | |
|---|----|
| Table 18: Employment of men and women by employment status categories, agricultural and non-agricultural sectors, 1992, 2004..... | 27 |
| Table 19: Gender gap in the evolution of income, employment ratio and ratio of formal to total employment, 1992-2004..... | 29 |
| Table 20: Gender inequality gap index (GIGI), 1992-2004..... | 30 |
| Figure 1: Share of formal and non-formal employment in non-agricultural sectors, by firm size, 2004 | 6 |
| Figure 2: Unemployment rate by educational levels, 1992-2004 | 10 |
| Figure 3: Evolution of the share of formal employment in total employment, by employment status categories and sector, 1992-2004..... | 12 |
| Figure 4: Evolution of productivity a, formal and non formal employment, 1992-2003 | 14 |
| Figure 5: Evolution productivity gap between formal and non-formal employment, 1992 2003 | 15 |
| Figure 6: Labour force by educational levels (years of education), 1992-2004 | 19 |
| Figure 7: Evolution of unemployment, employment and the labour force, 1992-2004 | 22 |
| Figure 8: Economic growth per capita and the overall employment situation, 1992-2003 | 24 |
| Figure 9: Gender gap in share of formal employment in total employment, 1992 to 2004..... | 28 |
| Figure 10: Gender gap in evolution of income from primary job, 1992-2004 | 29 |

List of tables and figures in Appendix

| | |
|---|----|
| Table A: Productivity and employment by sector, 1992, 2003 | 32 |
| Table B: Evolution of the unemployment rate, by location, 1992-2004..... | 33 |
| Table C: Unemployed by average years of education, by gender and location, 1992, 1994..... | 33 |
| Table D: Evolution of the employment-to-population ratio (%), by location, 1992-2004 | 34 |
| Table E: Evolution of the labour force, by gender and location, 1992-2004..... | 35 |
| Table F: Evolution of the working age population, by gender and location, 1992-2004 | 35 |
| Table G: Evolution of the productivity of non-formal workers, the employment ratio and the ratio of formal to total employment, 1992-2003 | 36 |
| Table H: Indexed employment indicators and ESI, 1992-2003..... | 37 |
| Table I: Evolution of gender inequality gap index and related indexed indicators, 1992 2004..... | 37 |
| Figure A: Evolution of formal and non-formal employment, 1992-2004 | 34 |
| Figure B: Evolution of the labour intensity, formal employment, 1992-2003 | 36 |

Abbreviations and acronyms

CELADE: Centro Latinoamericano y Caribeño de Demografía

DIEESE: Departamento Intersindical de Estatística e Estudos Socioeconômicos

EUROSTAT: Statistical Office of the European Community

GDP: Gross domestic product

IBGE: Instituto Brasileiro de Geografia e Estatística.

ICLS: International Conference of Labour Statisticians.

PEA: Population, economically active

PNAD: Pesquisa Nacional por Amostra de Domicílios

PME: Pesquisa Mensal de Emprego

Introduction

The early 1990s marked the start of a period of considerable change in Brazil's development model. After years of inward-looking development strategies, Brazil decided to open up its economy and reduce the role of the state as an active player through privatization and deregulation programmes. It also focused on macroeconomic stabilization, using the exchange rate as an anchor for its fiscal policies. However, these policies proved to be unsustainable, and led to an economic crisis in 1999 and the establishment of inflation targeting and a flexible. Since 2000, the instability of the 1990s has been replaced by more stable economic growth. In the labour market, only minor reforms were introduced, although since the 1990s, it has de facto become more flexible (Berg, Ernst and Auer, 2006). Overall, Brazil's new development strategy has led to significant structural changes in production.

The creation of employment is important for both social and economic reasons. Brazil is characterized by a socio-economic dualism that causes high social inequality, which often leads to violence and social unrest. This dualism is prominent in the labour market. Whilst many studies focus on changes in the organized, formal segment of the labour market, others illustrate the importance of non-formal types of employment in the Brazilian labour market. This study aims to integrate both aspects in an inclusive approach. Its main objective is to analyze the evolution of the labour market in Brazil between 1992 and 2004, to assess whether the overall employment situation has improved, and to identify the factors behind this evolution. This paper addresses three issues, which aim to provide a better understanding of the Brazilian labour market. Section 1 examines the extent of dualism in the Brazilian labour market. Based on these findings, Section 2 evaluates whether the employment situation has improved in the different segments of that market. Section 3 looks at the supply side of labour, in order to determine the importance of supply side pressure for employment. Section 4 summarizes the results and explains the underlying factors. The study uses the Employment Situation Index (ESI) developed in Ghose, Ernst, Majid (2008), which incorporates the main qualitative and quantitative aspects of the labour market: the unemployment rate, the share of formal employment in total employment and the productivity of the non-formal segment of the labour market.¹ Special attention is paid to the gender dimension of the labour market, with the help of an innovative Gender Inequality Gap Index (GIGI).

¹ Most of the data in this study are derived from the Brazilian household survey PNAD (Brazil did not undertake household surveys in 1994 and 2000. Data from these years, if used, are estimates). To exclude child labour, we have used data pertaining to workers aged 15 years and over. To facilitate international comparisons, we have not included military personnel. These minor adjustments may explain some differences with the findings of other studies on Brazil.

1. Dualism of the Brazilian economy and labour market

With its dual economy and dual labour market, two common features of the production system in Latin America, Brazil has always been considered a typical Latin American country (see also World Bank/IPEA, 2002). One segment of the economy may be considered modern, capital-intensive and skilled-labour-intensive, with a relatively small number of mainly formal workers. The other, more traditional, segment is labour-intensive, comprising mostly unskilled workers; it lacks capital and has a large number of non-formal workers. Entrepreneurs and government authorities tend to organize production for profit, and invest part of the profit in the formal segment of the labour market. The non-formal segment, on the other hand, is subsistence-oriented, with workers or producers unable to save or invest. Workers in the formal segment are expected to have regular, full-time jobs; they are registered, and benefit from social security, labour regulations and collective bargaining. Besides the regular, but non-registered wage earners (e.g. domestic workers), workers in the non-formal segment are either casual wage earners, whose wages are linked to the earnings of their self-employed employers, or directly self-employed. This section does not explicitly use the concept of informal employment according to the Guidelines endorsed by the 17th International Conference of Labour Statisticians in 2003. Informal employment is, however, close to what is referred to as non-formal employment in this study. At an early stage, the study defines formal employment in a rather limited sense. Subsequently, non-formal employment is defined as all employment that is not formal².

This section presents aspects of the formal and non-formal segments of the labour market focusing on three ways of delimitating the two segments, namely by productivity, by employment status and by firm size. It concludes by comparing the results of these different aspects.

1.1. Dualism by productivity of economic sectors

An initial criterion for identifying the dualism of the Brazilian economy is based on differences in productivity between the sectors, which is an initial approximation of the quality of employment. This is a rarely used way of defining different segments of the labour market and does not correspond to internationally recognized standards. It complements the following definitions of formal employment and helps the exploration of an additional dimension of the formality of employment. We assume that formal jobs have higher productivity than non-formal jobs (see also Cimoli, 2006). Here, productivity is defined as the gross domestic product (GDP) in constant local prices divided by employment. This definition focuses on labour productivity or output per worker. We can assume that the modern sector is characterized by high productivity, because of its intensive use of capital and skilled labour, and thus by high income. The non-formal sector is characterized by low productivity and underemployment, arising from the lack of capital and low skill levels.

As a reference, we are using the average productivity of all economic sectors of the Brazilian economy for the period 1992–2003. We then define the formal segment of the economy as all sectors with a productivity value above the average productivity value, and the non-formal segment as all sectors with a productivity value below average (43 sectors, according

² For more details on international definitions of formal and informal employment, see Hussmanns, 2004.

to Instituto Brasileiro de Geografia e Estatística, IBGE).³ Consideration of differences within each sector is beyond the scope of this paper, although they may be important in specific cases⁴.

Table 1: Share of non-formal and formal employment by productivity, 2003 (%)

| | Non formal | | | | Formal | | | | |
|-------------------------|-------------|---------------|----------|-------|--------|---------------|--------------|----------|-------|
| | Agriculture | Manufacturing | Services | Total | Mining | Manufacturing | Construction | Services | Total |
| Total | 18.9 | 6.8 | 45.8 | 71.2 | 0.4 | 5.9 | 5.6 | 16.6 | 28.6 |
| Non-agricultural sector | - | 7.8 | 56.4 | 64.3 | 0.4 | 8.2 | 6.8 | 20.4 | 35.8 |

Source: Author's calculations, based on IBGE (Instituto Brasileiro de Geografia e Estatística), Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

Note: The table shows the employment share of various sectors, after defining various activities as formal or non-formal according to productivity criteria.

Table 1 summarizes the findings of the calculations: 71.2 per cent of all employment is in the non-formal segment of the economy with productivity below the national average. If the non-agricultural sector is considered in isolation, the share of non-formal employment is more modest, at 64.3 percent. Non-formal employment is found mainly in agriculture, in the form of family and subsistence farming, and in services, especially trade-related agricultural services (16.8 per cent), family services (15.5 per cent) and non-merchandise private services (9.4 per cent).⁵ Many manufacturing activities are dominated by formal employment, but their employment share in total employment is low (generally around 0.1 per cent). Moreover, there are fewer highly labour-intensive manufacturing sectors with low productivity, such as clothing (2.5 per cent) or woollen fabrics (1.4 per cent) and these are important providers of employment (see Appendix Table A). The service sector can also be divided into formal and non-formal activities: formal activities include public administration, with an employment share of 9.5 per cent, and business services with an employment share of 4.8 per cent. The differences in productivity between the sectors are quite striking; for example, the most productive sector, the petrochemical industry, has a value 300 times higher than the least productive category of the Brazilian economy, non-merchandise private services.

1.2 Dualism by employment status

The dualism of the Brazilian economy can also be analyzed in terms of employment status⁶. Here, following a standard definition of formal employment widely used in Brazil, we

³ See also Bonelli (2002, table 5, p. 10), who distinguishes between high, low and negative productivity growth sectors, with productivity values close to the values of this study (period of analysis, 1990-2000).

⁴ A typical case is the broad category of agriculture, where overall productivity is rather low. Nevertheless, the sector is characterized by strong dualism: on the one hand, it has a highly productive, export-oriented segment, and on the other, a segment dominated by family agriculture with low productivity, but which accounts for a larger proportion of employment.

⁵ The results are broadly confirmed (except for construction) by the OECD (2007), which observes a strong concentration of informal jobs in agriculture, domestic services, hotels and restaurants, and the wholesale and retail trade.

⁶ The 17th ICLS defines the following employment status categories as informal: own-account workers (including those producing for own final use by their households), employers employed in their own informal sector enterprises, contributing family workers, employees holding informal jobs, and members of informal producers' cooperatives (Husmanns, 2004). This study's definition of non-formal employment by employment status categories follows the standard Brazilian definition of informal employment, which corresponds roughly to the definition of the 17th ICLS.

define formal workers as registered wage earners holding a social security card (*com carteira*). This is a rather broad definition of formal employment, as it does not take into consideration other important aspects, such as respect of labour regulations, collective bargaining, etc. Here, registered domestic workers are defined as formal workers, even though they still lack basic labour rights and their activities have a low productivity yield. Public servants are also considered as holding formal employment, even though they do not have a social security card, but do benefit equally from social security. In addition to wage earners, entrepreneurs are included in the formal segment. The non-formal workers⁷ are the non-registered wage earners and the self-employed. The latter include own-account workers, non-remunerated workers and subsistence workers.⁸ This definition is not entirely accurate, as, for example, a rather small percentage of entrepreneurs are non-formal. There are also a small number of self-employed, who are registered and part of the formal economy.

Table 2: Distribution of employment by major employment status (%), 2004

| Employment categories | Total | Non-agricultural sector | Agricultural sector |
|------------------------------------|-------------|-------------------------|---------------------|
| Wage earners | 56.4 | 62.8 | 29.8 |
| Registered | 31.6 | 36.8 | 9.8 |
| Public servant | 6.5 | 8.1 | |
| Others not registered | 18.4 | 18.0 | 20.1 |
| Domestic workers | 7.8 | 9.7 | |
| Registered | 2.1 | 2.5 | |
| Not registered | 5.7 | 7.1 | |
| Own-account workers | 22.1 | 20.9 | 27.1 |
| Entrepreneurs | 4.2 | 4.5 | 3.3 |
| Non-remunerated workers | 5.6 | 2.0 | 20.5 |
| Subsistence workers | 3.8 | 0.1 | 19.3 |
| TOTAL formal employment | 44.4 | 51.8 | 13.1 |
| TOTAL non-formal employment | 55.6 | 48.2 | 86.9 |

Source: IBGE, based on PNAD (Brazilian household survey data).

Note: Non-formal employment categories are highlighted in bold.

Table 2 shows that the non-formal employment segment accounts for the highest share of employment, at 55.6 per cent, compared with that of the formal segment at 44.4 per cent.⁹ In 2004, formal employment was found mainly among registered wage earners and public servants (38.1 per cent), while those in non-formal employment were mainly own-account workers and other self-employed, who together accounted for 31.5 per cent of workers, and non-registered wage earners (18.4 per cent). When comparing the agricultural and the non-agricultural sectors, the situation was quite different. In the agricultural sector, non-formal employment dominated with a share of 86.9 per cent, due to the high level of own-account workers and self-employed,

⁷ The undeclared workers who are excluded from this analysis.

⁸ See also, ILO, *Panorama Laboral 2006*, for a further discussion on measurement of informality in Latin America, especially with regard to employment status categories.

⁹ The distribution between formal and non-formal employment is more or less confirmed by IPEA (2006), which found the proportion of informal employment to be 52 per cent in 2004.

while the non-agricultural sectors had a higher share of total wage earners and a lower share of self-employed.

Table 3: Employment status categories by average number of years of education, total, agricultural, non-agricultural sectors, 2004

| | Total | Non-agricultural sector | Agricultural sector |
|----------------------------|-------|-------------------------|---------------------|
| Wage earners | 8.1 | 8.6 | 3.5 |
| Registered | 8.6 | 8.9 | 4.1 |
| Public servant | 11.3 | 11.3 | n.a. |
| Others not registered | 6.6 | 7.2 | 3.2 |
| Domestic workers | 5.5 | 5.5 | n.a. |
| Registered | 5.7 | 5.7 | n.a. |
| Not registered | 5.4 | 5.4 | n.a. |
| Own-account workers | 5.9 | 6.9 | 2.8 |
| Entrepreneurs | 9.5 | 10.1 | 6.0 |
| Non-remunerated | 5.4 | 7.8 | 4.4 |
| Subsistence workers | 3.6 | 5.5 | 3.0 |

Source: IBGE, based on PNAD (Brazilian household survey data).

Note: The non-formal categories of workers, according to the definition of dualism by employment status categories, are highlighted.

Table 3 presents data on the average number of years of education, which is an approximation for educational attainment, by employment status categories. Non-formal employment is characterized by low-skilled labour, i.e. workers with low educational attainment, who also tend to be in low productivity jobs (see 1.1). According to table 3, entrepreneurs with an average of 9.5 years of schooling and registered wage earners with 8.1 years of schooling, as well as public servants with an average of 11.3 years of schooling, have a significantly higher education level than non-registered wage earners (6.6 years), own-account workers (5.9 years) or even subsistence workers (3.6 years). As expected, educational levels are also higher, on average, in the non-agricultural sector than in the agricultural sector, with a considerable difference of about 4 years' education. It is also worth stressing the insignificant difference of 3 months (in years of education) between registered and non-registered domestic workers, which shows the thin dividing line between the definitions of formal and non-formal employment.

1.3. Dualism by firm size

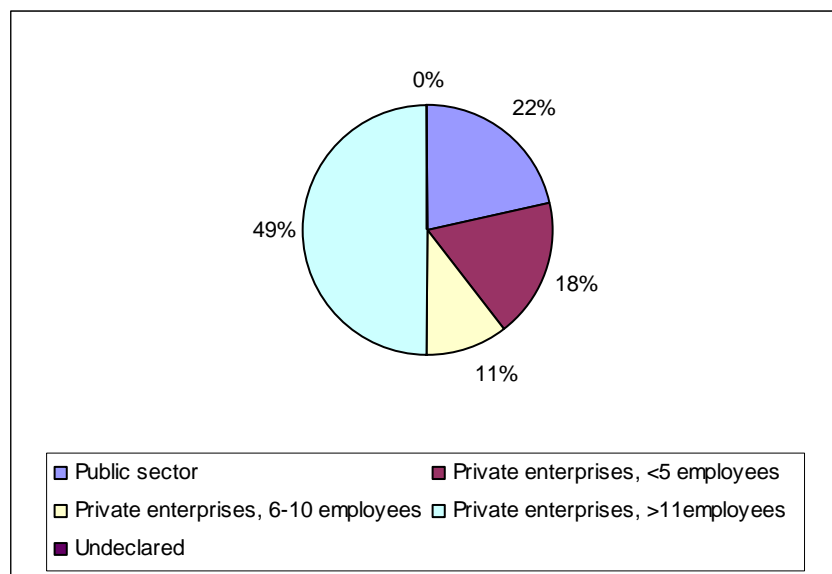
An alternative way of demonstrating dualism in the Brazilian economy is by company size¹⁰. We distinguish between, on the one hand, employment in the public sector and in large companies with more than 10 workers, which are dominated by formal employment, and, on the other, employment in companies with fewer than 10 workers, which are characterized by less formal forms of employment.¹¹ This is certainly a rather broad and cautious definition of formal

¹⁰ According to the 15th ICLS, employment in the informal sector refers to “all jobs in informal sector enterprises, or all persons who, during a given reference period, were employed in at least one informal enterprise, irrespective of their status in employment” (Husmans, 2004, p. 3). The threshold of workers in such an enterprise should be defined according to national conditions.

¹¹ For more information on the degree of formal employment by firm size in Latin America and Brazil, see Tokman, 2001.

employment, as formal employment can also be found in companies with fewer than 10 workers. However, it is justified by the fact that Brazilian law No. 8864/94 on the Status of Micro and Small Enterprises (and the reformulated one in 2006) stipulates that even a company with up to 19 workers can be considered as a micro enterprise (Tokman, 2001). On the other hand, precarious jobs may also be found in larger firms. Another limitation is that data are only available for the non-agricultural sectors, but as we have seen in the above analysis on employment status categories, formal employment is very low in the agricultural sector. Moreover, in the agricultural sector there are many “family enterprises” with fewer than 10 workers. Therefore an analysis of the non-agricultural sector still provides some indications of the importance of different types of enterprises.

Figure 1: Share of formal and non-formal employment in non-agricultural sectors, by firm size, 2004



Source: IBGE, based on PNAD (Brazilian household survey data).

Figure 1 shows the employment share based on the definition of formal and non-formal segments by firm size. It demonstrates that large, private companies with more than 10 workers (50 per cent) and public enterprises (22 per cent) in the non-agricultural sectors in Brazil account for a very large share of formal employment (over 70 per cent). Firms employing between 6 and 10 workers account for almost 11 per cent of employment, while those with fewer than 5 workers –the core of non-formal employment– account for almost 18 per cent of total employment.

1.4. Comparison of proposed criteria

Three different criteria have been proposed to measure the dualism of the Brazilian economy: productivity, employment status category and firm size. Do they show similar results and, if not, how can the differences be explained? As the criterion of company size covers just the non-agricultural sector, we can only compare the values for this sector. The figures relating to company size are quite different from those relating to the two other definitions. According to an enterprise size definition, formal employment is significantly higher than non-formal employment, whereas according to the other two definitions, the situation is reversed (see table 4). This can be explained partly by the high share of non-formal employment in larger enterprises with more than 11 workers¹². A crossing of enterprise data with sectoral data, or a further disaggregation of enterprise data by size (e.g. one category of 11-19 workers) could have shed more light on the issue and would have helped improve the relevance of the figures. As these figures were not available, in the further analysis we have disregarded the definition by enterprise size.

Results by productivity and employment status criteria move in the same direction, but what explains the large gap of more than 15 per cent? First of all, using the employment status category definition we have assumed that all workers with a social security card are formal workers, which is certainly an over-estimation. Many of them are in low productivity, low salary jobs, with basic working conditions and limited respect of their labour rights. This is also why registered domestic workers have been excluded from our calculation of formal and non-formal employment by employment status categories. Moreover, there may be additional workers who ought to be excluded, such as non-formal entrepreneurs, or the formal self-employed. Nevertheless, data on the self-employed by sector show that 88 per cent of the self-employed are working in sectors that, according to the productivity definition,¹³ do fall into the category of non-formal sectors; this more or less confirms the assumption that they do not have a formal job. Another difficulty is that many of the 43 sectors for which employment data are available include formal and non-formal employment. A fair amount of formal employment can be found in Brazilian agriculture and agri-business, trade and transport, whilst in business services there is a mixture a high-income jobs and low-quality, low-skilled activities.

Due to a scarcity of data, we were unable to compare sectoral productivity data with employment status data, which would have provided a more accurate picture. Nevertheless, the productivity definition is the most defensive definition of formal employment, which also explains its low value.

Table 4: Dualism in Brazil's labour market by three main categories, non-agricultural sector, 2003, 2004

| | Productivity | Employment status | Company size |
|-------------------|--------------|-------------------|--------------|
| Formal | 35.8 | 49.7 | 71.4 |
| Non-formal | 64.3 | 50.3 | 28.6 |

¹² See also 1.3, which shows that even by law, enterprises of up to 19 workers are considered micro enterprises in Brazil.

¹³ All productivity data are for 2003.

2. Employment creation in Brazil

Given the dualistic nature of the Brazilian economy, as demonstrated in section 1, there is no straightforward way to measure or calculate the extent of employment. Traditional indicators, such as the employment or unemployment rates, do not give an accurate picture of the overall employment situation; for this, a combination of indicators must be used. Section 2 shows the evolution and limitations of traditional indicators and complements them with proposed new indicators, which are summarized in an index to describe the overall employment situation in Brazil. It includes an analysis comparing the relationship of the evolution of the formal and non-formal segments of the labour market.

This new method of analysis should give us a better understanding of whether the Brazilian economy was able to create new and decent jobs during the period of analysis, i.e. 1992–2004. Given the dual nature of the economy and the labour market, a simple evaluation of employment and unemployment figures is not sufficient for an understanding of the evolution of that market. Where there is an excess labour supply, and thus a high level of non-formal employment, a fall in unemployment may not automatically mean an improvement in the labour market. It could simply be the result of an increase in precarious jobs characterized by low productivity. Therefore, in the best-case scenario, an improved employment situation in a dual economy means a simultaneous fall in unemployment, a rise in the share of non-formal employment in total employment and a rise in productivity in non-formal forms of employment. Nevertheless, combinations are possible, where a rise of one or two indicators and a fall in another could still contribute to an improved overall employment situation.

2.1. General employment and unemployment trends

Standard methods of collecting data, as used in Brazil, provide unemployment figures for both short- and long-term unemployment rates. On the one hand, it is assumed that long-term unemployment is a measure of the length of time a person is without a formal job. It refers to workers, mainly young people, and those financially better off, who can afford to wait for an appropriate job.¹⁴ On the other hand, short-term unemployment refers to irregular or casual workers, who may work one week out of two. They are underemployed, and are often forced to enter and leave the labour market frequently. The Brazilian standard method defines an unemployed person as one who has not worked for a single hour during the week prior to the survey. As a result, some casual workers, who frequently enter and exit the labour market, are counted as unemployed. Casual workers may not work during the week of the survey consultation, but may have worked the week before. In addition, the self-employed would rarely be identified as unemployed, even though they may only work for one or two hours a week. Underemployment is therefore not sufficiently captured in the reported unemployment figures.

¹⁴ According to Bourguignon (2005): “In developing countries, the absence of formal unemployment insurance systems means that open unemployment is, in effect, limited to a small number of people, who have enough resources to wait until a job with the characteristics they are looking for actually opens.... Less fortunate people cannot join the queue, or have to leave it rather quickly, accepting any kind of occupation that simply allows them to survive... from a statistical point of view, these people are not ‘unemployed’. They are employed, but they just have a ‘bad’ job.”

Table 5: Evolution of the unemployment rate (%) by location, 1992-2004

| Year | Total | Urban | Rural |
|------|-------|-------|-------|
| 1992 | 6.4 | 7.9 | 1.6 |
| 1993 | 6.1 | 7.4 | 1.5 |
| 1994 | n.a. | n.a. | n.a. |
| 1995 | 6.0 | 7.2 | 1.6 |
| 1996 | 6.8 | 8.1 | 2.1 |
| 1997 | 7.7 | 9.2 | 2.2 |
| 1998 | 8.9 | 10.6 | 2.9 |
| 1999 | 9.7 | 11.5 | 3.1 |
| 2000 | n.a. | n.a. | n.a. |
| 2001 | 9.4 | 10.8 | 2.6 |
| 2002 | 9.1 | 10.5 | 2.6 |
| 2003 | 9.8 | 11.2 | 2.6 |
| 2004 | 9.0 | 10.3 | 2.7 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: The unemployment rate refers to persons aged 15 years and over. A more detailed table by gender is provided in Appendix table B.

Nevertheless, the unemployment rate remains a valid, but limited indicator, as it comprises the unemployed, as well as a large proportion¹⁵ of underemployed and casual wage earners. As Brazilian household survey data¹⁶ do not enable a distinction to be made between long- and short-term unemployment, we assume that a rise in unemployment affects both types of unemployment.

While the unemployment rate was stable at the beginning of the 1990s, at about 6 per cent, it increased significantly at the end of the 1990s. Even though it began to improve thereafter, at 9 per cent, it was still almost 50 per cent higher in 2004 than in 1992 (table 5). Macroeconomic conditions, such as the economic crisis in 1999, or the energy crisis in 2001, as well as structural changes resulting from economic liberalization, are cited as the main reasons for this (see also IPEA, 2006), but the rise in female labour participation and the declining role of the public sector as an employment provider are also contributory factors. Unemployment is

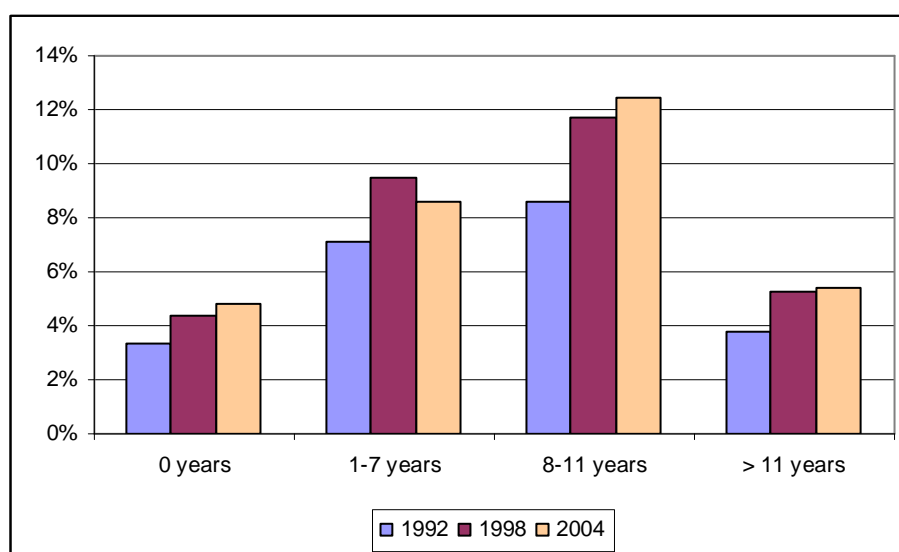
¹⁵ Brazil has three major criteria for measuring the unemployment rate. According to the domestic household survey, PNAD, which was mainly used in this study, people are considered unemployed if they did not work in the week of reference and were effectively looking for a job during the seven days prior to the survey. According to the PME (Pesquisa Mensal de Emprego), a monthly household survey in major metropolitan areas of Brazil, also undertaken by the Brazilian statistical office, IBGE, like the PNAD, an unemployed person is someone who did not work in the week of reference, but was effectively looking for a job during the 30 days prior to the survey. A trade union research centre, DIEESE (www.dieese.org.br/ped/), based in Sao Paulo, developed some interesting, more disaggregated unemployment indicators as a result of their survey PED ("Pesquisas de Emprego e Desemprego") in major metropolitan areas. It defines the open unemployed as persons who were effectively looking for a job during the last 30 days and did not work during the last seven days, just as in the PME. They also distinguish between open and hidden unemployment, the latter being those with "a precarious job" or "because of discouragement". The proportion of persons in hidden unemployment amounted to 19.3 per cent, compared to PNAD data of 10.3 per cent and PME data of 11.5 per cent for general unemployment in 2004. Technical notes on PNAD and PME, as well as data of the PME can be found on the IBGE website at: www.ibge.gov.br.

¹⁶ However, the monthly employment survey, PME, which is limited to the metropolitan area, illustrates differences between short- and long-term unemployment. In 2004, those in short-term unemployment of less than a year constituted 73.9 per cent of the unemployed and the long-term unemployed 26.1 per cent. There is a trend towards a higher share of short-term unemployed, which rose from 71.4 per cent in 2002 to 77.4 per cent in 2006.

mainly an urban phenomenon, with 10.3 per cent of urban workers in this situation, compared with just 2.7 per cent of rural workers.

As expected, the unemployed are normally found among those with higher education. In 2004, the average number of years of education was 8 for the unemployed, 7.4 for the total labour force and 7.3 for the employed.¹⁷ The differences in years of education remained quite stable during the period of analysis. In line with the trend observed for the total labour force, the unemployed were also better educated in 2004 than in 1992 (6.2 per cent). The urban unemployed were better educated than the rural unemployed, although, contrary to the labour force, the gap between the rural and urban unemployed was rather narrow and even shrank between 1992 and 2004, from 2 years to 1.6 years.

Figure 2: Unemployment rate by educational levels, 1992-2004



Source: IBGE, based on PNAD (Brazilian household survey data).

An analysis, by cohort groups, of education by years, reveals that the unemployed are mainly those with higher levels of education (figure 2), the majority having 8 to 11 years of schooling,¹⁸ which corresponds to medium to complete education, or even higher. There are fewer unemployed among those with no education, or a low level of education. Figure 2 clearly demonstrates a strong rise, in the second half of the 1990s, in unemployment among people with 8 to 11 years of education, while unemployment increased at a similar rate for all other categories. Nowadays, more than 40 per cent of the unemployed have at least 8 years of education, compared to less than 30 per cent in 1992.¹⁹ These results assume that unemployment is predominantly, and increasingly, a concern of the higher educated labour force, though not the highest, and it is more an issue of waiting for appropriate jobs.

¹⁷ For more details (by gender), see Appendix table E.

¹⁸ Within this group, there is a particularly large percentage of unemployed with 9 to 10 years of education. The result is confirmed by Carneiro (2003), who shows a high level of unemployment among people with 9 to 11 years of education between 1991 and 1998, and also by IPEA (2006).

¹⁹ For more details, see Appendix table C.

Table 6: Evolution of the employment-to-population rate, by location (%), 1992-2004

| Year | Total | Urban | Rural |
|------|-------|-------|-------|
| 1992 | 63.8 | 60.5 | 76.7 |
| 1993 | 63.8 | 60.5 | 77.1 |
| 1994 | n.a. | n.a. | n.a. |
| 1995 | 63.9 | 60.8 | 77.0 |
| 1996 | 61.4 | 58.8 | 72.3 |
| 1997 | 61.5 | 58.5 | 74.4 |
| 1998 | 60.7 | 57.8 | 73.0 |
| 1999 | 60.9 | 57.7 | 74.6 |
| 2000 | n.a. | n.a. | n.a. |
| 2001 | 60.5 | 58.2 | 73.5 |
| 2002 | 61.5 | 59.3 | 74.2 |
| 2003 | 61.0 | 58.8 | 73.9 |
| 2004 | 62.0 | 59.9 | 74.3 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: For a more detailed breakdown by gender see Appendix table D.

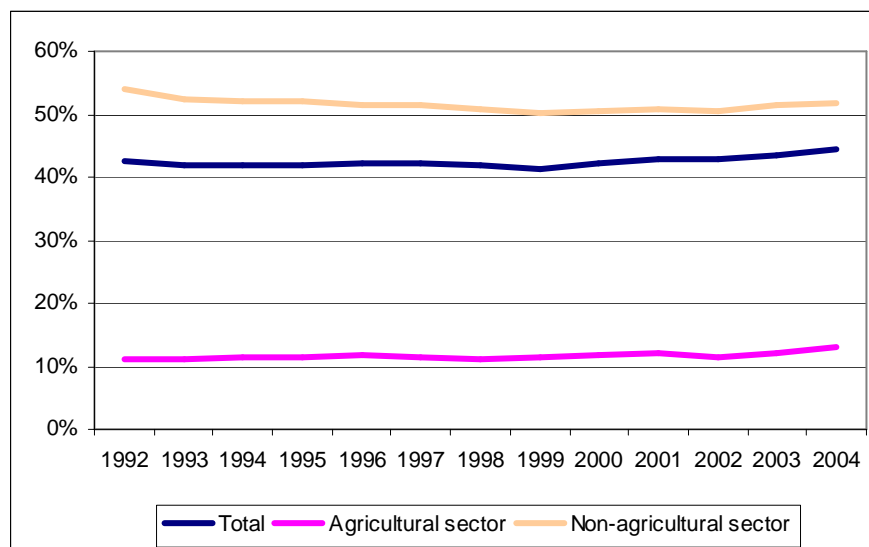
As the labour participation rate in Brazil between 1992 and 2004 did not change significantly (see section 3) and unemployment increased, the employment rate declined. This was also because employment was unable to keep pace with the rise in the working-age population. The employment-to-population ratio fell from 63.8 per cent in 1992 to 62 per cent in 2004 (table 6). Traditionally, employment rates are higher in rural areas than in urban areas, and in 2004, there was a difference between the two of about 15 per cent. But while urban employment was more or less stable, the rural employment rate declined by 2.3 percentage points, which narrowed the gap.

2.2. Evolution of employment by segments of the labour market

Evolution by employment status categories

A long-term objective of many policy-makers is for all workers to be employed in the formal segment, as previously defined. Therefore, the employment situation could be improved by increasing the share of the formal segment in total employment.

Figure 3: Evolution of the share of formal employment in total employment, by employment status categories and sector, 1992-2004 (per cent)



Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Did formal employment increase as a share of total employment in Brazil during the period of study? Using the definition of formal employment by employment status categories, figure 3 shows a slight increase in the share of formal employment, from 42.5 per cent in 1992 to 44.4 per cent in 2004, while non-formal employment still dominated the economy at 55.6 per cent, down from 57.5 in 1992. A closer analysis of this evolution (see Appendix table E) reveals that during the first half of the 1990s, the share of non-formal employment increased, while during the second half of the 1990s until 2004, the reverse was the case. After a period of employment stagnation between 1997 and 1999, employment rose again from 1999, with an even stronger rise in formal employment.

In 2004, the agricultural sector still had by far the largest proportion of workers in non-formal employment, (86.9 per cent) compared with those in formal employment (13.1 per cent). Despite some fluctuations, there has been a clear trend towards a reduction in the share of non-formal employment and a rise in formal employment, which has even increased since 2003. A reverse trend can be observed in the non agricultural sectors: 51.8 per cent of these workers were in formal employment compared to 48.2 per cent in non-formal employment in 2004. Nevertheless, during the period of analysis, formal employment declined from 53.9 per cent in 1992 to 50.1 per cent in 1999, and recovered only slightly to 51.8 per cent in 2004.

An analysis by firm size shows that during the period of analysis, formal employment in the non-agricultural sectors initially declined by 4 per cent (25.6 to 21.6 per cent), which was mostly due to a fall in its share in the public sector, while its share in smaller enterprises increased.²⁰ There was a slight reversal of this trend after 2003. These findings more or less confirm the results by employment status in the non-agricultural sectors.

An analysis of the evolution of the formal and non-formal segments of the labour market using the productivity criterion shows a similar trend. The share of non-formal employment increased for the whole economy, but insignificantly, from 70.4 per cent in 1992 to 71.2 per cent

²⁰ Employment in private enterprises with fewer than 5 workers increased from 16 per cent in 1992 to 18 per cent in 2004, and, in private enterprises employing between 6 and 11 workers, from 9 per cent in 1992 to 11 per cent in 2004.

in 2003. The rise was significant in the non agricultural sector (from 60.4 percent to 65.9 percent), while the agricultural sector experienced a strong decline (from 26.4 percent to 18.9 percent).

Table 7: Evolution of formal and non-formal employment by employment status category and sector (%), 1992-2004

| | | Total | | | Non agricultural sector | | | Agricultural sector | | |
|------------|-----------------------|-------|------|------|-------------------------|------|------|---------------------|------|------|
| | | 1992 | 1998 | 2004 | 1992 | 1998 | 2004 | 1992 | 1998 | 2004 |
| FORMAL | Entrepreneurs | 3.9 | 4.2 | 4.2 | 4.0 | 4.6 | 4.5 | 3.5 | 3.2 | 3.3 |
| | Wage earners | 60.4 | 60.8 | 64.2 | 71.8 | 70.3 | 72.4 | 29.3 | 28.0 | 29.8 |
| | <i>Registered</i> | 38.6 | 37.7 | 40.1 | 49.9 | 46.2 | 47.4 | 7.6 | 8.1 | 9.8 |
| NON-FORMAL | Wage earners | 21.8 | 23.1 | 24.1 | 21.8 | 24.0 | 25.1 | 21.7 | 19.9 | 20.1 |
| | <i>Non-registered</i> | | | | | | | | | |
| | Self-employed | 35.7 | 34.9 | 31.5 | 24.2 | 25.2 | 23.1 | 67.2 | 68.8 | 66.9 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: Formal wage earners include public servants, registered domestic workers and registered wage earners. Non-registered wage earners include non-registered wage earners and domestic workers. Self-employed includes own-account workers, non-remunerated workers and subsistence workers.

The largest increase in employment between 1992 and 2004 (table 7) was in the wage-earners category; within this category the largest increase was in those not registered (by 2.3 per cent) compared to those registered (by 1.5 per cent). This increase was mainly in the non-agricultural sectors, where the share of registered wage earners was more than 40 per cent. The same phenomenon can be observed among entrepreneurs, but to a lesser extent. Their share increased by just 0.3 per cent, which can be explained by a rise of 0.5 per cent in the non-agricultural sectors and a decline of 0.2 per cent in the agricultural sector. However, the self-employed, in both agricultural and non-agricultural sectors, experienced a decline in employment (by 4.2 per cent between 1992 and 2004). Briefly, there was an overall, but slightly increasing trend towards more formal employment, by employment status categories, even though the rising share of non-registered wage-earners gives cause for concern. But this negative trend has been offset by a decline in the share of self-employed and a rise in the share of all other formal employment status categories. These results are confirmed by Kakwani and Son (2006), who observed an increasing formalization of employment in Brazil between 1995 and 2004, and also by IPEA (2006), which took the same period of analysis as this study.²¹

With regard to educational attainment (table 8), we observe that non-registered wage earners experienced a general increase in years of education, from 4.2 years in 1992 to 6.6 years in 2004, thus narrowing the gap with the registered wage earner by 0.8 years. The self-employed also experienced a rise of 1.6 years, a similar evolution to that of registered wage earners and entrepreneurs. However, it is a matter of concern that the gap in years of schooling between the non-agricultural sectors and the agricultural sector actually widened during the period of analysis; by 0.5 years for the wage earners and by 0.8 years for self-employed workers.

²¹ These findings, however, are in contrast to a previous World Bank/IPEA study (2002), which found a rise in informal employment. This can be explained by the different period of analysis, which was 1982 to 2001. Growing formalization has been a more recent phenomenon.

Table 8: Evolution of formal and non-formal employment by years of education, according to employment status categories and sector (%), 1992-2004

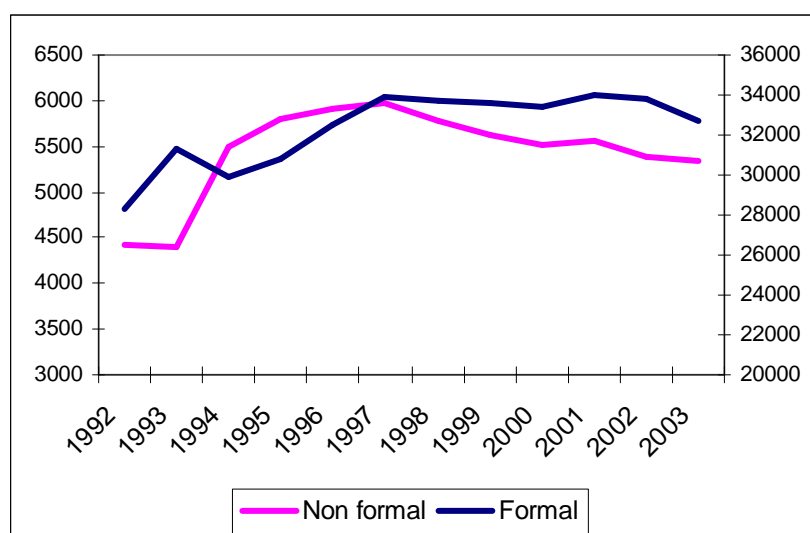
| | Total | | Non-agricultural sector | | Agricultural sector | |
|----------------------|-------|------|-------------------------|------|---------------------|------|
| | 1992 | 2004 | 1992 | 2004 | 1992 | 2004 |
| Entrepreneurs | 7.9 | 9.5 | 8.9 | 10.1 | 4.9 | 6.0 |
| Wage earners | 6.2 | 7.3 | 6.8 | 8.6 | 2.2 | 3.5 |
| Registered | 7.4 | 9.0 | 7.6 | 9.3 | 2.9 | 4.1 |
| Non-registered | 4.2 | 6.6 | 5.0 | 7.2 | 1.9 | 3.2 |
| Self-employed | 3.9 | 5.5 | 5.4 | 7.0 | 2.4 | 3.3 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Evolution of productivity by employment status

Rising productivity is often regarded as an important element of an improved labour market and this would be true for both the formal and the non-formal segments of the labour market. A greater productivity rise in the non-formal segment, as compared to the formal segment, means a declining productivity gap, i.e. a less pronounced difference in employment between the two segments of the labour market. However, productivity data must always be compared with employment data. There may be a trade-off between productivity and employment, or there may be a rise in the share of formal employment combined with declining productivity. This could be explained by a change in labour regulation that formalizes non-formal forms of employment without affecting the evolution of productivity. Nevertheless, a general and particular improvement of productivity in the non-formal segment will normally mean an improved employment situation in the non-formal segment of the labour market if the situation in the formal economy has not worsened at the same time.

Figure 4: Evolution of productivity^a, formal and non formal employment, 1992-2003



Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais.

^a As defined in section 1.1 above.

Figure 4 illustrates the evolution of productivity in formal and non-formal employment. Both segments show strong growth during the first half the 1990s, but stagnation since 1997 and

even a slight decline in the most recent years²². The generally low productivity growth rates for both segments of the labour market is an indication of a change in the output structure towards less productive sectors. Moreover, after a strong rise during and after the period covered by the Real Plan, the decline of productivity in then non-formal segment since 1997 was even more pronounced than that of formal employment, which is an even more worrying phenomenon. The evolution of wages is similar to that of productivity, thus confirming the finding. Average income from the primary job in constant values increased slightly from 592 Reais in 1992 to 662 Reais in 2004, but if the comparison begins in 1995 (754 Reais), there has even been a decline (IPEA; 2006).

Figure 5: Evolution productivity gap between formal and non-formal employment, 1992-2003



Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais.

What does this mean in terms of the productivity gap? The productivity gap indicator allows us to observe whether the difference in productivity between the formal and the non-formal segments has increased or decreased. The productivity gap is defined as productivity in non-formal employment divided by productivity in formal employment. Figure 5 shows that the indicator increased slightly during the period of analysis, from 37.6 per cent in 1992 to 39.3 per cent in 2003, implying a narrowing of the productivity gap, even though the gap is still huge. However, if we exclude the turmoil period before and after the introduction of the Real Plan, where most productivity rise in the non-formal segment occurred, the situation is inverted. From 1995, the productivity gap increased continuously until 2002, even though productivity was low in the formal segment. Since then, the gap has started to narrow again. In fact, the declining productivity gap for the whole period, 1992-2003 is not statistically significant.²³

²² For the general evolution of productivity by specific sectors in the formal and non-formal segments of the labour market, see Appendix table A, which compares data for 1992 and 2003.

²³ Cimoli (2006) finds a widening productivity gap between the formal and informal sectors, but his study covers the period 1990–2000, including the period prior to the introduction of the Real Plan and excluding the period of economic recovery, which took place after 2000. Moreover, his definition of formal employment differs somewhat from that used in this study. His findings are similar to those of Bonelli (2002) for the same period of analysis. Even though Bonelli does not make a clear distinction between those sectors that are dominated by formal and non-formal employment, it becomes clear that sectors with good growth in productivity were those in which formal employment was predominant, while sectors in which non-formal employment was predominant experienced low growth in

3. The importance of the evolution of labour supply

Section 3 analyses the supply side of the labour market. The main question is whether Brazil experienced increasing supply side pressure. Can the disappointing employment results demonstrated in section 2, be explained mainly by a rapid growth in labour supply?

Table 9: Evolution of the labour force (%), by gender and location, 1992-2004

| Year | Total | Men | Women | Urban | | | Rural | | |
|------------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|
| | | | | Total | Men | Women | Total | Men | Women |
| 1993 | 1.6 | 1.4 | 1.8 | 1.9 | 1.6 | 2.4 | 0.3 | 0.7 | -0.2 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 2.5 | 1.8 | 3.5 | 3.0 | 2.2 | 4.1 | 0.8 | 0.3 | 1.6 |
| 1996 | -0.4 | 0.2 | -1.2 | 0.8 | 0.8 | 0.8 | -4.5 | -1.8 | -8.6 |
| 1997 | 3.2 | 2.6 | 4.0 | 3.0 | 2.8 | 3.3 | 3.9 | 2.1 | 6.8 |
| 1998 | 2.4 | 2.0 | 3.0 | 2.7 | 1.9 | 3.9 | 1.4 | 2.5 | -0.4 |
| 1999 | 3.3 | 2.0 | 5.1 | 3.0 | 2.0 | 4.4 | 4.5 | 2.3 | 8.2 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 3.4 | 3.0 | 3.8 | 6.2 | 5.7 | 6.8 | -8.5 | -7.6 | -9.9 |
| 2002 | 3.8 | 2.8 | 5.1 | 4.1 | 3.1 | 5.4 | 2.1 | 1.1 | 3.7 |
| 2003 | 2.4 | 2.0 | 3.0 | 2.7 | 2.1 | 3.5 | 1.2 | 1.8 | 0.3 |
| 2004 | 2.7 | 1.7 | 4.1 | 3.1 | 2.1 | 4.3 | 1.1 | -0.2 | 3.1 |
| 1992-2004 | 2.6 | 2.1 | 3.3 | 3.4 | 2.8 | 4.2 | -0.7 | -0.8 | -0.1 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: No PNAD data were available for 1994 and 2000. Growth data for 1992-2004 are average annual growth rates, with estimates for 1994 and 2000.

The Brazilian labour force rose from almost 66 million in 1992 to 89 million in 2004, an increase of 23 million in just 12 years²⁴. At 2.57 per cent, the annual average growth rate of the labour force is rather high by international standards.²⁵ There was a strong increase of 3.3 per cent in the rate of women's participation in the labour force, which was significantly higher than the increase of women in the working-age population (2.7 per cent). The growth of the labour force was highest between 1999 and 2002, but showed high rates throughout the period of analysis (table 9). The growth rate of women in the labour force was more than 50 per cent higher than that of men. With regard to location, a strong average annual growth rate of more than 3 per cent was observed in urban areas, whilst there was a decline of 0.7 per cent in rural areas. In summary, the period 1999-2002 saw a sharp decline in the rural labour force and a surge in the urban labour force. The female labour force experienced a stronger rise than the male labour force in urban areas and a less significant decline in rural areas than that of men, thus confirming the overall rising trend. Moreover, the later entry of young people into the labour market was observed, as they remained in the educational system longer (IPEA, 2006).

productivity. Kakwani, Neri and Son (2006) more or less confirm the findings of this study, in that they observed a "pro-poor" evolution of productivity from 1995 to 2004, especially in the period 2001-2004.

²⁴ The strong negative figures for rural labour force (and later on working-age population) in 2001 may largely be explained by a change in methodology, as the administrative classification of rural and urban areas has changed.

²⁵ According to the ILO (2006), the labour force increased by 1.5 per cent worldwide between 2003 and 2004.

Table 10: Evolution of the working age population growth (%), by gender and location, 1992-2004

| Year | Total | Men | Women | Urban | | | Rural | | |
|------------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|
| | | | | Total | Men | Women | Total | Men | Women |
| 1993 | 2.0 | 1.9 | 2.0 | 2.5 | 2.3 | 2.7 | -0.1 | 0.9 | -1.1 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 2.4 | 2.3 | 2.5 | 2.9 | 2.8 | 2.9 | 0.8 | 0.6 | 1.0 |
| 1996 | 2.8 | 2.7 | 3.0 | 3.2 | 3.2 | 3.3 | 1.2 | 0.9 | 1.5 |
| 1997 | 1.9 | 2.1 | 1.8 | 2.2 | 2.3 | 2.1 | 0.8 | 1.1 | 0.6 |
| 1998 | 2.5 | 2.5 | 2.5 | 2.5 | 2.4 | 2.6 | 2.5 | 2.7 | 2.3 |
| 1999 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.2 | 2.1 | 2.3 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 3.8 | 3.6 | 4.0 | 6.1 | 6.0 | 6.2 | -7.5 | -7.2 | -7.9 |
| 2002 | 2.4 | 2.5 | 2.4 | 2.7 | 2.7 | 2.6 | 1.1 | 1.4 | 0.8 |
| 2003 | 2.5 | 2.6 | 2.5 | 2.7 | 2.8 | 2.6 | 1.6 | 1.5 | 1.8 |
| 2004 | 1.9 | 1.5 | 2.3 | 2.2 | 1.7 | 2.6 | 0.3 | -0.1 | 0.8 |
| 1992-2004 | 2.6 | 2.6 | 2.7 | 3.3 | 3.2 | 3.3 | -5.2 | -4.3 | -6.1 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Much of the evolution of the labour force is explained by demographic growth²⁶ and an increase in the working-age population²⁷. As table 10 shows, from 1992 to 2004, there was a steady increase, at an annual average rate of 2.6 per cent, which corresponded to the growth rate of the labour force, but was higher than the growth rate of the total population (of 1.5 per cent).²⁸

The dawn of the new millennium saw a marked increase in the growth rate of the working-age population. The stronger rise of the female working-age population (2.7 per cent) compared to the male (2.6 per cent) was in line with the larger increase in the female population (1.54 per cent, compared to 1.46 per cent for men), but was less accentuated than the difference in the overall growth rate of the labour force. Similar to the evolution of the labour force, the increase in the working-age population was mainly urban (3.3 per cent), while the rural working-age population declined (by 0.5 per cent on average and by 0.6 per cent for women) due mainly to migration to urban areas (IBGE, *Censos demográficos*, 1991 and 2000). This trend is confirmed by the evolution of the overall rural population, which showed a negative growth rate of -1.3 per cent, compared to a positive growth rate of 2.2 per cent for the urban population, according to CELADE data for 1990-2005. In international comparisons, Brazil has demonstrated a relatively high growth rate of the working-age population; higher than that of Argentina, Chile, China and the Republic of Korea, and even higher than that of Colombia and India.²⁹

²⁶ Despite a long-term decline because of lower fertility rates (IPEA, 2006).

²⁷ For absolute figures on the evolution of the labour force and working-age population, see Appendix tables E and F.

²⁸ According to data from Celade/ECLAC, 1990-2004, at: <http://websie.eclac.cl/sisgen/Consulta.asp>.

²⁹ ILO 2005 data, for 1995-2000, show the following growth rates of the working-age population for these countries: China, 1.3 per cent; Republic of Korea, 1.4 per cent; Argentina, 1.5 per cent; Chile, 1.9 per cent; Columbia, 2.3 per cent; India, 2.3 per cent; and Brazil, 2.4 per cent.

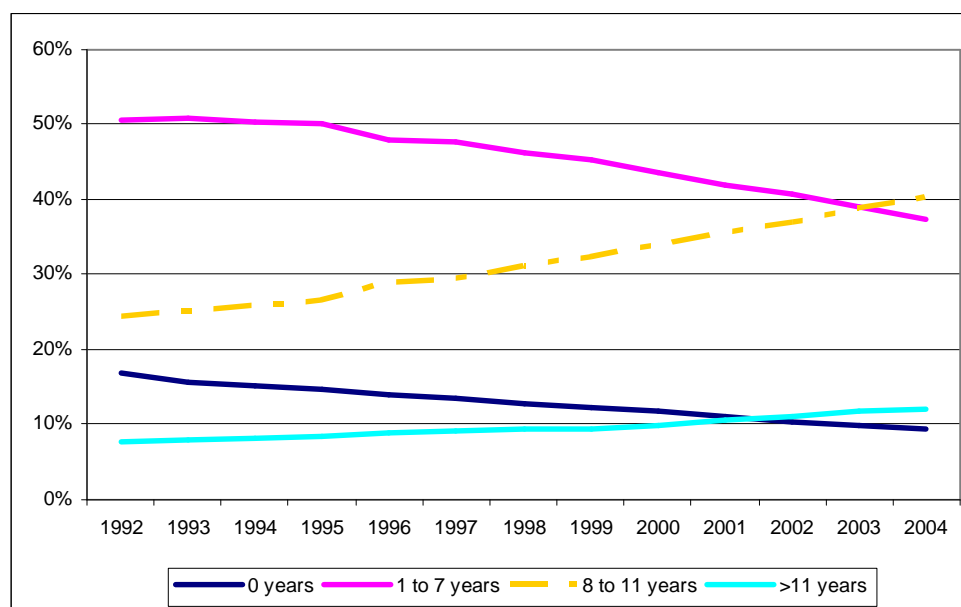
Table 11: Labour force participation rates, by average years of education, gender and location (percentage), 1992-2004

| Year | Total | Men | Women | Urban | | | Rural | | |
|------|-------|------|-------|-------|------|-------|-------|------|-------|
| | | | | Total | Men | Women | Total | Men | Women |
| 1992 | 68.2 | 84.9 | 52.6 | 65.7 | 82.8 | 50.3 | 77.9 | 92.4 | 62.4 |
| 1993 | 67.9 | 84.4 | 52.5 | 65.3 | 82.3 | 50.1 | 78.3 | 92.2 | 63.0 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 68.0 | 83.5 | 53.6 | 65.5 | 81.3 | 51.4 | 78.3 | 91.6 | 63.8 |
| 1996 | 65.9 | 81.4 | 51.4 | 64.0 | 79.4 | 50.1 | 73.8 | 89.1 | 57.4 |
| 1997 | 66.7 | 81.9 | 52.5 | 64.5 | 79.8 | 50.8 | 76.1 | 90.1 | 61.0 |
| 1998 | 66.6 | 81.5 | 52.8 | 64.6 | 79.4 | 51.4 | 75.2 | 89.9 | 59.4 |
| 1999 | 67.4 | 81.4 | 54.3 | 65.2 | 79.2 | 52.6 | 77.0 | 90.1 | 62.8 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 66.8 | 80.6 | 54.1 | 65.3 | 78.9 | 53.2 | 75.5 | 89.2 | 60.3 |
| 2002 | 67.7 | 80.8 | 55.6 | 66.2 | 79.2 | 54.6 | 76.2 | 89.0 | 62.0 |
| 2003 | 67.6 | 80.3 | 55.9 | 66.2 | 78.6 | 55.1 | 75.9 | 89.3 | 61.1 |
| 2004 | 68.2 | 80.5 | 56.8 | 66.8 | 78.9 | 56.0 | 76.4 | 89.2 | 62.5 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

The next question is whether the Brazilian labour force improved its educational performance, taking average years of education as an indicator. According to table 11, Brazil experienced a significant rise in the number of average years of education, by almost two years for the total population,³⁰ and it increased more for women than for men. A striking phenomenon in Brazil is that the female labour force, both rural and urban, has a higher level of education (8 years of education) than its male counterpart (7 years of education), which is unusual in developing and emerging economies. This increase occurred in both rural and urban areas, but with an absolute value of 4 years in 2004, the rural areas still lagged far behind the urban areas; indeed, the gap even increased during the period of analysis, from 2.8 years to 3.4 years. Even though the rising educational level of the Brazilian labour force is an encouraging sign, in 2000, Brazil was still lagging significantly behind similar competitors in the world market, such as the Republic of Korea, where the average educational level was 10.8 years (ILO, *World Employment Report*, forthcoming).

³⁰ These results are confirmed by Kakwani, Neri and Son (2006), according to whom, years of schooling of working members within households increased at an average annual rate of 2.34 per cent during the period 1995-2001.

Figure 6: Labour force by educational levels (years of education), 1992-2004 (per cent)

Source: IBGE, based on PNAD (Brazilian household survey data).

An analysis by cohorts of educational level shows a clear trend (figure 5): on the one hand, while the vast majority (50.6 per cent) of the labour force had 1–7 years of education (basic, but incomplete) in 1992, the level fell dramatically to 37.4 per cent in 2004. On the other hand, the labour force group with an education level of 8 to 11 years increased significantly to reach 40.4 per cent in 2004. A similar, but less pronounced trend could be observed for the labour force with no education, which declined, while the proportion with higher education (more than 12 years) increased. This analysis confirms the trend towards a labour force with more years of education.

Table 12: Evolution of the participation rate (%), by gender and location, 1992-2004

| Year | Total | Men | Women | Urban | | | Rural | | |
|------|-------|------|-------|-------|------|-------|-------|------|-------|
| | | | | Total | Men | Women | Total | Men | Women |
| 1992 | 68.2 | 84.9 | 52.6 | 65.7 | 82.8 | 50.3 | 77.9 | 92.4 | 62.4 |
| 1993 | 67.9 | 84.4 | 52.5 | 65.3 | 82.3 | 50.1 | 78.3 | 92.2 | 63.0 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 68.0 | 83.5 | 53.6 | 65.5 | 81.3 | 51.4 | 78.3 | 91.6 | 63.8 |
| 1996 | 65.9 | 81.4 | 51.4 | 64.0 | 79.4 | 50.1 | 73.8 | 89.1 | 57.4 |
| 1997 | 66.7 | 81.9 | 52.5 | 64.5 | 79.8 | 50.8 | 76.1 | 90.1 | 61.0 |
| 1998 | 66.6 | 81.5 | 52.8 | 64.6 | 79.4 | 51.4 | 75.2 | 89.9 | 59.4 |
| 1999 | 67.4 | 81.4 | 54.3 | 65.2 | 79.2 | 52.6 | 77.0 | 90.1 | 62.8 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 66.8 | 80.6 | 54.1 | 65.3 | 78.9 | 53.2 | 75.5 | 89.2 | 60.3 |
| 2002 | 67.7 | 80.8 | 55.6 | 66.2 | 79.2 | 54.6 | 76.2 | 89.0 | 62.0 |
| 2003 | 67.6 | 80.3 | 55.9 | 66.2 | 78.6 | 55.1 | 75.9 | 89.3 | 61.1 |
| 2004 | 68.2 | 80.5 | 56.8 | 66.8 | 78.9 | 56.0 | 76.4 | 89.2 | 62.5 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Is there another explanation for the growth of the labour force besides demographic factors? And to what extent did the participation rate contribute to this growth? In Brazil, the overall participation rate remained stable between 1992 and 2004, at 68.2 per cent (table 12). It declined during periods of sluggish economic growth, presumably because of a discouraging effect on workers, but recovered after 2002. In international comparisons, Brazil's participation rate was close to that of the EU-25 (69.7 per cent, according to Eurostat, 2005) and higher than that of India (61 per cent), the Republic of Korea (65.8 per cent) and Chile (58.6 per cent), but lower than that of other developing countries such as China (82.3 per cent), Argentina (71.1 per cent) and Colombia (74.9 per cent) (ILO, 2005).

A gender analysis shows that the high growth rate of the female labour force can largely be explained by a significant increase in the female participation rate, from 52.6 per cent in 1992 to 56.8 per cent in 2004, while the growth rate of the working-age population was less pronounced. The female participation rate has been increasing in Brazil, but the gap is still significant. Moreover, the female participation rate is still below the level in the EU-25 (62.0 per cent), China (76.2 per cent) and even Colombia (65.0 per cent) and Argentina (59.9 per cent), although it is above the level in India (36.1 per cent), Chile (40.6 per cent) and the Republic of Korea (54.0 per cent). In contrast to their male counterparts, the participation rate is much lower for poor women with a low level of education (0–3 years), as they face many difficulties in entering the labour market, unlike poor men (Abramo, 2004).

While the female participation rate increased, that of men fell from 84.9 per cent to 80.5 per cent, which may be explained by a higher selectivity of the market requiring increasingly higher levels of education (IPEA, 2006). As expected, the rural participation rate (76.4 per cent) continues to be higher than the urban rate (66.8 per cent), although it has been declining slightly, particularly for men, while the overall urban participation rate has been increasing slightly. In brief, the main explanation for the high growth of the labour force is demographic, as the overall participation rate remained more or less stable in Brazil during the period of analysis, with the exception of an increasing female participation.

4. Synthesis: Main factors explaining the overall evolution of employment

4.1. Evolution of employment using the employment situation index

For a better understanding of the evolution of employment in Brazil, an overall employment situation index (ESI) has been constructed; this provides an integrated view of the three elements described earlier in sections 2.1 and 2.2. The index is based on the one used by a global ILO study (Ghose, Ernst and Majid, 2008) that contains details of the method. It employs three indicators, which are considered as the most relevant for an understanding of the employment situation:

1. *The employment ratio*, which is defined as the inverse of the unemployment rate.³¹
2. *The share of the formal segment in total employment*. This indicator reveals whether formal employment has become increasingly important in the economy.

³¹ It facilitates analysis, because, contrary to the unemployment rate, it moves in the same direction as the other two indicators.

3. *Productivity of non-formal workers or output per worker.* This indicator gives some indication of the evolution of the quality of employment in the non-formal segment of the labour market.³²

A fall in the ESI means a decline in the overall employment situation; conversely, a rise in the ESI indicates, an overall improvement. Different combinations are possible; for example, should the employment ratio rise, but the share of the formal segment fall and productivity in the non-formal segment be constant, this could mean that formal unemployment has merely changed into non-formal employment. Conversely, should the share in formal employment rise, but the productivity in the non-formal sector fall with a constant employment ratio, the employment situation may not have improved, but it could signify that a change in legislation has formalized some of the non-formal employment.

Table 13: Overall Employment Situation Index for Brazil, 1992-2004

| Productivity non-formal workers | Average annual rate of change (%) | | Overall employment ESI |
|---------------------------------|-----------------------------------|-------------------------------------|------------------------|
| | Employment ratio | Ratio of formal to total employment | |
| -0.3* | -0.38 | 0.33 | -0.18* |

Notes: *Statistically not significant. Average annual rate of change is calculated by fitting semi-log equations to time-series data. The ranking numbers are indexed to the year 1992 (see Appendix table H for a time series of these indicators and this index). The ratio of formal to total employment is based on the employment status category definition.

According to the ESI calculated for Brazil, the country experienced a slight decline in the overall employment situation, but this value was statistically insignificant (table 13).³³ The index showed that during the period of analysis, there was a positive evolution for three years (1993, 1996 and 2002) and near unity for three years. On the positive side, it should be noted that there was a slight rise in the share of formal employment in total employment³⁴. Nevertheless, the overall negative result can largely be explained by the negative evolution of the employment ratio. Moreover, although the productivity of the non-formal segment was slightly negative, its value is statistically insignificant. Many sectors with high employment, such as family services, trade, transport, textiles and clothing, performed poorly in terms of productivity, while only mixed sectors such as agriculture, which includes a small but highly productive modern segment, experienced positive productivity growth (see Appendix tables A and G).

At the same time, we observed a significant rise in unemployment, from 6.4 to 9 per cent during the period of analysis. What are the underlying factors of this rather surprising evolution, which also embraces a declining share of non-formal employment and a simultaneous increase in unemployment? Why should this be happening in countries with low social coverage and very limited active labour market policies?

³² See Appendix table G for the evolution of these indicators.

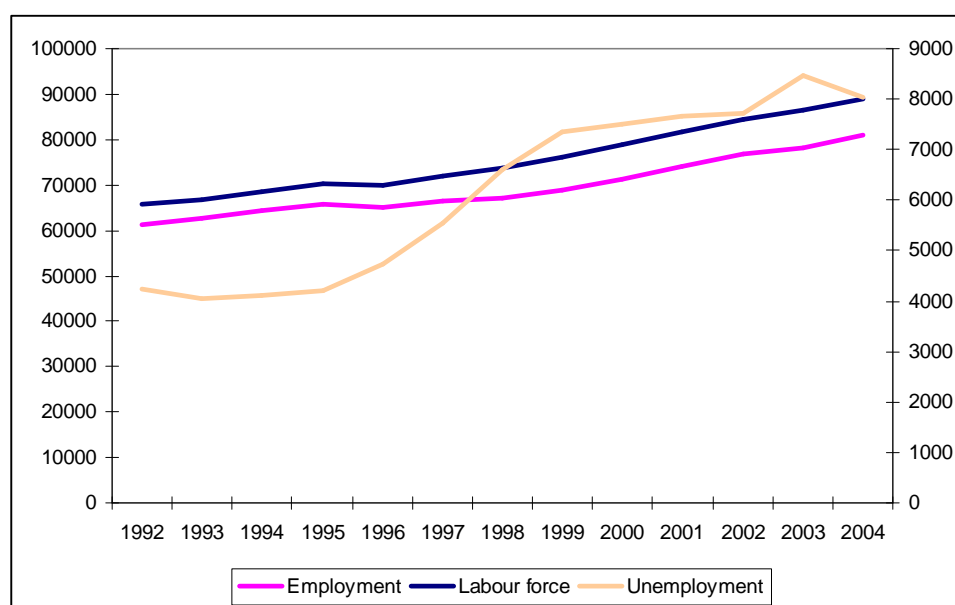
³³ These results are more or less confirmed by similar calculations in Ghose, Ernst and Majid (2008). There, the overall employment situation improved slightly. The employment ratio was also negative; the ratio of formal to total employment was positive but insignificant, and non-formal productivity was positive but significant, while in our study, the signs of significance are exactly the opposite. The slight difference with regard to productivity can be explained by the fact that more aggregated data were used in the Ghose, Ernst and Majid study than in this study. Their study defines manufacturing as a formal sector and agriculture and services as non-formal sectors, while our study differentiates between formal and non-formal sectors within manufacturing and services.

³⁴ Using the definition of formal employment by productivity, the evolution of the formal share is still positive, but just very slightly, with 0.0001 and the value is statistically insignificant.

First of all, the increase in unemployment affected specific social groups, which, more than others, could afford to be out of the labour market for a certain period of time (long-term unemployment) while they looked for a good job: a) youth, b) women and c) the better educated, mostly in d) the urban areas. As we have seen, the unemployment rate of women b) increased strongly, by 3.9 per cent, compared to men (1.5 per cent), and this was combined with a strong rise in the female participation rate. The same is true for youth (15-24 years of age, argument a), among whom the unemployment rate rose from 12.7 to 19.3 per cent,³⁵ despite a declining participation rate caused by more years spent in education. In developing countries, youth and women tend to be more likely than adult men to receive family support while waiting for jobs,³⁶ and they may choose unemployment instead of informal employment. It was also observed that the unemployed were better educated (argument c), see figure 2), in particular, the women and youth. The more educated people seem to want value for their investment in skills development, and may, therefore, be willing to dedicate more of their own time and resources to finding a good, formal job than accepting informal employment. The last argument d) refers to the rising urbanization of unemployment. Urban unemployment is high and increased strongly from 7.9 per cent in 1992 to 10.3 per cent in 2004. The urban labour force is generally more educated than the rural labour force. Moreover, in urban areas, it may be easier to find additional sources of income (e.g. social transfers) than in rural areas.

Secondly, the increase in short-term unemployment, which is related to precarious forms of employment, may have been as a result of a change in the structure of non-formal employment. During the period of analysis, Brazil experienced a decline in the share of the self-employed from 35.7 per cent to 31.5 per cent, whereas the share of non-registered wage earners, who may have precarious jobs and enter and exit the labour market often, rose from 21.8 per cent to 24.1 per cent.

Figure 7: Evolution of unemployment, employment and the labour force, 1992-2004



Source: IBGE/PNAD (Brazilian household survey data).

Note: The left axis represents employment and labour force, the right axis unemployment.

³⁵ Own calculation based on IPEA, 2006.

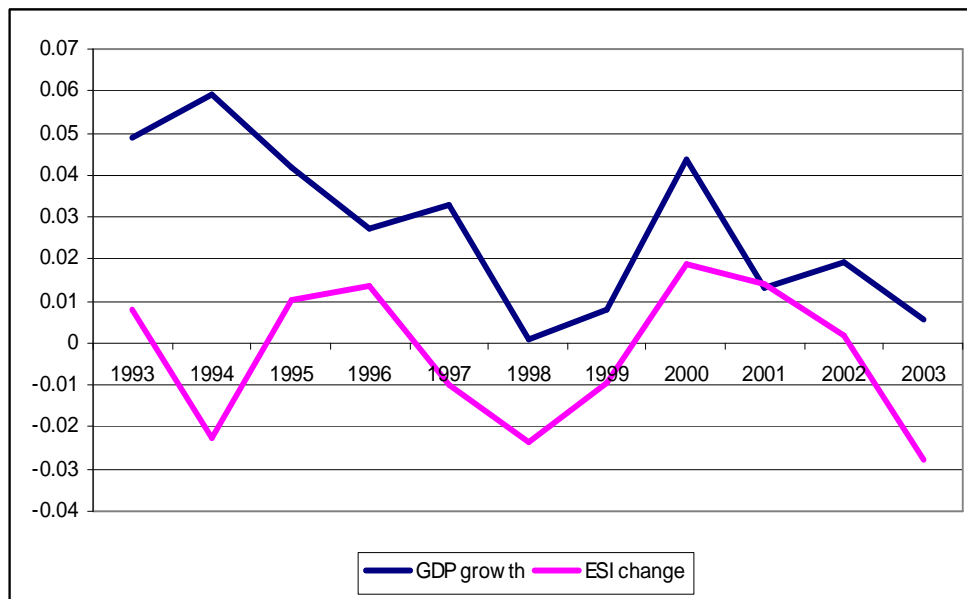
³⁶ See Ghose, Ernst and Majid, 2008.

Figure 6 illustrates this evolution quite clearly. It was during the mid-1990s that unemployment increased significantly and it remained about 50 per cent higher after 2000 than in 1992. At the same time, the gap between the labour force and employment increased, while growth rates of formal employment and the labour force remained quite similar.

Labour supply provides a partial explanation for the unsatisfactory evolution of the overall employment situation. While employment grew satisfactorily, at 2.23 per cent, it was below the growth rate of the labour force, at 2.57 per cent, which continued to rise strongly. Rising female participation boosted this phenomenon. In other words, the economy did not create enough employment to absorb the labour force. Although total employment creation was not sufficient, formal employment increased more than non-formal employment (2.55 compared to 1.98 per cent), which explains the growing share of formal employment.

We then examine the demand side factors and, in particular, the role of economic growth in the evolution of employment. On average, the period of analysis was characterized by slow growth and considerable fluctuations in GDP³⁷. This was the result of several economic crises that affected domestic investment negatively. Nevertheless, at 0.59, the employment elasticity of the formal segment of the labour market was relatively high. The relatively strong, labour-intensive nature of economic growth mitigated the negative effect of its low level. Figure 7 shows that the evolution of the overall employment situation (ESI) has been strongly influenced, by the evolution of economic growth, with the exception of the turmoil period of 1993 to 1995. Negative economic growth worsened the employment situation, as observed in the period 1995-1998, while strong growth improved it (1999-2000). A longer time series would certainly have shed more light on this issue. As demonstrated above, the period encompassing the Real Plan, 1992-1997, was characterized by low employment growth and relatively high labour productivity, when economic growth was rather volatile. This can be explained by the fact that economic opening and privatization of public enterprises (as well as exchange rate appreciation) led to new forms of more effective productive and administrative management, as well as the introduction of new technologies. The companies used rather defensive cost-reducing strategies and concentrated more on mergers and acquisitions than investments in new production plants. As a result, this period led to rises in productivity but was less favourable to employment.. The end of the 1990s until 2004 was, however, characterized by an acceleration of employment, particularly formal employment, combined with low productivity. This corresponds to a time when economic growth began to stabilize and the economic reform and industrial restructuring process was more or less concluded. Moreover, a stagnation of real wages and a low exchange rate favoured the expansion of labour rather than capital during the end of the 1990s. We may also assume a structural shift towards higher labour-intensive sectors. Appendix Figure B shows that after a decline between 1995 and 1997, employment intensity took in the formal segment of the labour market.

³⁷ The GDP growth rate was 2.5 per cent (in constant local currency) and that of GDP per capita was just 1.1 per cent during the period of analysis, compared with Asian emerging countries that had an average growth rate of more than 5 per cent.

Figure 8: Economic growth per capita and the overall employment situation, 1992-2003

Source: For ESI Index, see Appendix, Table H; real GDP growth rate in Reais: author's calculations, based on World Bank, World Development Indicators.

Note: ESI change shows the change of the Index from one year to another and is calculated in the same way as GDP growth.

4.2. A special gender focus: The evolution of the gender inequality gap

Section 3 has already demonstrated that the female labour force increased more than the male labour force, and that it rose by even more than the female working-age population. This is largely explained by the steady rise in the female participation rate during the period of analysis, from 52.6 per cent in 1992 to 56.8 per cent in 2004 (table 12). The educational level of the female labour force also rose and the average number of years in education was higher for the female labour force (8 per cent) than for the male labour force (7 per cent). According to IPEA (2006), the higher female participation was mainly the result of cultural and socioeconomic changes, as well as structural modifications in the economy. In Brazil, barriers to labour market entry of a non-economic nature have been reduced and there is now a greater need for women to supplement family budgets.

On the labour demand side, in 2004 there was still a wide gender gap, with an employment rate of 75 per cent for men compared to 50 per cent for women (Appendix table D). Nevertheless, this gap, defined as the female employment-to-population ratio divided by the male one (table 14), narrowed by 7 percentage points, from 0.60 in 1992 to 0.67 in 2004; over the same period, the employment rate for women increased by almost 2 percentage points, while the male rate declined. Unlike the urban areas, in the rural areas the employment rate for women declined by 1.3 percentage points, but this was less than the drop in the male employment rate, which fell by 2.4 percentage points. This caused a slight narrowing of the gap, from 0.67 in 1992 to 0.68 in 2004. Traditionally, the employment gender gap has been higher in the urban areas, but it declined sharply by 8 percentage points, and at 0.67 in 2004 it was close to the level of the rural areas.

Table 14: Gender gap in evolution of employment (employment-to-population ratio), by location, 1992-2004

| | Total | Urban | Rural |
|------|-------|-------|-------|
| 1992 | 0.60 | 0.59 | 0.67 |
| 1993 | 0.61 | 0.59 | 0.68 |
| 1994 | n.a. | n.a. | n.a. |
| 1995 | 0.63 | 0.62 | 0.69 |
| 1996 | 0.61 | 0.61 | 0.63 |
| 1997 | 0.62 | 0.61 | 0.67 |
| 1998 | 0.62 | 0.61 | 0.65 |
| 1999 | 0.64 | 0.63 | 0.68 |
| 2000 | n.a. | n.a. | n.a. |
| 2001 | 0.64 | 0.64 | 0.66 |
| 2002 | 0.66 | 0.65 | 0.69 |
| 2003 | 0.66 | 0.66 | 0.67 |
| 2004 | 0.67 | 0.67 | 0.68 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: The gap is defined as the female employment-to-population ratio divided by the male employment-to-population ratio.

Table 15: Gender gap in evolution of unemployment, by location, 1992-2004

| | Total | Urban | Rural |
|------|-------|-------|-------|
| 1992 | 1.46 | 1.42 | 1.80 |
| 1993 | 1.41 | 1.39 | 1.43 |
| 1994 | n.a. | n.a. | n.a. |
| 1995 | 1.40 | 1.39 | 1.23 |
| 1996 | 1.54 | 1.47 | 2.11 |
| 1997 | 1.57 | 1.53 | 1.75 |
| 1998 | 1.61 | 1.55 | 1.92 |
| 1999 | 1.53 | 1.48 | 1.75 |
| 2000 | n.a. | n.a. | n.a. |
| 2001 | 1.58 | 1.52 | 2.08 |
| 2002 | 1.57 | 1.53 | 1.57 |
| 2003 | 1.57 | 1.52 | 1.89 |
| 2004 | 1.70 | 1.62 | 2.54 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: The gap is defined as the female employment-to-population ratio divided by the male employment-to-population ratio.

While the male unemployment rate in 2004 was 6.9 per cent, the female rate was 11.8 per cent, i.e. 70 per cent higher (table 15). This gap widened after 1992 (1.46) by 24 percentage points. The gap, and the widening of the gap, was smaller in the urban areas but very high in the rural areas and increasing steadily. In 2004, female unemployment in the rural areas was two-and-a-half times higher than male unemployment, but at 4.3 per cent, it was still far lower than the urban female unemployment rate of 13 per cent. The higher proportion of women among the unemployed can, in part, be explained by the strong growth in their participation rate. Another reason may be that a proportionately larger number of female workers look for formal jobs and may be willing to wait for jobs for a certain period, possibly as they have access to means of survival, in particular family support (Ghose, Ernst and Majid, 2008).

Table 16: Gender gap by average years of education of the unemployed, by location, 1992 - 2004

| | Total | Urban | Rural |
|------|-------|-------|-------|
| 1992 | 1.14 | 1.13 | 1.29 |
| 1993 | 1.17 | 1.17 | 1.33 |
| 1994 | n.a. | n.a. | n.a. |
| 1995 | 1.17 | 1.17 | 1.41 |
| 1996 | 1.13 | 1.13 | 1.18 |
| 1997 | 1.15 | 1.14 | 1.21 |
| 1998 | 1.16 | 1.15 | 1.14 |
| 1999 | 1.12 | 1.12 | 1.15 |
| 2000 | n.a. | n.a. | n.a. |
| 2001 | 1.13 | 1.13 | 1.27 |
| 2002 | 1.08 | 1.08 | 1.22 |
| 2003 | 1.11 | 1.11 | 1.18 |
| 2004 | 1.09 | 1.08 | 1.17 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: The gap is defined as the average years of education of female unemployed divided by average years of education by the male unemployed.

Unemployed women were better educated than unemployed men, on average by 0.7 years in 2004, or by a ratio of 1.09 (table 16), although this is a deterioration from the earlier gap of 1.14³⁸ in 1992. In the rural areas there was a wider gap, of 1.17 in 2004, although, overall, this gap too was narrowing over the period under study (1.29 in 1992). The higher educational level of unemployed women is not a recent phenomenon: this situation already existed in 1992.

Table 17: Distribution of employment by sector and gender (per cent), 1992, 1998, 2004

| | 1992 | | 1998 | | 2004 | |
|---|------|-------|------|-------|------|-------|
| | Men | Women | Men | Women | Men | Women |
| Agriculture | 28.9 | 23.4 | 25.1 | 18.3 | 22.5 | 14.8 |
| Manufacturing | 15.9 | 13.3 | 14.5 | 12.0 | 15.5 | 12.5 |
| Other industrial activities | 1.6 | 0.3 | 1.3 | 0.3 | 1.3 | 0.2 |
| Construction | 10.7 | 0.5 | 12.3 | 0.7 | 11.0 | 0.4 |
| Trade and repair | 16.9 | 11.8 | 17.8 | 13.8 | 18.8 | 16.0 |
| Hotels and restaurants | 3.4 | 4.1 | 3.5 | 4.7 | 3.1 | 4.3 |
| Transport and communications | 6.0 | 1.0 | 6.7 | 1.3 | 7.2 | 1.4 |
| Public administration | 4.8 | 4.2 | 4.6 | 4.1 | 5.1 | 4.5 |
| Education, health & social services | 2.7 | 15.6 | 3.2 | 17.1 | 3.6 | 16.6 |
| Domestic services | 0.6 | 15.8 | 0.8 | 17.0 | 0.9 | 17.3 |
| Other collectives, social & personal services | 2.3 | 5.1 | 2.9 | 5.0 | 3.1 | 5.9 |
| Other activities | 5.8 | 4.8 | 6.7 | 5.4 | 7.6 | 6.2 |
| Not declared or defined activities | 0.5 | 0.2 | 0.5 | 0.1 | 0.4 | 0.1 |

Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

³⁸ The fact that the ratio is greater than one means that women are more unemployed than men. The figure of 1.09 means that women are 9 per cent more unemployed than men.

An analysis of the distribution of employment by sector and gender reveals that men are mostly employed in agriculture, trade and repair, manufacturing and construction (table 17).³⁹ A high proportion of female workers are also employed in agriculture, manufacturing and trade and repair, but to a lesser extent than men. However, there is a higher proportion of female workers in domestic services and education, health and social services, where their share has even increased. Thus, there is a higher proportion of women than men in service jobs that are, in general, considered to be low productivity (see section 1.1. and Bonelli, 2002), and the situation has not changed significantly in recent years. A positive evolution has been the decline of female employment in bad quality jobs, such as agriculture, and a rise in their share in formal employment such as in education, health and social services. Overall, there have been greater fluctuations in the share of women in employment.

Table 18: Employment of men and women by employment status categories, total, agricultural and non-agricultural sectors, 1992, 2004

| | Total | | | | Non agricultural sector | | | | Agricultural sector | | | |
|-----------------------|-------|-------|------|-------|-------------------------|-------|------|-------|---------------------|-------|------|-------|
| | 1992 | | 2004 | | 1992 | | 2004 | | 1992 | | 2004 | |
| | Men | Women | Men | Women | Men | Women | Men | Women | Men | Women | Men | Women |
| Entrepreneurs | 5.4 | 1.6 | 5.4 | 2.6 | 5.5 | 1.9 | 5.7 | 2.9 | 5.1 | 0.6 | 4.5 | 0.8 |
| Wage earners | 60.6 | 60.0 | 62.4 | 66.8 | 69.4 | 75.2 | 69.2 | 76.5 | 39.2 | 10.3 | 39.0 | 10.7 |
| <i>Registered</i> | 39.7 | 36.8 | 40.3 | 39.8 | 51.7 | 47.4 | 48.4 | 46.1 | 10.4 | 2.2 | 12.7 | 3.6 |
| <i>Not registered</i> | 20.9 | 23.2 | 22.1 | 26.9 | 17.6 | 27.8 | 20.8 | 30.4 | 28.8 | 8.1 | 26.3 | 7.1 |
| Self-employed | 34.0 | 38.3 | 32.2 | 30.6 | 25.1 | 22.8 | 25.1 | 20.6 | 55.7 | 89.2 | 56.5 | 88.5 |

Source: IBGE, based on PNAD (Brazilian household survey data).

Note: Wage earners include domestic workers. Registered wage earners include public servants. Self-employed include own-account workers, non-remunerated workers and those working for their own consumption or use. Non-declared workers are not shown in this table.

Women increased their share in various employment status categories (table 18). A positive evolution was their increased share as entrepreneurs, which is mostly formal employment, and their reduced share in the categories of non-registered domestic workers in the non-agricultural sector and self-employed, with the latter down from 38.3 per cent in 1992 to 30.6 per cent in 2004. In the agricultural sector, in registered wage employment, women improved their share significantly, from 2.2 per cent in 1992 to 3.6 per cent in 2004, even though it remained low. Their share as wage earners increased by 3.7 percentage points, but this was mainly due to their rise in other wage employment activities that are not registered, in particular in the non-agricultural sector. The evolution of male workers was less spectacular and showed fewer, though mainly positive, changes. The share of wage earners increased slightly, but that of the self-employed, in particular the non-remunerated, own-account workers decreased. In brief, occupational segmentation persists as a form of discrimination. Women are less numerous in formal jobs and are overrepresented in precarious or non-remunerated activities.⁴⁰

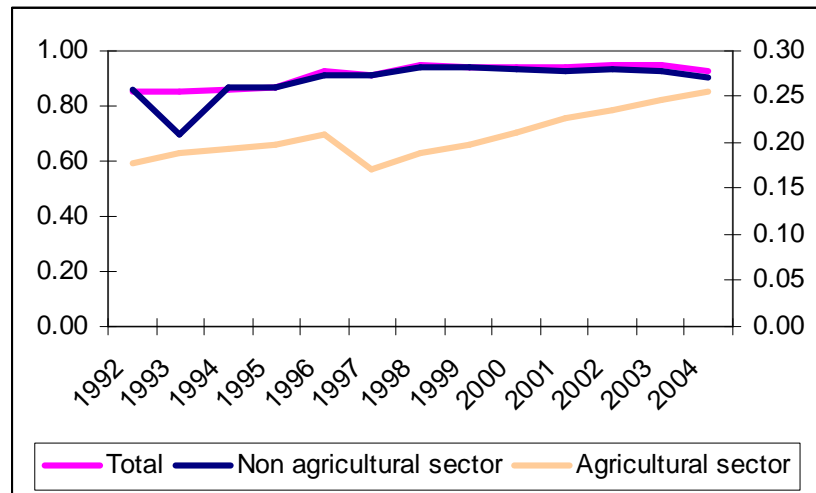
Figure 9 shows the general evolution of the gap between women and men with regard to their respective shares in formal employment. It clearly indicates a reduction of the gap by 8

³⁹ While male workers have maintained a high share in manufacturing and construction, they are significantly less present in agriculture. Males are also more present in trade and repair, both sectors with a high proportion of non-formal employment.

⁴⁰ See also Abramo, 2004; and Kakwani and Son, 2006.

percentage points to 0.93 between 1992 and 2004 (left axis). It is striking that the gap between male and female workers was still very high in 2004, even though declining, in the agricultural sector with a ratio of 0.26 in 1992 (right axis).

Figure 9: Gender gap in share of formal employment in total employment, 1992 to 2004



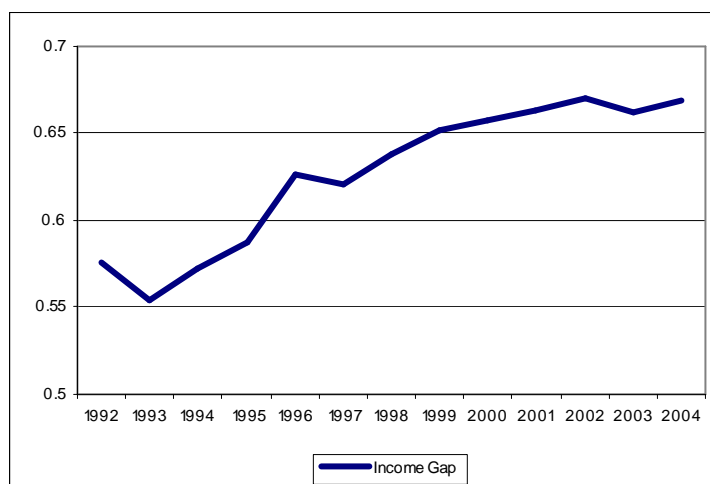
Source: Author's calculations, based on IBGE/PNAD (Brazilian household survey data).

Note: The right axis refers to the agricultural sector, the left to non-agricultural sectors. The gender gap is defined as the female share of formal employment in total employment divided by the respective value of male workers.

Income is another important indicator of gender discrimination (figure 10). Income gap data (female wage divided by male wage) shows a significant gap between female and male workers. Women earned only 57.6 per cent of male income in 1992, but after a short rise in the income gap, it narrowed continuously after 1993, reaching 66.9 per cent in 2004. Nevertheless, the gap in income between male and female workers is still quite large by international standards, even compared with other countries in Latin America.⁴¹ However, pure income data do not reveal income discrimination in a strict sense, as they do not show whether women earn less or more for the same job. Another argument explaining the income gap is that women are working predominantly in different job categories than the men. In Brazil, as we have seen, women are still over-represented in low productivity and non-formal forms of employment, which partly explains the income gap.⁴² A recent IPEA study (2006) also found that the persistently high gender gap is mainly due to occupational segmentation. Galvez (2006) also identifies segmentation by job categories as a major reason for the income gap, but during the 1990s, this segmentation was rather stable for the overall economy. Men received higher salaries, especially in industry, but also in services. Nevertheless, a recent study (Grimshaw and Miozzo, 2003) found that, according to occupational groups, in 1999 women in Brazil earned 72 per cent of men's wages, with low levels for agricultural workers (57 per cent) and high levels for female workers in transport (105 per cent).

⁴¹ According to Abramo and Valenzuela (2006), the average monthly income of female workers compared to male workers among the non-agricultural wage earners in 2000 was as follows: Brazil: 0.61 (1990: 0.53); Argentina: 0.72; Mexico: 0.71; Chile: 0.65; Colombia: 0.75; Peru: 0.70; Honduras: 0.58; Latin American average: 0.66 (1990: 0.59). The differences are smaller when the gap is calculated on the basis of average income per hour and not by month (see, for example: ILO, *Panorama Laboral*, 2001).

⁴² The results are confirmed by IPEA (2006), which also found a narrowing income gap: men earned 1.81 more than women in 1993 and 1.49 in 2004. This is also confirmed by the Inter-American Development Bank (IDB) (2003), which found wage differentials by gender in 1990-2001 had fallen by 1.17 per cent (Mincerian rates).

Figure 10: Gender gap in evolution of income from primary job, 1992-2004

Source: Author's calculations, based on IPEA, 2006 (derived from IBGE/PNAD data).

Note: Values are based on constant local currency (2004). The income gap is defined as female income divided by male income.

To summarize, a gender inequality gap index has been developed. In the first stage, time-series estimates of the values of each of the three selected indicators were derived; these are considered to be the most relevant for understanding gender discrimination in the labour market, the income gap, the employment ratio gap and the gap in the ratio of formal to total employment. The gap between male and female values was calculated by dividing female values by male values. Their evolution is summarized in table 19, which shows a declining gap in income and in the share of formal to total employment, but a rising employment gap. There is, unfortunately, an unavoidable overlap between the income gap indicator and the formal to total employment gap indicator. Non-formal employment, for example, is closely related to low income.

Table 19: Gender gap in the evolution of income, employment ratio and ratio of formal to total employment, 1992-2004

| Year | Income | Employment ratio | Ratio of formal to total employment |
|------|--------|------------------|-------------------------------------|
| 1992 | 0.576 | 0.974 | 0.851 |
| 1993 | 0.554 | 0.978 | 0.849 |
| 1994 | 0.573 | 0.978 | 0.856 |
| 1995 | 0.588 | 0.978 | 0.864 |
| 1996 | 0.626 | 0.968 | 0.923 |
| 1997 | 0.621 | 0.962 | 0.912 |
| 1998 | 0.638 | 0.953 | 0.946 |
| 1999 | 0.651 | 0.955 | 0.937 |
| 2000 | 0.657 | 0.954 | 0.940 |
| 2001 | 0.663 | 0.953 | 0.941 |
| 2002 | 0.670 | 0.955 | 0.945 |
| 2003 | 0.662 | 0.951 | 0.949 |
| 2004 | 0.669 | 0.948 | 0.927 |

Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

In the second stage, these values were transformed into index numbers by setting the value for the initial year as 1 (in this case here 1992). In the third and final stage, a simple average of the three indices for each of the years was calculated. This average was then considered the gender inequality gap index GIGI. A fall in the GIGI indicates an increase in inequality against female workers on the labour market, whereas a rise indicates the opposite.

Table 20: Gender inequality gap index (GIGI), 1992-2004

| Average annual growth rate (%) | | | Index (1992 = 100) GIGI |
|--------------------------------|----------------------|--------------------------------|----------------------------|
| Income gap | Employment ratio gap | Formal to total employment gap | |
| 1.61 | -0.28 | 0.98 | 0.79 |

Note: All the values are statistically significant.

The indicator confirms the earlier observations, namely that the income gap between male and female workers had narrowed and that more women were in a better employment situation in 2004 than 12 years earlier. Nevertheless, the employment situation was worse for women than for men, as the former were suffering from increasingly higher unemployment (table 20). Overall, however, women seemed to have suffered less discrimination in the labour market in 2004 than in 1992, with a positive and significant GIGI index of 0.79 percent. This is an encouraging sign, even though much still needs to be done to provide them with opportunities in the labour market that are equal to those enjoyed by men.

5. Concluding remarks

Since the 1990s, Brazil has made profound changes to its development strategy, opening up its economy, reducing the role of the state as an active player and applying restrictive macroeconomic policies during the period of analysis. These politics should consign the “lost decade” of the 1980s to the dustbin of history. Nevertheless, the 1990s and early 2000s were, on average, characterized by moderate and highly volatile growth. The aim of this paper is to explain the reaction of the labour market to the new economic setting.

This analysis demonstrates that during the period of analysis, the overall employment situation did not improve, but actually stagnated. If we consider the evolution of formal and non-formal segments of the economy together, the ESI shows a slightly negative, but statistically insignificant, evolution of the overall employment situation. Increasing unemployment and non-formal employment, especially in the urban areas and among women and youth, remains a source of concern. Moreover, as Brazil is still characterized by a strong dualistic economy and labour market, the fact that the productivity gap between formal and non-formal employment did not narrow during the period of analysis is rather disturbing.

On the positive side, Brazil experienced a slight rise in the share of total formal employment, (particularly more recently) and a declining gender gap. Gender inequality in employment persisted, in particular with regard to opportunities, but overall, the gap between male and female workers decreased. Female labour supply increased rapidly over the period under study, which led to higher employment rates, but also to higher female unemployment rates. To a large extent, women continued to work in low productivity and non-formal jobs, even though, on average, they had more years of education than men. Nevertheless, the number of

women in formal jobs increased to a greater extent than that of men. Also, the income gap, which was still high in comparison to international and regional standards, was observed to be narrowing.

What explains the generally unsatisfactory evolution of overall employment? On the supply side, this is explained by the ongoing strong labour force growth and on the demand side, by the high fluctuation of economic growth and its low average level during the period of analysis. Figure 7 confirms the strong correlation of economic growth and the evolution of the ESI, after the turmoil period of the early 1990s. However, while employment growth was low and highly productive until 1997, this trend has since been reversed. An additional factor explaining rising (formal) employment since the late 1990s was a structural shift of production towards sectors with higher employment intensity and lower productivity. There is scope for future studies to investigate this shift in more detail and to understand the explanation for it, as well as the process involved.

The challenges facing Brazil's policy-makers are clear: they need to reverse the rising trend in urban unemployment and non-formal employment as a matter of priority, since it is a source of social conflict in the urban areas. This requires the accelerated growth of regular employment, which has, indeed, been occurring more frequently in recent years. Recent data paint a more positive picture of the labour market. One declared priority of the President's second term in office has been accelerated economic growth, which, he hopes, may have a positive impact on the creation of new formal jobs, taking into account the recent growth in labour-intensive sectors. Another major goal would be to improve productivity, in particular in the non-formal segment of the labour market, in order to narrow the gap with the formal segment. Working conditions and the productivity of workers in non-formal segments of the economy are low and need to be improved. Despite recent advances, the educational level of Brazilian workers still lags behind that of many other countries. Upgrading the general skill and educational level of the Brazilian labour force could contribute to greater productivity in both the formal and non-formal segments of the economy. An additional challenge is to improve the business environment for the self-employed and for micro enterprises, to help them overcome the lack of financing, access new technologies and improve their skills development. Improving the quality and overall coverage of social services (e.g. health) may also exert a positive influence on the evolution of productivity in the non-formal segment of the economy. A declining gender gap is a positive signal, but more needs to be done, in particular to ensure that women receive the same wages for the same jobs as men, and to provide them with better access to the same types of jobs as men.

Appendix

Table A: Productivity and employment by sector, 1992, 2003

| | Productivity 1992 | Employment | Share | Productivity 2003 | Employment | Share | Av. Productivity 1992-2003 |
|----------------------------------|----------------------|-------------------|--------------|----------------------|-------------------|--------------|-------------------------------|
| Total | 11675 | 59 251 500 | | 11131 | 67 334 200 | | 11772 |
| Agriculture | 2754 | 15 642 100 | 26.4% | 5150 | 12 711 200 | 18.9% | 3863 |
| Mining | 15749 | 261 100 | 0.4% | 20514 | 245 500 | 0.4% | 13119 |
| Petrol extraction | 149240 | 32 700 | 0.1% | 954830 | 63 300 | 0.1% | 364052 |
| Non-metallic minerals | 14823 | 478 800 | 0.8% | 15325 | 402 500 | 0.6% | 15327 |
| Steel industry | 61352 | 117 400 | 0.2% | 147944 | 82 700 | 0.1% | 74110 |
| Non-iron metallic industry | 45058 | 57 300 | 0.1% | 58721 | 63 900 | 0.1% | 50300 |
| Other metallurgy products | 11410 | 615 800 | 1.0% | 11097 | 722 500 | 1.1% | 11659 |
| Machines & tractors | 30638 | 433 000 | 0.7% | 52664 | 640 000 | 1.0% | 37461 |
| Electrical material | 33361 | 140 900 | 0.2% | 18174 | 119 100 | 0.2% | 24272 |
| Electronic material | 38351 | 112 700 | 0.2% | 33137 | 96 000 | 0.1% | 42737 |
| Automobiles, trucks, buses | 40807 | 85 900 | 0.1% | 42886 | 76 200 | 0.1% | 58657 |
| Other vehicles | 26090 | 230 400 | 0.4% | 21990 | 224 500 | 0.3% | 25745 |
| Wooden fabrics | 5704 | 760 800 | 1.3% | 6078 | 913 300 | 1.4% | 6068 |
| Pulp & paper | 14786 | 439 200 | 0.7% | 26476 | 428 500 | 0.6% | 18942 |
| Rubber | 30958 | 74 900 | 0.1% | 56507 | 55 000 | 0.1% | 37370 |
| Non-petroch. industry | 65980 | 85 100 | 0.1% | 101101 | 68 200 | 0.1% | 77951 |
| Petrochem. industry | 254813 | 76 600 | 0.1% | 505447 | 55 700 | 0.1% | 304796 |
| Diverse chem. products | 34603 | 184 400 | 0.3% | 46607 | 150 600 | 0.2% | 37110 |
| Pharmaceutical products | 37228 | 119 600 | 0.2% | 32637 | 117 600 | 0.2% | 42789 |
| Plastic materials | 19492 | 168 200 | 0.3% | 15206 | 223 200 | 0.3% | 19758 |
| Textile | 16805 | 360 000 | 0.6% | 10898 | 233 300 | 0.3% | 12451 |
| Clothing | 2726 | 1 498 900 | 2.5% | 2340 | 1 668 800 | 2.5% | 2603 |
| Footwear | 6946 | 406 300 | 0.7% | 6785 | 399 800 | 0.6% | 5827 |
| Coffee industry | 11392 | 74 500 | 0.1% | 28063 | 70 300 | 0.1% | 24161 |
| Vegetable products proc. | 18441 | 322 900 | 0.5% | 12235 | 307 600 | 0.5% | 15055 |
| Meat processing | 11768 | 242 100 | 0.4% | 14786 | 230 400 | 0.3% | 14545 |
| Milk & dairy products | 21755 | 64 400 | 0.1% | 20666 | 57 900 | 0.1% | 27070 |
| Sugar industry | 14613 | 91 300 | 0.2% | 42317 | 82 500 | 0.1% | 20580 |
| Refining of vegetable oils | 58579 | 50 400 | 0.1% | 70437 | 35 800 | 0.1% | 52776 |
| Other foods & drinks | 11127 | 669 100 | 1.1% | 9267 | 624 700 | 0.9% | 11610 |
| Diverse industries | 12811 | 286 800 | 0.5% | 15989 | 340 700 | 0.5% | 12777 |
| Public utility services | 58219 | 290 700 | 0.5% | 103730 | 242 300 | 0.4% | 84613 |
| Civil construction | 12341 | 3 451 200 | 5.8% | 13906 | 3 771 400 | 5.6% | 17738 |
| Trade | 6655 | 7 748 500 | 13.1% | 6169 | 11 296 000 | 16.8% | 6097 |
| Transport | 10293 | 2 040 300 | 3.4% | 7358 | 2 817 100 | 4.2% | 9084 |
| Communications | 50743 | 172 200 | 0.3% | 135586 | 269 900 | 0.4% | 94236 |
| Financial institutions | 163320 | 871 400 | 1.5% | 66173 | 817 100 | 1.2% | 65511 |
| Family services | 5229 | 7 625 200 | 12.9% | 3805 | 10 416 900 | 15.5% | 5432 |
| Business services | 14072 | 1 687 400 | 2.8% | 13610 | 3 238 300 | 4.8% | 14482 |
| Real estate services | 234759 | 244 100 | 0.4% | 269531 | 257 500 | 0.4% | 343763 |
| Public administration | 12907 | 6 279 800 | 10.6% | 21077 | 6 364 500 | 9.5% | 19796 |
| Non merch. private serv. | 1516 | 4 657 100 | 7.9% | 1620 | 6 331 900 | 9.4% | 1609 |
| Non-formal share | | | 70.4% | | | 71.2% | |
| Formal share | | | 29.6% | | | 28.8% | |

Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

Note: The highlighted sectors had below average productivity growth (11675 in 1992 and 11131 in 2003). The non-formal share has been calculated by taking 2003 values and by defining those low productivity sectors as the formal segment of the economy.

Table B: Evolution of the unemployment rate, by location, 1992-2004

| Year | Total | | Urban | | Rural | |
|------|-------|-------|-------|-------|-------|-------|
| | Men | Women | Men | Women | Men | Women |
| 1992 | 5.4% | 7.9% | 6.8% | 9.7% | 1.2% | 2.1% |
| 1993 | 5.2% | 7.3% | 6.4% | 8.9% | 1.3% | 1.9% |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 5.2% | 7.2% | 6.2% | 8.7% | 1.5% | 1.8% |
| 1996 | 5.6% | 8.6% | 6.8% | 10.0% | 1.5% | 3.1% |
| 1997 | 6.3% | 9.8% | 7.6% | 11.6% | 1.7% | 3.0% |
| 1998 | 7.2% | 11.5% | 8.6% | 13.3% | 2.2% | 4.2% |
| 1999 | 7.9% | 12.1% | 9.5% | 14.1% | 2.4% | 4.1% |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 7.5% | 11.9% | 8.8% | 13.4% | 1.8% | 3.8% |
| 2002 | 7.3% | 11.5% | 8.5% | 13.0% | 2.1% | 3.3% |
| 2003 | 7.8% | 12.3% | 9.1% | 13.8% | 1.9% | 3.6% |
| 2004 | 6.9% | 11.8% | 8.0% | 13.0% | 1.7% | 4.3% |

Source: Author's calculations, based on IPEA, 2006 based on IBGE/PNAD data.

Table C: Unemployed by average years of education, by gender and location, 1992, 1994

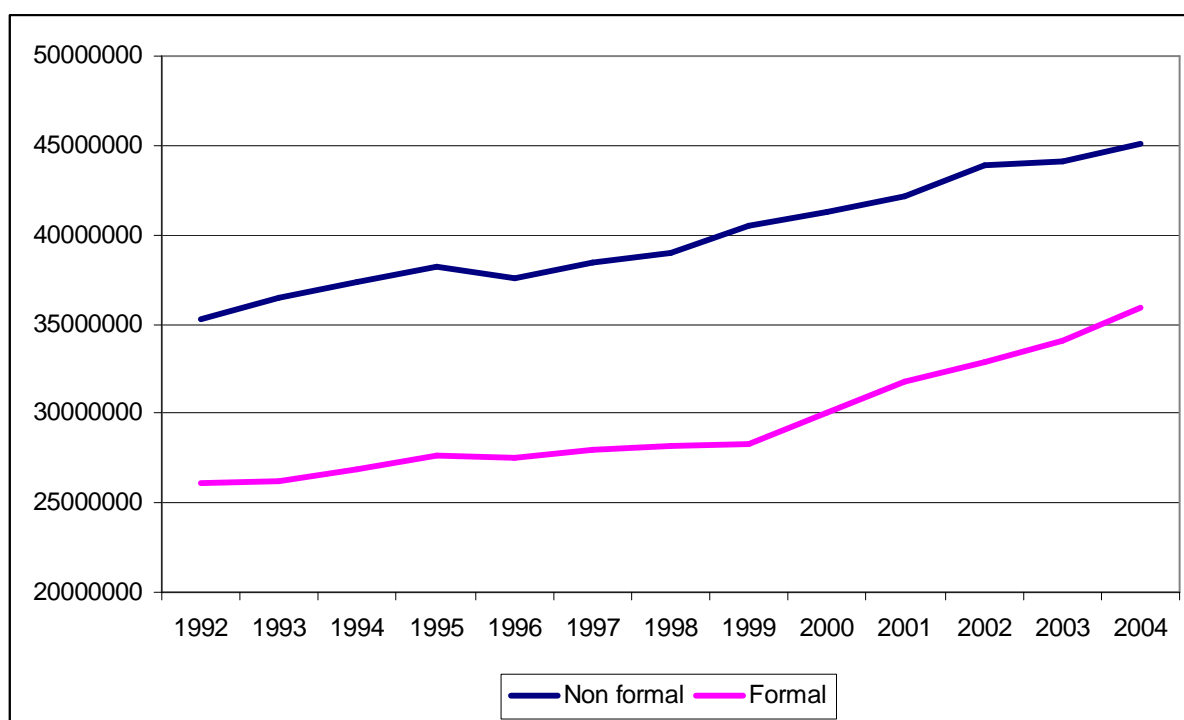
| | Total | Total | | Total | Urban | | Total | Rural | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | Men | Women | | Men | Women | | Men | Women |
| 1992 | 6.2 | 5.8 | 6.6 | 6.4 | 6.0 | 6.8 | 4.4 | 3.8 | 4.9 |
| 1993 | 6.4 | 5.9 | 6.9 | 6.5 | 6.0 | 7.0 | 4.5 | 3.9 | 5.2 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 6.4 | 5.9 | 6.9 | 6.5 | 6.0 | 7.0 | 4.6 | 3.9 | 5.5 |
| 1996 | 6.5 | 6.1 | 6.9 | 6.6 | 6.2 | 7.0 | 4.9 | 4.5 | 5.3 |
| 1997 | 6.7 | 6.2 | 7.1 | 6.8 | 6.3 | 7.2 | 5.3 | 4.8 | 5.8 |
| 1998 | 6.9 | 6.4 | 7.4 | 7.1 | 6.5 | 7.5 | 5.5 | 5.1 | 5.8 |
| 1999 | 7.1 | 6.7 | 7.5 | 7.2 | 6.8 | 7.6 | 5.8 | 5.4 | 6.2 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 7.3 | 6.8 | 7.7 | 7.4 | 6.9 | 7.8 | 5.6 | 4.9 | 6.2 |
| 2002 | 7.6 | 7.3 | 7.9 | 7.7 | 7.4 | 8.0 | 6.1 | 5.5 | 6.7 |
| 2003 | 7.8 | 7.4 | 8.2 | 7.9 | 7.4 | 8.2 | 6.2 | 5.7 | 6.7 |
| 2004 | 8.0 | 7.6 | 8.3 | 8.1 | 7.7 | 8.3 | 6.5 | 5.9 | 6.9 |

Source: Author's calculations, based on IPEA, 2006 based on IBGE/PNAD data.

Table D: Evolution of the employment-to-population ratio (%), by location, 1992-2004

| Year | Total | | Urban | | Rural | |
|------|-------|-------|-------|-------|-------|-------|
| | Men | Women | Men | Women | Men | Women |
| 1992 | 80.3% | 48.4% | 77.2% | 45.4% | 91.3% | 61.1% |
| 1993 | 80.0% | 48.7% | 77.0% | 45.7% | 91.0% | 61.9% |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 79.2% | 49.7% | 76.3% | 46.9% | 90.3% | 62.6% |
| 1996 | 76.9% | 47.0% | 74.1% | 45.1% | 87.8% | 55.6% |
| 1997 | 76.7% | 47.4% | 73.7% | 44.9% | 88.5% | 59.2% |
| 1998 | 75.7% | 46.7% | 72.5% | 44.6% | 87.9% | 56.9% |
| 1999 | 75.0% | 47.8% | 71.7% | 45.2% | 87.9% | 60.2% |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 74.5% | 47.7% | 71.9% | 46.1% | 87.6% | 58.0% |
| 2002 | 74.8% | 49.2% | 72.5% | 47.5% | 87.1% | 60.0% |
| 2003 | 74.0% | 49.0% | 71.5% | 47.5% | 87.5% | 58.9% |
| 2004 | 75.0% | 50.2% | 72.6% | 48.7% | 87.6% | 59.8% |

Source: Author's calculations, based on IPEA, 2006 based on IBGE/PNAD data.

Figure A: Evolution of formal and non-formal employment, 1992-2004

Source: Author's calculations, based on IPEA, 2006 based on IBGE/PNAD data.

Table E: Evolution of the labour force, by gender and location, 1992-2004

| Year | Total | Men | Women | Urban | | | Rural | | |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| | | | | Total | Men | Women | Total | Men | Women |
| 1992 | 65 648 033 | 39 452 227 | 26 195 806 | 50 337 094 | 30 075 284 | 20 261 810 | 15 310 939 | 9 376 943 | 5 933 996 |
| 1993 | 66 668 581 | 39 998 917 | 26 669 664 | 51 307 700 | 30 560 865 | 20 746 835 | 15 360 881 | 9 438 052 | 5 922 829 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 70 082 122 | 41 452 983 | 28 629 139 | 54 476 843 | 31 958 505 | 22 518 338 | 15 605 279 | 9 494 478 | 6 110 801 |
| 1996 | 69 802 223 | 41 522 149 | 28 280 074 | 54 897 538 | 32 202 012 | 22 695 526 | 14 904 685 | 9 320 137 | 5 584 548 |
| 1997 | 72 032 523 | 42 613 241 | 29 419 282 | 56 546 625 | 33 094 166 | 23 452 459 | 15 485 898 | 9 519 075 | 5 966 823 |
| 1998 | 73 778 323 | 43 465 074 | 30 313 249 | 58 079 754 | 33 707 056 | 24 372 698 | 15 698 569 | 9 758 018 | 5 940 551 |
| 1999 | 76 219 420 | 44 351 178 | 31 868 242 | 59 809 809 | 34 369 584 | 25 440 225 | 16 409 611 | 9 981 594 | 6 428 017 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 81 532 913 | 47 119 346 | 34 413 567 | 67 695 759 | 38 551 279 | 29 144 480 | 13 837 154 | 8 568 067 | 5 269 087 |
| 2002 | 84 591 483 | 48 416 541 | 36 174 942 | 70 465 442 | 39 756 986 | 30 708 456 | 14 126 041 | 8 659 555 | 5 466 486 |
| 2003 | 86 662 147 | 49 392 068 | 37 270 079 | 72 361 776 | 40 576 523 | 31 785 253 | 14 300 371 | 8 815 545 | 5 484 826 |
| 2004 | 89 032 237 | 50 240 140 | 38 792 097 | 74 579 288 | 41 441 306 | 33 137 982 | 14 452 949 | 8 798 834 | 5 654 115 |
| <i>Annual growth</i> | <i>2.61</i> | <i>2.10</i> | <i>3.33</i> | <i>3.42</i> | <i>2.83</i> | <i>4.24</i> | <i>-0.74</i> | <i>-0.75</i> | <i>-0.07</i> |

Source: IBGE, based on PNAD (Brazilian household survey data).

Table F: Evolution of the working age population, by gender and location, 1992-2004

| Year | Total | Men | Women | Urban | | | Rural | | |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| | | | | Total | Men | Women | Total | Men | Women |
| 1992 | 96 275 654 | 46 476 688 | 49 798 966 | 76 625 930 | 36 331 478 | 40 294 452 | 19 649 724 | 10 145 210 | 9 504 514 |
| 1993 | 98 153 244 | 47 382 495 | 50 770 749 | 78 525 301 | 37 150 110 | 41 375 191 | 19 627 943 | 10 232 385 | 9 395 558 |
| 1994 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1995 | 103 075 326 | 49 655 205 | 53 420 121 | 83 133 459 | 39 293 936 | 43 839 523 | 19 941 867 | 10 361 269 | 9 580 598 |
| 1996 | 105 992 975 | 50 995 503 | 54 997 472 | 85 808 367 | 40 538 324 | 45 270 043 | 20 184 608 | 10 457 179 | 9 727 429 |
| 1997 | 108 033 627 | 52 047 119 | 55 986 508 | 87 681 549 | 41 477 890 | 46 203 659 | 20 352 078 | 10 569 229 | 9 782 849 |
| 1998 | 110 735 450 | 53 332 670 | 57 402 780 | 89 872 711 | 42 477 069 | 47 395 642 | 20 862 739 | 10 855 601 | 10 007 138 |
| 1999 | 113 100 404 | 54 464 633 | 58 635 771 | 91 780 926 | 43 381 714 | 48 399 212 | 21 319 478 | 11 082 919 | 10 236 559 |
| 2000 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2001 | 122 054 182 | 58 486 208 | 63 567 974 | 103 715 816 | 48 885 871 | 54 829 945 | 18 338 366 | 9 600 337 | 8 738 029 |
| 2002 | 125 023 490 | 59 938 649 | 65 084 841 | 106 478 360 | 50 205 696 | 56 272 664 | 18 545 130 | 9 732 953 | 8 812 177 |
| 2003 | 128 164 935 | 61 479 919 | 66 685 016 | 109 316 480 | 51 602 797 | 57 713 683 | 18 848 455 | 9 877 122 | 8 971 333 |
| 2004 | 130 607 746 | 62 371 437 | 68 236 309 | 111 698 412 | 52 502 625 | 59 195 787 | 18 909 334 | 9 868 812 | 9 040 522 |
| <i>Annual growth</i> | <i>2.63</i> | <i>2.56</i> | <i>2.70</i> | <i>3.29</i> | <i>3.24</i> | <i>3.33</i> | <i>-0.52</i> | <i>-0.43</i> | <i>-0.61</i> |

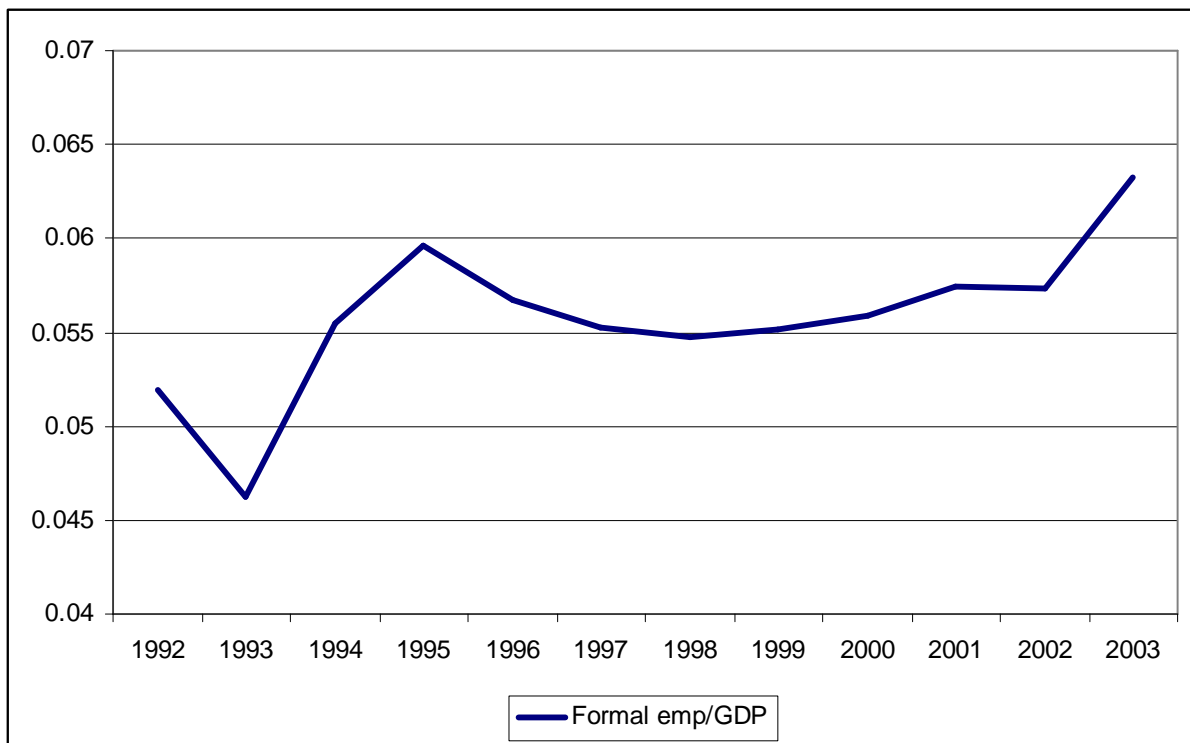
Source: IBGE, based on PNAD (Brazilian household survey data).

Table G: Evolution of the productivity of non-formal workers, the employment ratio and the ratio of formal to total employment, 1992-2003

| Year | Productivity non-formal workers | Employment ratio | Ratio of formal to total employment |
|------|---------------------------------|------------------|-------------------------------------|
| 1992 | | 0.603 | 0.425 |
| 1993 | 0.037 | 0.608 | 0.418 |
| 1994 | -0.067 | 0.620 | 0.419 |
| 1995 | 0.029 | 0.628 | 0.420 |
| 1996 | 0.042 | 0.611 | 0.423 |
| 1997 | -0.017 | 0.617 | 0.421 |
| 1998 | -0.052 | 0.618 | 0.419 |
| 1999 | -0.002 | 0.637 | 0.412 |
| 2000 | 0.031 | 0.640 | 0.421 |
| 2001 | 0.019 | 0.640 | 0.430 |
| 2002 | 0.007 | 0.657 | 0.428 |
| 2003 | -0.092 | 0.662 | 0.435 |
| 2004 | | 0.669 | 0.444 |

Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

Figure B: Evolution of the labour intensity, formal employment, 1992-2003



Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

Table H: Indexed employment indicators and ESI, 1992-2003

| Year | Productivity non formal worker | Employment ratio | Ratio of formal to total employment | ESI |
|-------------|---------------------------------------|-------------------------|--|--------------|
| 1992 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1993 | 1.037 | 1.004 | 0.984 | 1.008 |
| 1994 | 0.967 | 1.004 | 0.986 | 0.986 |
| 1995 | 0.995 | 1.005 | 0.987 | 0.996 |
| 1996 | 1.037 | 0.996 | 0.995 | 1.009 |
| 1997 | 1.019 | 0.986 | 0.992 | 0.999 |
| 1998 | 0.967 | 0.973 | 0.987 | 0.976 |
| 1999 | 0.965 | 0.966 | 0.968 | 0.966 |
| 2000 | 0.995 | 0.967 | 0.991 | 0.984 |
| 2001 | 1.014 | 0.969 | 1.012 | 0.998 |
| 2002 | 1.021 | 0.971 | 1.008 | 1.000 |
| 2003 | 0.927 | 0.965 | 1.025 | 0.972 |

Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

Table I: Evolution of gender inequality gap index and related indexed indicators, 1992-2004

| | Income | Employment ratio | Ratio of formal to total employment | Average |
|-------------|---------------|-------------------------|--|----------------|
| 1992 | 1 | 1 | 1 | <i>1</i> |
| 1993 | 0.962 | 1.004 | 0.997 | <i>0.988</i> |
| 1994 | 0.994 | 1.005 | 1.006 | <i>1.001</i> |
| 1995 | 1.020 | 1.005 | 1.014 | <i>1.013</i> |
| 1996 | 1.087 | 0.994 | 1.084 | <i>1.055</i> |
| 1997 | 1.077 | 0.988 | 1.071 | <i>1.045</i> |
| 1998 | 1.107 | 0.979 | 1.112 | <i>1.066</i> |
| 1999 | 1.130 | 0.980 | 1.101 | <i>1.071</i> |
| 2000 | 1.140 | 0.980 | 1.104 | <i>1.075</i> |
| 2001 | 1.151 | 0.979 | 1.106 | <i>1.078</i> |
| 2002 | 1.162 | 0.981 | 1.110 | <i>1.084</i> |
| 2003 | 1.149 | 0.977 | 1.115 | <i>1.080</i> |
| 2004 | 1.161 | 0.974 | 1.088 | <i>1.074</i> |

Source: Author's calculations, based on IBGE, Diretoria de Pesquisas, Coordenação de Contas Nacionais and PNAD.

Bibliography

- Abramo, L. 2004. *Desigualdade e discriminação de gênero e raça no mercado de trabalho brasileiro* (Brasília, ILO).
- Abramo, L.; Valenzuela, M.E. 2006. "Inserción laboral y brechas de equidad de género en América Latina", in: *Trabajo decente y equidad de género en América Latina*, L. Abramo, ed., (Lima, ILO).
- Berg, J.; Ernst, C.; Auer, P. 2006. *Meeting the employment challenge: Argentina, Brazil and Mexico in the global economy* (Boulder, CO, Lynne Rienner).
- Bonelli, R. 2002. *Labour productivity in Brazil during the 1990s*, IPEA, Discussion Paper 906 (Rio de Janeiro).
- Bourguignon, F. 2005. *Development strategies for more and better jobs*. Presentation at the conference, Help Wanted: More and Better jobs in a Globalized Economy, organized by the Carnegie Endowment for International Peace, April 14, Washington, DC.
- Carneiro, F.G. 2003. *A poverty profile and functional aspects of Brazilian labour markets*, ECLAC, LC/BRS/R.134 (Brasília).
- Cimoli, M.; Primi, A.; Pugno, M. 2006. A low-growth model: Informality as a structural constraint, *ECLAC Review* 88 (Santiago), April.
- Galvez, T. 2006. "Discriminación de género en el mercado laboral de América Latina: La brecha de ingresos 2001", in: *Trabajo decente y equidad de género en América Latina*, L. Abramo, ed. (Lima, ILO).
- Ghose, A.; Ernst, C.; Majid, N. 2008. *The global employment challenge* (Geneva, ILO).
- Grimshaw, D.; Miozzo, M. 2003. *Minimum wages in Latin America: identifying the employment and pay equity effects*, Declaration WP 12 (Geneva, ILO).
- Hussmanns, R. 2004, *Measuring the informal economy: From employment in the informal sector to informal employment*, WP 53, Integration (Geneva, ILO).
- IDB, 2003. *Good jobs wanted. Labor Markets in Latin America, 2004 Report* (Washington, DC).
- ILO, 2001 and 2006. *Panorama Laboral* (Lima).
- ILO, 2005: *Key Indicators of the Labour Market*, 4th Edition (Geneva).
- ILO, 2006: *Global Employment Trends Model, 2006* (Geneva).
- IPEA, 2006. *Brasil: o estado de uma nação*, Brasília.
- Kakwani, N.; Son, H.H. 2006. *A note on measuring unemployment*, WP 28, September (Brasília, UNDP, International Poverty Centre).
- Kakwani, N.; Neri, M.; Son, H.H. 2006. *Linkages between pro-poor growth, social programmes and labour market: The recent Brazilian experience*. WP 26, August (Brasília, UNDP, International Poverty Centre).
- OECD, 2007. *OECD Employment Outlook* (Paris).
- Perry, G.E.; Maloney, W.F.; Arias, O.S.; Fajnzylber, P.; Mason, A.D.; Saavedra-Chanduvi, J. 2007. "Informality: Exit and exclusion", *World Bank Latin American and Caribbean Studies* (Washington, DC, World Bank).
- Tokman, E.V. (2001). *De la informalidad a la modernidad* (Santiago, ILO).
- World Bank/IPEA, 2002. *Brazil Jobs Report*, vols. 1 and 2, Report No. 24408 (Brasília).

DATA

CELADE (data accessible via: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>)

DIEESE: online database: www.dieese.org.br

EUROSTAT: <http://epp.eurostat.ec.europa.eu>

IBGE online database: www.ibge.gov.br. (including demographic census and limited information on PNAD and PME)

PME

PNAD

ECONOMIC AND LABOUR MARKET PAPERS

- 2007/1 World and regional trends in labour force participation: Methodologies and key results, by Steven Kapsos
- 2007/2 Central Banks, Inflation Targeting and Employment Creation, by Gerald Epstein
- 2007/3 In search of optimal labour market institutions, by Peter Auer
- 2007/4 Why labour market regulation may pay off: Worker motivation, co-ordination and productivity growth, by Servaas Storm and C.W.M. Naastepad
- 2007/5 The Employer of Last Resort Program: Could it work for developing countries? by L. Randall Wray
- 2007/6 The Doing Business indicators: Measurement issues and political implications, by Janine Berg and Sandrine Cazes
- 2007/7 Bancos Centrales, Régimen de Meta de Inflación y Creación de Empleo, by Gerald Epstein
- 2007/8 Los Indicadores de Doing Business: Problemas de medición y sus implicaciones en materia de políticas
- 2007/9 Les Indicateurs Doing Business : Limites méthodologiques et conséquences politiques
- 2007/10 Implications of economic changes for job creation in Brazil's labour market, by Christoph Ernst
- 2007/11 Offshoring and the labour market: What are the issues?, by N. Bottini, C. Ernst, M. Luebker
- 2007/12 Labour market security: Combining flexibility with security for decent work, by Peter Auer
- 2008/1 Labour Market Regulation and Economic Performance: A critical review of arguments and some plausible lessons for India, by P. Jha and S. Golder
- 2008/2 La sécurité du marché du travail: comment conjuguer flexibilité et sécurité pour l'emploi décent, de P. Auer (French version of paper 2007/12)
- 2008/3 Seguridad de los mercados laborales: combinando flexibilidad y seguridad para el trabajo decente, de P. Auer (Spanish version of paper 2007/12)