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**Crisis and Recovery in Argentina: Labor market,  
poverty, inequality and pro-poor growth dynamics**

**Melanie Khamis**

**November 2005**



# **Crisis and Recovery in Argentina: Labor market, poverty, inequality and pro-poor growth dynamics<sup>†</sup>**

Melanie Khamis<sup>\*</sup>

November 14, 2005

**Abstract:** This paper explores the labor market, poverty, inequality and pro-poor growth dynamics in the recent economic crisis and recovery in Argentina. In the labor market it is possible to see the diverging experience of the economic crisis and recovery. For instance, the unemployed were more likely to find employment in the informal sector than in the formal sector. In terms of economic sectors it seems that certain labor-intensive, dynamic, low-skilled sectors such as manufacturing, other services, construction and retail contributed most to the movement between the different labor force states of employment, unemployment and inactivity.

Policy responses in the labor market to poverty and inequality increases from the economic crisis were implemented through government transfers, in particular the workfare program *Plan Jefes y Jefas*. The pro-poor features of the early economic recovery period were mainly accounted for by these government transfers. However, at later stages of recovery income increases of the poor are less attributed to government transfers and more due to the pro-poor pattern of growth itself.

**Keywords:** Economic crisis and recovery; poverty; informal labor market; workfare programs; Argentina

**JEL classifications:** I30, I38, J40, O49

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## 1. Introduction

After a prolonged recession Argentina experienced a severe economic crisis in 2001-2002. A slump with high levels of unemployment and increases in poverty was the consequence. Inequality, which had increased over the decade of the nineties, was exacerbated through the economic crisis. However, in 2003 and 2004 the economy slowly recovered and jobs were created.

This paper attempts to analyze the nature of the economic slump and recovery of Argentina through the lens of labor market transitions, poverty, inequality and pro-poor growth dynamics. The purpose is to understand whether the economic growth, as the Argentine economic recovery is the main interest, has been pro-poor or not and to provide a link to the labor market. Analysis of micro-level data will give an insight into the sectoral dynamics of the labor market, poverty, income changes and the link of poverty and the labor market. In addition to this the paper tries to understand the role of government policy, in terms of government transfers, which were mainly given through the workfare Plan Jefes y Jefas, in the recovery process.<sup>1</sup>

In the next section a description of the household survey data for Argentina is provided. Thereafter, in section 3, a brief literature summary of existing labor market studies for Argentina follows and the results of the analysis of the labor market dynamics for Argentina for 2001 to 2003. In part 4 growth performance, poverty, inequality and the labor market for this period are discussed. Poverty, inequality and pro-poor growth rates are described. Subsequently, several poverty decompositions, an Oaxaca-Blinder decomposition of income and growth-incidence curves are estimated to complete the picture of analysis for the crisis and recovery periods. In the last sections the main conclusions are highlighted.

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<sup>1</sup> In this paper I will use Plan Jefes or Jefes Program interchangeably. A short description of the program is given in footnote 2.

## **2. Data description**

In this paper micro-level household data are employed to gain some insights into the labor market dynamics, poverty, income changes and pro-poor growth features of the Argentine economy during the crisis 2001-02, the early recovery period 2002-03 and the later recovery period 2003-04.

The official Argentine household survey, the EPH, is used for the period until May 2003. From mid-2003 onwards the Argentine national statistics office changed the frequency of data collection to four times a year and created a new version of the EPH, the EPH-continua (EPH-C from now onwards). Changes to the household and individual questionnaires of the EPH-C were implemented. Hence, for the period from 2001 to 2003 the old EPH surveys corresponding to the May wave were used in this paper and for the later period of 2003 and 2004 the analysis is based on the second semester EPH-C surveys.

Overall, most studies on the Argentine economy, especially the labor market, refer to the EPH and EPH-C data sets as these are the most extensive official micro-data available for Argentina. It seems only appropriate to use this data set for the empirical study. Clearly, due to some of the limitations of these data, the comparability of surveys EPH and EPH-C and also the representation of only urban population, leaving out rural areas, the results in this paper have to be viewed in this light.

## **3. The labor market in Argentina**

In order to understand the recent trends in the labor market in Argentina, changes in the labor market in sectors and labor market participation, in other words the labor market dynamics, over the recent slump and recovery are looked at over the period 2001 to 2003. In the next section, a short summary of the previous literature on job

creation and the labor market literature for Argentina in general portrays the context of this analysis.

### **3.1 The previous labor market literature**

For this paper several recent research papers on Argentina are highly relevant: literature on job creation and destruction, the labor market, workfare program evaluation, the informal sector, and also the crisis response of the labor market.

Covering the 1990s, a study on job creation and destruction in industrial sectors uses employment changes over one year to determine the trends (Galiani and Gerchunoff, 2004). From 1992 to 1995 the manufacturing sector shed employment while all the other sectors have employment growth with exception for the year 1994. During the 1990s they find that job creation was high alongside also very high job destruction in Argentina.

Contrary to Galiani and Gerchunoff (2004), Cavalcanti (2003) finds that job creation was relatively low during the growth years from 1992 to 1998. A lack of labor market dynamism seemed to persist, which was not related to slow growth or high non-wage labor costs. This low level of job creation also fuelled the informal market, where discouraged workers settled for low paying jobs. He finds that jobs were mostly created in large and medium size enterprises in the 1990s. Due to high costs of entry and exit smaller firms had a minor role in job creation.

Another study on job creation and destruction for Argentina by Pessino and Andres (2004) investigates through a difference-in-difference estimation strategy the impact of trade liberalization and the devaluation on job creation and destruction in sectors over the period 1990 to 2003. For the mid-1990s they find that globalization, in other words trade liberalization, had an impact on job destruction, in particular the service sector and the formal sector, and no significant impact on job creation. For the period

of the devaluation (the economic crisis), 2001 to 2002, they conclude that the effect was very heterogeneous in its impact across groups. Job creation occurred in construction and destruction in services and government sector. In the short-run though services and medium and small firms appeared to benefit.

In addition to job creation and destruction Bosch and Maloney (2005) investigate the average mobility, duration and flows between different labor market states, unemployment, formal and informal sector work and outside the labor force status for Argentina for 1993 to 2001. In comparison with Mexico and Brazil, Argentina seems to exhibit very low labor market mobility.

In the recent literature on Argentina and the Argentine economic crisis of 2001 several authors have focused on the role of the labor market in the crisis and the recovery (McKenzie, 2003; Kritz, 2002). McKenzie (2003) finds that a large fall in real wages across all sectors to be the main impact of the crisis alongside weak labor demand, not-increasing labor supply and a fall in participation in self-employment.

In his labor market analysis Kritz (2002) suggests that the job creation has become more procyclical at the end of the 1990s than the earlier 1990s. Also he finds that mainly private sector jobs and formal jobs were destroyed in the aftermath of the crisis. Jobs newly created were mostly in the informal sector and in the intermittent worker sector.

As a response to the recent crisis, the workfare program Plan Jefes y Jefas was introduced by the Argentine government, which was intended as an immediate response to the crisis.<sup>2</sup> Galasso and Ravallion (2003) evaluate the impact of the program with administrative data and the Argentine household surveys and conclude

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<sup>2</sup> The workfare program, Plan Jefes y Jefas, was implemented in April 2002. The program is targeted at unemployed low-skilled workers, who are head of household. Participants receive a monthly benefit of \$150 (Argentine Peso) per month by the government. The work requirement of the program is to do 20 hours of basic community work, training activities, school attendance or employment in a private company with a wage subsidy for a limited time period.



that although partial problems with coverage the program compensated many losers from the crisis and prevented extreme poverty. Also Ronconi et al. (2004) look at the poverty and employment impact of Argentine workfare programs and conclude that the programs were pro-poor and helped the participants increase income and reduce poverty. They concluded that the programs aided participants to join the labor market and find a job.

Given the diversity of studies on the Argentine labor market, this paper will add to this literature with the analysis of the particular period of the economic crisis and economic recovery in terms of labor market dynamics, poverty, inequality, the role of government transfers and pro-poor growth from 2001 to 2004.

### **3.2 Labor market dynamics during the Argentine economic crisis and recovery**

The labor market dynamics surrounding the crisis, early recovery and later recovery period can be analyzed by looking at the shares and distribution of employment, unemployment, inactivity, formal and informal sector and industrial sector within the different time periods (Bertranou and Khamis, 2005). The results from this analysis are striking in terms of different experience of economic crisis and recovery. For example, jobs in the formal and informal segment of the labor market were initially both destroyed, but the informal sector played a more crucial part in the early recovery period than the formal sector. Certain labor-intensive, low-skilled economic sectors, such as retail, construction and manufacturing, contributed to job creation more than other sectors after the crisis. This could be an indication of the changing nature of the labor market. Following Herrera and Shady (2003) in the following I have exploited the rotating panel structure of the EPH and analyzed a panel of

individuals for the years 2001 to 2003.<sup>3</sup> The later recovery period of 2003 to 2004 was not looked at as the new EPH-C did not allow the creation of panel data and to follow individuals for more than one period.

In terms of employment one can observe that 78.03 percent that were employed in 2001 remained employed in 2002 while the rest of the one's employed in 2001 moved into unemployment and inactivity in relatively equal shares (11.77 percent and 10.21 percent respectively) (Table 3.1). From the unemployed individuals in the panel in 2001 about 38.73 percent remained unemployed in 2002 with movements into employment and inactivity close to 30 percent. If an individual was categorized as inactive for 2001, it was very likely that they remained in inactivity (90.33 percent) in 2002.

The picture changes slightly for the years 2002 to 2003, the early recovery period. If an individual was employed in 2002, the crisis year, it was likely that the person remained employed (85.34 percent) the following year, 2003. In addition to this it seems that the job finding rate of individuals seemed to have picked up as one can see that about 46.82 percent of the people unemployed in 2002 were in employment in 2003. Contrary to this improved dynamics for the unemployed about 90 percent of the inactive individuals in 2002 remained inactive in 2003.

Transitions from employment, unemployment and inactivity into a workfare plan were generally higher for the transition period 2002 to 2003 than for 2001 to 2002, the immediate crisis period. 6.34 percent of those unemployed individuals in 2002 reported participation in a workfare plan in 2003 while 3.15 percent of the employed and 1.55 percent of the inactive from 2002 participated in a workfare program.

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<sup>3</sup> 39.4 percent of individuals in the 2001 EPH wave were present in the 2002 EPH wave. 33.4 percent of individuals in the 2002 EPH wave were present in the 2003 EPH wave. The May waves of the survey were employed. Due to fewer observations some of the subcategories in the transitions analysis could represent relatively small actual numbers of individuals and so the analysis should be viewed in that light.

Corresponding numbers for 2001 to 2002 are much smaller, pointing at the importance of the transitions into workfare programs and the early economic recovery (Table 3.2).

In terms of labor market dynamics between formal and informal sector and labor force status, it seems that informally employed workers were more likely to become unemployed or inactive than formally employed workers in both transition periods. On the reverse picture unemployed and inactive individuals appeared to find more informal jobs than formal jobs in 2001-2002 and 2002-2003 (Table 3.3).

Employers, followed by employees and then self-employed, were most likely to retain their jobs in the crisis period and the early recovery period whereas the unpaid were the least likely. Movements from unemployment and inactivity into employments usually meant a move into employee or self-employed status (Table 3.4).

Overall, in the period, 2002-2003, more unemployed found employment in the informal sector and moved from the unemployment status to employment status as employees than in 2001-2002. Hence, the onset of economic recovery was reflected in the labor market. In terms of industrial sectors four sectors seemed to be the most dynamic in terms of employment, unemployment and inactivity movements: manufacturing, other services, construction and the trade/retail, restaurants and hotels sectors (Table 3.5).

#### **4. Growth, poverty and the labor market**

From the earlier analysis, the negative growth rates of the economic crisis and the positive growth rates of the recovery period were largely reflected in the general trends in the labor market: increases in unemployment and inactivity alongside decreases in employment during the crisis and the reverse picture during the recovery

period. It seemed that the labor market was more response to the recovery period than to the crisis. This points to a changing nature of the labor market.

In general the connection between the labor market and poverty would be through the channel of employment and income. The income of the poor could be labor earnings and/or through government transfers. In the Argentine case, for example, not only individual income of the different labor market sectors was important, but also income from transfers played a role. Especially in the early recovery period after 2002, transfers by the government through the Jefes Program could account for part of the individual income of the poor.

An analysis of poverty, inequality and the labor market seems necessary to understand the performance of the labor market during crisis and recovery and the role of government transfers, like the workfare programs, further. For this reason a short description of the Argentine poverty, inequality and pro-poor growth data, accounting for government transfers, is provided in the following section. Thereafter poverty changes are analyzed and decomposed according to growth and inequality components and sectors, which here could be economic sectors or labor force/labor market status. In addition to this I also analyze changes in mean income through an Oaxaca-Blinder type decomposition.

Finally, I proceed to look at income changes and the distribution of those changes during the Argentine crisis and recovery. In particular it is interesting to see whether the poor disproportionately shared the Argentine growth experience or not. In other words, whether the economic growth, as the Argentine economic recovery is the main interest here, was pro-poor or not. The role of government policy, for example transfers through the Plan Jefes program, is taken into account in this analysis.

#### **4.1 Poverty, inequality and pro-poor growth performance in Argentina**

This section intends to describe some of the trends in the poverty, inequality and pro-poor growth performance in Argentina, especially in the period of interest, 2001 to 2004.

As one can see in Table 4.1 poverty and extreme poverty highly increased during and after the crisis in 2001 to 2002. The official poverty rate shows that over 53 percent of the population were poor in 2002, while in 2001, 35.9 percent were poor. This sharp increase is also apparent on the household level, where the percent of poor households rose from 26.2 percent in May 2001 to 41.4 percent in May 2002. In addition to this, extreme poverty more than doubled between 2001 and 2002. In 2001 8.3 percent of households were in extreme poverty while in 2002 18 percent of households were counted as indigent. The individual indigence rate exhibits a similar pattern with 11.6 percent in 2001 and 24.8 percent in 2002. In the period 2002 to 2003, although economic recovery had started slowly, poverty rates and indigence rates still show small increases. Contrary to this, official Argentine poverty and indigence rates fell between the first semester of 2003 and the second semester 2004.

These poverty and indigence rates are based on household income, which due to the economic crisis might have been supplemented by government transfers, for example the Jefes Program. This would bias these indicators downwards. In other words, actual poverty and indigence might be higher without the income from this government policy. For this reason, in Table 4.1 the poverty and indigence rates, unadjusted and adjusted for Jefes Program, are presented. It is possible to see from these numbers that the poverty and indigence rates are overall slightly higher when accounting for Jefes Program. Still, the trend of a decrease in poverty and indigence remains for the period

of October 2002 to the second semester of 2004. Not only increases on poverty occurred during the crisis period, but also impacts on inequality can be observed.

Inequality, across all different measurements of inequality, increased over the decade of the 1990s in Argentina (CEDLAS, 2004). Once a very-low-inequality country by Latin-American standards, Argentina experienced disequalizing changes to which many different factors contributed (Gasparini, Marchionni and Sosa Escudero, 2002; De Ferranti et al., 2004). In a recent study on socio-economic indicators for Argentina it was found that inequality measures, which demonstrated a coherent increase along all the measures for the nineties, disagreed over the inequality behavior over the period 2001 to 2003 (CEDLAS, 2004). Indices that attach a higher weight at the bottom of the income distribution exhibit a fall in inequality (Atkinson with parameters 1 and 2, and entropy with parameter 0) since relative income of the very poor increased while others showed an increase. In order to understand the income inequality patterns a stricter income, the equivalized household labor monetary income instead, was used. Inequality patterns were similar to the previous inequality measures with exception of the period 2001 to 2003, where all indicators using labor monetary income showed an increase in inequality between 2001 and 2003 (CEDLAS, 2004). With the focus on labor income, capital income and transfers are ignored. In particular transfers from Jefes Program are excluded from the statistics and therefore incomes in the first deciles go down between 2001 and 2003.

In order to understand the impact of the crisis and recovery for 2001 to 2004, not only poverty and inequality patterns need to be looked at. It is interesting to see how the poor shared the recession and growth.

The rate of pro-poor growth, which has recently dominated the development research literature, could provide us with some insights into the nature of economic growth and

its links to the distribution of income to the poor (Ravallion, 2004; Ravallion and Chen, 2004; Klasen, 2004).<sup>4</sup> In general pro-poor growth implies that the distribution of relative incomes is changed through the growth process in order to benefit or favor the poor. Pro-poor growth can have many possible definitions. For example, growth with a high poverty elasticity, growth that reduces the poverty headcount index, growth with declining inequality, incomes of the poor growing more than those of the rich, or share of income accruing to the poor increases, are several of the possible options.<sup>5</sup> Out of recent research though, two main definitions for measuring pro-poor growth have emerged. Both approaches require the poor to be identified by specifying a poverty line.<sup>6</sup>

The first definition is the relative definition of pro-poor growth. It compares the income change of the poor with the income change of the rest of the population that is not poor. In this relative measure growth is pro-poor if the poor people's income grows faster than the income of the entire population. This implies a favorable distributional change for the poor alongside economic growth. In other words, income inequality falls (Klasen, 2004).

The second one is known as the absolute definition of pro-poor growth. This definition focuses only on the incomes of the poor. Growth is considered pro-poor if on average the incomes of the poor are rising. In other words, the poor benefit in absolute terms, indicated by falling poverty measure (Ravallion and Chen, 2003; Kraay, 2004). In this paper the absolute definition of pro-poor growth is used to understand the nature of the Argentine slump and recovery.

Pro-poor growth rates are calculated for the period 2001-02, 2002-03 and 2003-04 (Table 4.2). The poor experienced a very strong decline (-36.70 percent) in their

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<sup>4</sup> For a short summary see DFID (2004).

<sup>5</sup> The general and specific definitions of pro-poor growth are taken from the World Bank website.

<sup>6</sup> In the case of Argentina the national poverty line is used.

household income in 2001-02. However, the poor deciles of the income distribution experienced on average a 7.27 percent growth in income between 2002 and 2003. In the most recent period, 2003-2004, pro-poor growth was even higher with 15.40. These numbers though are, as previously the poverty and inequality numbers, biased through the transfer component in the income measures used. Hence, pro-poor growth rates were calculated for income without government transfers.

Clearly, the number for 2001 to 2002 did not change significantly but was slightly higher than before (-37.27 percent). For 2002 to 2003 though, as opposed to the previously positive rate, the pro-poor growth rate is now negative at -10.32. Hence, the pro-poor growth in this period can be entirely accounted for through the government transfers such as the Jefes Program. This picture changes for the latest period 2003-2004. Without government transfers, pro-poor growth is found to be 15.78 percent. This is relatively similar to the pro-poor growth estimate with transfers for 2003-2004. Overall, in the early recovery period part of the growth seems to be due to transfers, but in the later recovery period transfers do not seem to be the main contributor to growth in the overall income in the lower percentiles of the income distribution anymore. For 2003 to 2004 it seems that the pro-poor pattern of growth itself, for example through job creation in labor-intensive, low-skilled sectors of the economy, explains the pro-poor growth rates instead of government action through transfers.

#### **4.2 Growth-redistribution and sectoral decompositions of poverty**

To understand the above described trends and changes in poverty more in detail, it is possible to calculate decompositions of those changes. Following Ravallion and Datt (1991) and Ravallion and Huppi (1991) Argentine growth-redistribution



decomposition of a poverty change and sectoral decompositions of poverty are calculated.

In Table 4.3 growth-redistribution decompositions are presented for poverty and indigence changes for the different time periods. Looking at the general trends one can observe that in both poverty measures, extreme and moderate, a huge increase in poverty occurred for the time period May 2001 to May 2002 (the crisis period).

Clearly, when this poverty increase is decomposed, the growth component, in other words the sharp drop in growth, seems to account for the most of the increase in poverty. The redistribution component does play some role, but is not the major contributor to the poverty change. Looking at indigence the growth and the redistribution component seem to be equally important during the crisis.

This picture changes dramatically for the onset of the recovery, May 2002 to May 2003. Still, a small increase in poverty is observed, which is mostly accounted for by the growth component. In the case of indigence the redistribution component does have a dampening effect on the poverty increase. This could be due to the emergency transfer programs such as the Jefes Program having an impact on this part of the population. For later recovery period, 2003 to 2004, a poverty decrease is found for the sample using the poverty line as well as the indigence line. Both poverty and indigence rates were reduced by a growth effect and a distribution effect, which was nearly twice as large as the growth effect.

Overall, it is noticeable that not only the growth component is important in explaining the poverty and indigence changes for Argentina during 2001-2004, but also a considerable element is due to redistribution.

These poverty changes can also be looked at from the sectoral perspective, which would supplement the sectoral labor market analysis. Here, the link to poverty changes in sectors is explicitly discussed.

Different industrial sectors, formal and informal workers, labor force status (employed, unemployed and inactive) and labor market status (employer, self-employed, employee and unpaid) are looked at in this analysis (Table 4.5 and Table 4.6). In order to understand the magnitude of poverty in these sectors and their contribution to poverty changes, I also calculated the poverty shares of the total poor in sectors (Table 4.4). From these calculations it is possible to see that the many working poor were in some of the industrial sectors, for example retail, construction and manufacturing. The 'other services' sector also employed a large share of the poor during 2001-2004. Some other sectors, for instance education and public administration, increased the percentage of poor over time. The informal sector had a higher share of poor people than the formal sector during 2001 to 2003. However, during the period 2003 to 2004 the formal and informal sector had relatively equal shares of the poor. This might be due to the changed household survey definitions from EPH to EPH-C. In terms of labor force status the poor were mainly in the inactive group of the population. Surprisingly, many poor were also in the labor force in either status. Employed poor represented a bigger share of the poor than the unemployed. The numbers change quite a bit for the recent period and this is possibly again due to the difference between the two surveys, EPH and EPH-C. Looking at the labor market status the poor in this categorization were mainly employees and to a lesser extent self-employed. Employers and the unpaid did not have high shares of the total poor.

After these general characteristics of the poor, Table 4.5 displays growth-redistribution decompositions for poverty changes in the particular sectors. In general terms poverty increases occurred across all sectors from May 2001 to May 2002. Certain sectors though experienced a higher effect from the drop in economic growth, for instance primary, construction and transport, the informal, the unemployed and the inactive. In May 2002 to May 2003 several sectors, manufacturing, construction and transport and the self-employed, experienced a reduction in poverty. Growth and redistribution components played a differing role in these poverty reductions within sectors. The growth effect, which sometimes was outweighed by the redistribution effect increase, had a poverty-reducing effect in primary, construction, transport and other services sector and for the unemployed and self-employed. For the overall period from May 2001 and May 2003 a general poverty increase is prevalent, in which the growth component has the largest contribution. For 2003 and 2004 an overall poverty reduction across all sectors occurred.<sup>7</sup> Here, the growth and redistribution components also had diverse impacts in these poverty reductions. In some sectors, for example manufacturing, trade and transport, growth seemed to have contributed largely to the poverty change.<sup>8</sup> However, also the redistribution component has had an immense impact on poverty reduction in certain sectors, for instance the primary sector. For 2003 to 2004 I also find that an overall poverty reduction for the entire labor force, employed and unemployed, due to growth, but also redistribution. Even the inactive population experienced poverty reduction due to growth and redistribution. The informal workers and self-employed experienced a decline in poverty partly contributed by a large growth component.

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<sup>7</sup> Except the unpaid, who according to 4.4, did not represent a large share of the poor.

<sup>8</sup> 'Trade' is the short name used here for the 'Trade/retail, restaurants and hotel' sector.

In order to gain further insights additional sectoral decompositions of poverty changes are presented in Table 4.6. Previously, the change of poverty in sector was decomposed into a growth-inequality component while now the contribution of the sector to total poverty changes is measured. Poverty changes are decomposed into intra-sectoral, inter-sectoral (population-shift) and interaction effects based on sectors or status. Obviously, the general poverty trends, a rise in poverty for the periods 2001-2002 and 2002-2003, and a decline in poverty for 2003-2004, have remained as general tendencies. In Table 4.6 the first column under each year provides the population share of each sector in the first period. The second column presents the contribution of each sector to the poverty change, the total intra-sectoral effect, the population-shift effect and the interaction effect.

For May 2001 to May 2002 manufacturing, construction, trade, transport and other services seemed to have contributed mostly to the poverty increase. This could point at the potential of these sectors to adjust relatively quickly to changes in the economic conditions. Inter-sectoral movements had a decreasing effect on poverty. Also the small interaction effect dampened the increase in poverty, suggesting that some people moved into sectors where poverty was not as high. For the formal and informal sector contribution to poverty change, it is apparent that the informal sector contributed to a higher degree to the poverty increase. This is offset by inter-sectoral shifts and a dampening interaction effect. The employed, unemployed and inactive segments all shared part of the poverty increase. The employed and self-employed were the main contributors to the poverty increase when looking at the labor market status category. Even the inter-sectoral shifts and the interaction effect accounted for a poverty increase in the labor force status and labor market status category.

In the following period, May 2002 to May 2003, the industrial sectors experienced diverging patterns: manufacturing, construction and transport actually reduced overall poverty when one looks at the contribution. Public administration, education and other services accounted for most of the poverty increases.

The formal and informal workers both contributed to the poverty increase as well as the employed, unemployed and inactive. In particular employees accounted for a huge contribution. The self-employed were the one of the categories which differed to May 2001 from May 2002. The self-employed actually had a negative contribution to the poverty increase. In other words, it reduced poverty, but in overall terms still the poverty rise prevailed. For the entire period, 2001 to 2003, poverty attributed to all sectors to different degrees increased.

In the recent recovery period, 2003 to 2004, overall poverty was declining. For the 2003 and 2004 the industrial sectors showed all a contribution to poverty decrease, except the finance sector. Informal workers still contributed a big share to poverty reduction. The formal sector, having a higher population share, seemed to contribute to a higher degree to poverty reduction than previously. In addition to that employees also experienced a huge part of this poverty decrease.

In general the sectoral decomposition of poverty changes results in several mixed messages. Certain industrial sectors, such as manufacturing, construction, and transport, experience very diverging contributions from one year to the next, with increasing poverty in the slump and decreasing poverty in the recovery. In other words, these sectors seem quite dynamic. Informal workers and employees play a role in both the slump and recovery period of the poverty changes. However, the interaction effect, the effect between intra-sectoral and population shift, that indicates whether people moved into sectors where poverty was falling was ambiguous. On one

hand, for instance May 2001 to May 2002, it had a dampening effect on poverty increases while on the other hand (May 2002 to May 2003) it did not. In the case of poverty reduction the interaction effect was equally ambiguous. For 2003 to 2004 the interaction effect had a very small dampening effect.<sup>9</sup>

In the following section I will complete the analysis with an Oaxaca-Blinder decomposition of the mean income changes and a discussion of growth incidence curves, which will give an insight into the income changes of the entire distribution for the different time periods and different income sources.

### 4.3 Decomposition of income changes

In order to complement the analysis of labor market dynamics and poverty decompositions and to provide individual analysis of the link between poverty and labor market characteristics Bertranou and Khamis (2005) estimated probit regressions in order to understand the characteristics, which determine the probability of an individual to be in poverty. In this paper an Oaxaca-Blinder decomposition is performed to understand the mean income changes and to see what extent covariates and price effects played a role (Blinder, 1973). In a very similar fashion to Klasen and Wolterman (2005) the following regression is estimated for period  $t$  and  $t'$ :

$$\Delta \bar{y} = \bar{y}_{t'} - \bar{y}_t = (\alpha_{t'} - \alpha_t) + \beta_t (\bar{x}_{t'} - \bar{x}_t) + \bar{x}_{t'} (\beta_{t'} - \beta_t)$$

The mean income in this equation is the sum of several effects, the shift effect resulting from the difference in regression constants, the endowment effect and the price effect.<sup>10</sup>

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<sup>9</sup> In Bertranou and Khamis (2005) the interaction effect had a dampening effect when using 2<sup>nd</sup> semester 2003 and 1<sup>st</sup> semester 2004 data.

<sup>10</sup>  $t$  is period 2001 and  $t'$  is period 2003.

Table 4.7 and Table 4.8 present the results of this analysis for Argentina with certain household characteristics previously employed in the probit regression analysis of Bertranou and Khamis (2005).

From this analysis it is possible to see that the large price effect and the endowment effect are negative and hence on their own would have decreased mean income. However, as the economic recovery onset in 2002 to 2003, their overall effect is partially outweighed by a large positive shift coefficient.

#### **4.4 Growth and government transfers: Growth incidence curves**

This section analyzes the linkage to economic growth and tries to understand how lower percentiles of the income distribution shared the recent economic crisis (2001-02), the early recovery (2002-03) and the later recovery period (2003-04).

Given the interest in pro-poor growth features the growth incidence curves preferably should display growth, which would be indicated through the line lying above the horizontal axis. The pro-poor nature would be with a decreasing line from left to right, with the lower percentiles of the income distribution being on the left. Growth incidence curves for 2001-2002, 2002-2003 and 2003-2004 fully capture the time period of the recession, the onset of the recovery and the later recovery.

Different income measures, total per capita household income with and without transfers, are used in this growth incidence analysis (Figure 1 and Figure 2).<sup>11</sup> The household income measures without transfers subtract the additional income from government transfers. Transfers such as Jefes Program could have a major impact especially in the lower tail of the income distribution, where the poor are, and could lead to an underestimation of the slump or an overestimation of the recovery.

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<sup>11</sup> The left panel in Figure 1 and Figure 2 displays growth incidence curves for income with transfers while the right panel in Figure 1 and Figure 2 shows growth incidence curves for income without transfers.

In Figure 1 (left panel) growth incidence curves of total household income per capita including transfers are displayed for the 2001-2002 and 2002-2003 period. For the period of the slump, 2001-2002, is characterized by negative growth rates across the entire income distribution. For the poor though the recession is more prevalent than for the higher percentiles of the income distribution. This is apparent in the upward-sloping growth incidence curve. For the period 2002-2003 a downward-sloping growth-incidence curve with some positive growth rates in the lower percentiles and negative growth rates for the upper percentiles is the result of the calculations, using the total household income per capita. As pointed out earlier, the downward-sloping and positive growth part of the growth-incidence curve makes it possible to classify the economic growth of total household income as pro-poor growth.

In addition to this growth-incidence lines excluding transfers are drawn up for both years (Figure 1 right panel). In this direct comparison the growth-incidence curves for 2001-2002 with and without transfers coincide while the growth-incidence curves for the two income measures for 2002-2003 differ. The pro-poor component, the higher growth at the lower end of the income distribution, seems to be taken away when using the income measure without transfers. For this reason one could argue that the pro-poor growth observed during the 2002-2003 period could likely be due to government transfer programs such as the Jefes Program.<sup>12</sup> Overall, the role of transfers seems to be prevailing in the growth tendencies over the recovery period of 2002-2003.

For 2003 to 2004 one can clearly see the downward-sloping very positive growth trend for the income per capita with transfer (Figure 2 left panel). Most percentiles, except possibly the very high percentiles, experience a positive growth rate in real

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<sup>12</sup> The impact of the Plan Jefes program might be slightly overestimated through this graph. Also it is important to bear in mind that there are other transfers available outside Plan Jefes. For an impact evaluation of Plan Jefes see Galasso and Ravallion (2003) or Ronconi et al. (2004).



terms. This is clearly very pro-poor. Comparing it to the earlier period, 2002-2003, the positive growth rates are much higher than before for a bigger share of the income distribution.

Given the earlier observations that growth in 2002-2003 was partly accounted for by the transfer component of income, I compare total household income with and without transfer to see whether the nature of growth was similar. In Figure 2 (left and right panel) the results show that both income measures, with and without transfers, follow a very similar trend. They do not diverge very much. The general pro-poor trend remains and one can conclude that transfers seem to matter less in this growth experience than in the early recovery period. Compared to the previous period, where transfers seemed to drive economic growth partly, it seems that stronger growth was experienced across sectors. The pro-poor pattern of growth itself could account for these features. Possibly through a shift in the labor market towards labor-intensive sectors, where the poor are more likely to be employed, could be one explanation.

## **5. Conclusion**

This paper attempted to present and discuss the Argentine crisis and economic recovery of 2001 to 2004 through a closer look at the labor market. In the analysis of the household survey data, I discovered several important findings.

Firstly, in the labor market dynamics analysis of the different labor market states and formal and informal segments of the labor market, it was possible to see a diverging experience for crisis and recovery period. In the period, 2002-2003, more unemployed found employment in the informal sector and moved from the unemployment status to employment status as employees than in 2001-2002. Hence, the onset of economic recovery was reflected in the labor market. In terms of economic sectors it seems that certain labor-intensive, dynamic, low-skilled sectors such as manufacturing, other

services, construction and the trade/retail, restaurants and hotels contributed the movement between employment, unemployment and inactivity.

Secondly, while the sectoral decompositions of poverty gave mixed results, I found that in the decompositions of poverty changes according to growth and redistribution not only the growth component is important in explaining the poverty and indigence changes for Argentina during 2001-2004, but also a considerable element is due to redistribution. In the sectoral decompositions it was possible to see that certain sectors such as manufacturing, construction and transport were very dynamic, experiencing a very diverging contribution to poverty increases and decreases from one year to the next.

Thirdly, from the Oaxaca-Blinder analysis it is possible to see that the large price effect and the endowment effect were negative and hence on their own would have decreased mean income over the time period 2001 to 2003. However, as the economic recovery onset in 2002 to 2003, their overall effect is partially outweighed by a large positive shift coefficient.

Finally, in the poverty, inequality and pro-poor growth rates and the growth incidence analysis (and probably supported by the considerable redistribution element in the poverty decompositions) it was possible to gain some insight into the role of government policy during the crisis and in particular in the early recovery period of 2002-03 and the later recovery period 2003-04. The pro-poor features of the early economic recovery period were mainly accounted by these government transfers, where the workfare program Plan Jefes can be counted into. Contrary to this, at later stages of recovery income increases of the poor are less attributed to government transfers and more due to the pro-poor pattern of growth itself.

This result seems to tie in with the labor market analysis, which indicates a move towards certain labor-intensive sectors, where a high proportion of the poor work. In other words, in the Argentine case the labor market and its dynamics could provide an explanation for the drivers of the observed pro-poor growth.

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## Appendix 1: Tables and Figures

### Tables for section 3

Table 3.1

Labor force status transitions, 2001/02 and 2002/03 (%)						
2002						
2001	E	U	I	Total	Total Row	Total No.
E	78.03	11.77	10.21	100	34.77	3247299
U	33.24	38.73	28.03	100	6.42	599335
I	5.45	4.22	90.33	100	58.82	5493695
Total Column	32.36	9.09	58.55	100	100	
Total No.	3066712	861205	5548764			
2003						
2002	E	U	I	Total	Total Row	Total No.
E	85.34	5.47	9.19	100	32.10	1892425
U	46.82	34.40	18.78	100	8.48	499847
I	6.54	3.30	90.15	100	59.43	3503871
Total Column	35.66	6.78	57.56	100	100	
Total No.	3568513	678290	5760051			

Note: EPH data. Employment (E), Unemployment (U) and Inactivity (I).

Table 3.2

Workfare plan and labor force status, 2001/02 & 2002/03 (%)

2002				2003	
2001	Workfare Plan	2002		Workfare Plan	
E	1.28	E		3.15	
U	1.93	U		6.34	
I	0.27	I		1.55	

Note: EPH data. Employment (E), Unemployment (U), Inactivity (I).

Table 3.3

Informality/formality and labor force status, 2001/02 and 2002/03 (%)

2002					
2001	E	U	I	Total	Total No.
Formal E	88.03	7.89	4.09	100	1463598
Informal E	67.06	16.90	16.04	100	857627
2003					
2002	E	U	I	Total	Total No.
Formal E	92.32	3.16	4.53	100	825967
Informal E	77.72	8.88	13.41	100	500869
2002					
2001	Formal E	Informal E	Total		
E	68.91	31.09	100		
U	27.68	72.32	100		
I	19.22	80.78	100		
2003					
2002	Formal E	Informal E	Total		
E	65.17	34.83	100		
U	17.44	82.56	100		
I	13.54	86.46	100		

Note: EPH data. Formal Employment (Formal E), Informal Employment (Informal E)

Table 3.4

**Labor force status and labor market status, 2001/02 and 2002/03 (%)**

2002					
2001	E	U	I	Total	Total Row
EM	86.31	4.80	8.99	100	4.71
SE	71.17	15.00	13.83	100	22.39
EMP	80.20	11.26	8.54	100	71.8
UP	41.63	11.26	51.30	100	1.10
Total Column	32.36	9.09	58.55	100	100
2003					
2002	E	U	I	Total	Total Row
EM	93.08	3.16	3.76	100	3.50
SE	81.38	5.99	12.63	100	24.48
EMP	86.77	5.31	7.92	100	70.53
UP	65.08	9.52	25.40	100	1.50
Total Column	35.66	6.78	57.56	100	100
2001					
2002	E	U	I		
EM	4.26	1.53	1.29		
SE	22.84	36.81	34.56		
EMP	72.19	59.49	60.95		
UP	0.70	2.16	3.21		
2002					
2003	E	U	I		
EM	4.25	1.40	1.58		
SE	22.96	31.57	27.15		
EMP	71.93	66.12	68.47		
UP	0.87	0.92	2.80		

Note: EPH data. Employer (EM), Self-Employed (SE), Employee (EMP), Unpaid (UP)

Table 3.5

**Industrial Sector and labor force status, 2001/02 and 2002/03 (%)**

	<b>2002</b>			<b>Total</b>	<b>Total Row</b>
	<b>E</b>	<b>U</b>	<b>I</b>		
<b>2001</b>					
Primary	76.10	10.65	13.25	100	1.28
Manufacturing	72.28	14.28	13.44	100	14.64
Construction	50.39	40.00	9.61	100	9.44
Retail, Rest. and Hotel	68.18	14.60	17.22	100	22.85
Utilities and Transp.	76.91	16.32	6.77	100	8.82
Finance and Prop.	73.39	19.33	7.28	100	9.55
Public Adm. and Defense	87.49	5.81	6.70	100	7.57
Education and Health	86.45	5.88	7.67	100	11.70
Other Services	66.73	13.76	19.51	100	14.15
<b>Total Column</b>	<b>32.36</b>	<b>9.09</b>	<b>58.55</b>	<b>100</b>	<b>100</b>
<b>2003</b>					
<b>2002</b>	<b>E</b>	<b>U</b>	<b>I</b>	<b>Total</b>	<b>Total Row</b>
Primary	84.54	7.79	7.67	100	1.03
Manufacturing	75.17	14.37	10.46	100	13.09
Construction	66.35	25.21	8.44	100	9.57
Retail, Rest. and Hotel	76.44	10.98	12.58	100	23.18
Utilities and Transp.	84.95	8.80	6.25	100	7.51
Finance and Prop.	76.15	11.63	12.22	100	9.59
Public Adm. and Defense	90.48	3.07	6.45	100	7.77
Education and Health	88.41	3.84	7.75	100	13.64
Other Services	74.14	10.37	15.49	100	14.63
<b>Total Column</b>	<b>35.66</b>	<b>6.78</b>	<b>57.56</b>	<b>100</b>	<b>100</b>
<b>2001</b>					
<b>2002</b>	<b>E</b>	<b>U</b>	<b>I</b>		
Primary	1.02	1.13	1.18		
Manufacturing	14.75	13.83	15.68		
Construction	7.34	21.72	4.62		
Retail, Rest. and Hotel	21.60	22.57	32.27		
Utilities and Transp.	9.27	7.76	4.38		
Finance and Prop.	9.65	8.43	5.47		
Public Adm. and Defense	9.30	4.06	3.71		
Education and Health	14.53	5.76	8.92		
Other Services	12.54	14.73	23.78		
<b>2002</b>					
<b>2003</b>	<b>E</b>	<b>U</b>	<b>I</b>		
Primary	1.18	1.01	1.95		
Manufacturing	12.45	13.36	11.95		
Construction	6.96	21.14	7.93		
Retail, Rest. and Hotel	21.64	22.01	24.15		
Utilities and Transp.	8.82	8.95	2.75		
Finance and Prop.	9.76	6.49	7.64		
Public Adm. and Defense	9.38	4.67	6.00		
Education and Health	15.85	7.51	15.09		
Other Services	13.95	14.87	22.54		

Note: EPH data. Employment (E), Unemployment (U) and Inactivity (I).



## Tables for section 4

**Table 4.1**

<b>Poverty and Indigence rates</b>					
<b>Poverty</b>					
	May-01	May-02	May-03	S2-03	S2-04
Total Urban					
Households	26.2	41.4	42.6	36.5	29.8
Individuals	35.9	53	54.7	47.8	40.2
Excluding income from Plan Jefes 1/					
Households	-	-	43.2	37.1	30.6
Individuals	-	-	55.3	48.5	40.9
<b>Indigence</b>					
	May-01	May-02	May-03	S2-03	S2-04
Total Urban					
Households	8.3	18	17.9	15.1	10.7
Individuals	11.6	24.8	26.3	20.5	15
Excluding income from Plan Jefes 1/					
Households	-	-	20.5	17.2	13
Individuals	-	-	29.7	23.5	18.2

Source: EPH, INDEC.

1/ Plan Jefes y Jefes with and without work requirement is considered.

**Table 4.2**

<b>Rate of pro-poor growth</b>			
	2001-02	2002-03	2003-04
Total hhs. income			
Mean growth rate at headcount index percentile	-36.70	7.27	15.40
Total hhs.income without transfers			
Mean growth rate at headcount index percentile	-37.27	-10.32	15.78

Note: Author's calculations based on EPH for 2001-02 and 2002-03. EPHC for 2003-04.

**Table 4.3**

<b>Decomposition of poverty and indigence changes</b>			
	total change	Growth effect	Distribution effect
<b>Poverty</b>			
<b>2001-2002</b>	16.874	12.885	3.989
<b>2002-2003</b>	1.336	0.948	0.388
<b>2003-2004</b>	-6.565	-2.106	-4.459
<b>Indigence</b>			
<b>2001-2002</b>	13.071	6.787	6.284
<b>2002-2003</b>	0.619	0.708	-0.089
<b>2003-2004</b>	-4.307	-1.414	-2.893

Note:

1/ Data for May 2001 to May 2003 from EPH. For 2003 and 2004 the data are second semester data from EPH continua.

2/ Average effect is quoted. Residuals are zero.

Table 4.4

Poverty in sectors (shares of the total poor)					
	May-01	May-02	May-03	2nd 03	2nd 04
<b>Industrial Sectors</b>					
Primary	0.35	0.36	0.51	0.60	0.55
Manufacturing	4.60	4.85	4.59	4.97	5.54
Construction	4.37	4.25	3.98	2.72	3.15
Retail, Rest. and Hotel	7.43	7.94	7.75	8.02	8.82
Utilities and Transp.	2.31	2.67	2.38	2.62	2.78
Finance and Prop.	1.49	1.53	1.68	3.00	3.02
Public Adm. and Defense	1.44	2.09	2.66	3.57	3.35
Education and Health	1.94	2.85	3.68	5.98	5.81
Other Services	5.65	5.81	6.06	5.01	5.39
<b>Formal/Informal Sector</b>					
Formal	6.56	7.33	7.60	13.95	14.84
Informal	8.37	8.43	11.94	14.30	14.70
<b>Labor Force Status</b>					
Employed	21.79	22.87	26.90	36.66	38.52
Unemployed	8.75	10.59	7.74	7.08	5.92
Inactive	69.39	66.48	65.34	37.78	37.56
<b>Labor Market Status</b>					
Employer	0.20	0.22	0.25	0.96	1.24
Self-Employed	6.31	6.44	6.74	8.15	8.42
Employee	14.97	15.82	19.55	32.31	32.86
Unpaid	0.31	0.38	0.37	0.56	0.48

Note: Deflated poverty lines and real household income per capita.

Table 4.5

Growth and inequality decomposition of poverty, by sector and labor force/market status									
	May'01-May'02		May'02-May'03		May'01-May'03		2003-2004		
	Growth	Inequality	Growth	Inequality	Growth	Inequality	Growth	Inequality	
Primary	15.72	1.15	-2.50	6.15	15.04	5.46	21.20	-30.66	*
Manufacturing	13.93	6.32	1.85	-5.02	16.58	0.51	-4.13	-4.23	*
Construction	23.14	0.76	-5.79	5.03	17.08	6.07	-2.34	-4.63	*
Trade	13.43	5.19	2.30	-1.86	16.51	2.55	-4.15	0.47	*
Transport	16.60	4.26	-1.12	-2.44	15.88	1.42	-4.97	-2.80	*
Finance	6.25	1.33	2.08	-1.90	8.96	-1.20	-0.38	-4.39	*
Public admin.	9.96	4.77	4.69	5.84	14.44	10.83	-1.97	-5.34	*
Education	8.36	4.71	2.98	3.48	11.30	8.23	-3.25	-3.07	*
Other Services	10.28	6.08	-1.71	4.57	10.10	9.12	-2.46	-6.62	*
Formal	7.89	2.07	1.68	-0.50	9.47	1.67	0.63	-6.18	*
Informal	15.77	6.22	4.79	1.63	21.33	7.08	-5.88	-0.60	*
Employed	10.31	4.94	3.26	0.59	13.98	5.12	-1.60	-4.59	*
Unemployed	15.18	0.73	-1.60	1.71	15.78	0.24	-2.81	-3.88	*
Inactive	13.11	3.38	1.14	0.37	14.57	3.43	-1.17	-4.53	*
Employer	3.38	1.78	2.00	-0.55	3.70	2.91	2.70	-1.68	
Self-Employed	12.32	5.10	-1.19	-0.91	12.62	2.70	-4.93	-1.36	*
Employee	9.95	4.56	4.20	1.64	14.38	5.97	-1.70	-5.46	*
Unpaid	9.60	9.07	8.87	1.59	22.41	6.73	3.81	-2.41	

Note:

1/ Industrial sectors are aggregated from EPH household survey.

2/ National poverty lines are used.

3/ All residual components are zero and omitted from the table.

4/ Definition for formality/informality: benefits receipts.

5/ Asteriks indicates an overall poverty reduction.

6/ Data for May 2001 to May 2003 from EPH. Data for 2003 and 2004 from EPH continua, semester data.

Table 4.6

Sectoral decomposition of poverty							
		May'01-May'02		May'02-May'03		2003-2004	
		Share	Contribution	Share	Contribution	Share	Contribution
<b><u>Industrial Sectors</u></b>	5/						
Primary		1.14	1.13	1.04	3.43	1.65	2.54 *
Manufacturing		14.38	17.11	13.97	-39.86	13.63	18.56 *
Construction		9.57	13.44	9.15	-6.22	7.46	8.47 *
Retail, Rest. and Hotel		23.29	25.49	22.65	9.08	21.98	13.18 *
Utilities and Transp.		8.75	10.73	8.27	-26.46	7.17	9.09 *
Finance and Prop.		9.08	4.05	8.43	1.37	8.23	6.40 *
Public Adm. and Defense		7.24	6.27	8.13	77.07	9.79	11.67 *
Education and Health		11.75	9.03	12.79	74.41	16.38	16.87 *
Other Services		14.80	14.24	15.57	40.07	13.72	20.32 *
Total Intra-sectoral			101.48		132.89		107.10
Population shift effect			-1.04		-52.63		-6.99
Interaction effect			-0.44		19.74		-0.11
<b><u>Formal/Informal Sector</u></b>	6/						
Formal		60.79	41.80	61.42	12.44	49.38	43.17 *
Informal		39.21	59.53	38.58	42.43	50.62	51.68 *
Total Intra-sectoral			101.33		54.88		94.85
Population shift effect			-0.81		38.54		5.28
Interaction effect			-0.52		6.58		-0.13
<b><u>Labor Force Status</u></b>	7/						
Employed		34.85	31.49	31.71	90.79	44.97	43.15 *
Unemployed		6.96	6.56	9.03	0.74	8.69	9.00 *
Inactive		58.20	56.87	59.25	66.59	46.34	40.92 *
Total Intra-sectoral			94.92		158.13		93.08
Population shift effect			4.92		-66.01		7.00
Interaction effect			0.16		7.89		-0.07
<b><u>Labor Market Status</u></b>	8/						
Employer		3.73	1.26	3.01	1.13	2.29	-0.34 *
Self-Employed		21.37	24.42	22.71	-12.39	19.42	17.92 *
Employee		73.75	70.18	73.01	110.70	76.96	80.77 *
Unpaid		1.15	1.41	1.27	3.45	1.33	-0.27 *
Total Intra-sectoral			97.27		102.89		98.07
Population shift effect			2.00		-3.60		2.39
Interaction effect			0.73		0.71		-0.46

Note:

1/ 'Share' refers to population share in period 1. 'Contribution' refers to contribution to change in total poverty.

2/ Decomposition is calculated for poverty head count index.

3/ Data for May 2001 to May 2003 from EPH. Data for 2003 and 2004 from EPH continua, 2nd semester data.

4/ Asteriks indicates an overall poverty reduction.

5/According to main salaried earner in the sectors.

6/According to main salaried earner in the sectors.

7/ Includes only people in a labor force status.

8/ Includes only all employed.

Table 4.7

Decomposition results for variables (as %)			
Variable	Attribution	Endowment	Coefficient
Age	1.2	0.0	1.2
Sex	0.1	0.0	0.1
Head of Household	-0.4	0.0	-0.4
Head's age	-23.4	-0.4	-23.0
Female Head	-0.1	0.2	-0.3
Single female head	-0.4	0.0	-0.4
Married head	-9.4	-0.1	-9.3
Education of head			
primary incomplete	0.7	0.1	0.6
primary complete	2.4	0.1	2.3
secondary incomplete	0.7	-0.1	0.8
secondary complete	2.2	0.1	2.0
tertiary incomplete	-0.3	-0.4	0.2
tertiary complete	0.8	-0.7	1.5
no. of household members	15.3	0.0	15.3
no. of children	-7.8	0.4	-8.1
Region			
GBA	-22.8	-0.1	-22.7
Cuyo	-3.6	0.1	-3.6
NEA	-2.9	0.2	-3.1
NOA	-5.1	0.1	-5.3
Pampeana	-11.0	-0.6	-10.4
Patagonia	-1.7	0.0	-1.7
<b>Subtotal</b>	<b>-65.6</b>	<b>-1.1</b>	<b>-64.5</b>

Table 4.8

Summary of decomposition results (as %)	
Amount attributable:	-65.6
- due to endowments (E):	-1.1
- due to coefficients (C):	-64.5
Shift coefficient (U):	103.6
Raw differential (R) {E+C+U}:	38
Adjusted differential (D) {C+U}:	39.1
Endowments as % total (E/R):	-2.8
Discrimination as % total (D/R):	102.8

Note: U (difference btw. model constants).

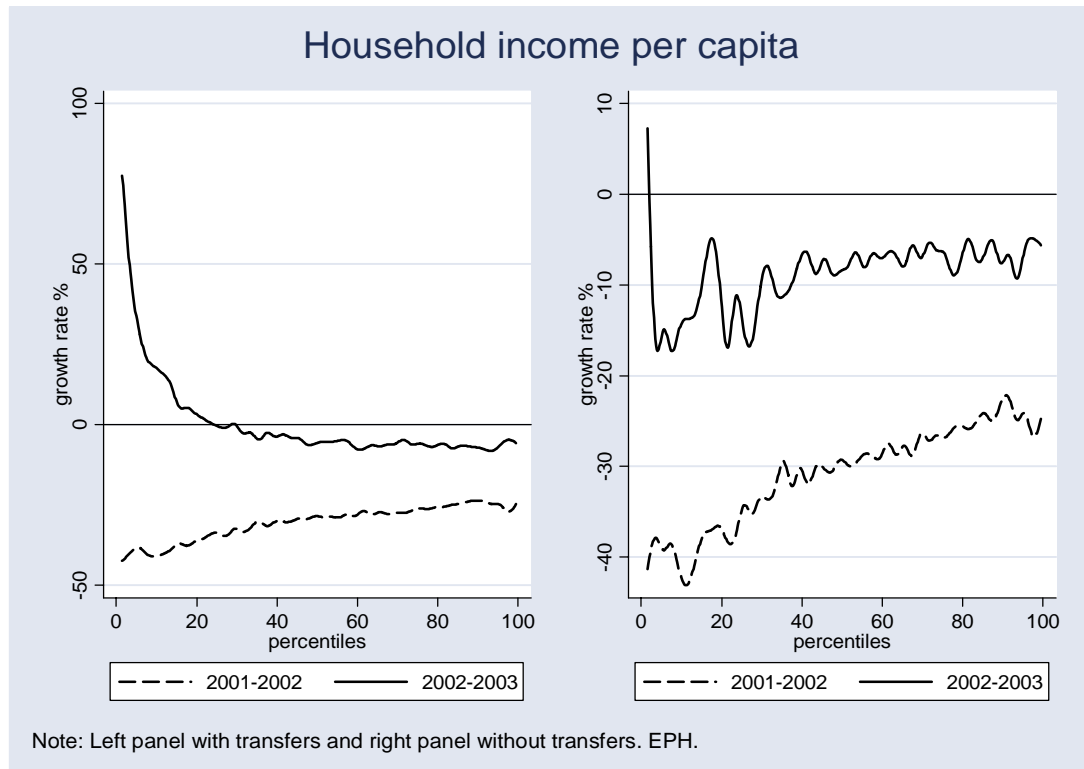
D (proportion due to discrimination (C+U)).

A positive sign indicate advantage to 2001 group,

a negative sign indicates advantage to 2003 group.

## Figures

**Figure 1: Growth Incidence Curves, 2001-2003**



**Figure 2: Growth Incidence Curves, 2003-2004**

