Aggregate Shocks and Labour Market Responses: Evidence from Argentina's Financial Crisis

David McKenzie[*]
Stanford University[#]

Abstract

Cross-sectional and panel labour force survey data are used to study the impact of the 2002 Argentine financial crisis on household and individual incomes and the labour market response. Changes in nominal wages, entry and exit into the workforce, hours worked, household labour supply and work program participation are studied separately, and then a decomposition is provided to determine which factors impacted most on total household income. The main effect of the crisis is found to be a large fall in real wages in all sectors of the economy, with weak labour demand preventing households from increasing labour supply. Participation and labour hours in self-employment are also found to fall, providing evidence against the view that this sector acts as an outlet for surplus labour during crises.

JEL Classification: O12, J23, E32

Key words – Economic crisis, Aggregate shock, Labour markets, Argentina.

[*] Department of Economics, Stanford University, 579 Serra Mall, Stanford, CA 94305-6072. E-mail: mcken@stanford.edu, Fax: (650) 725-5702.

[#] This paper has benefited greatly from discussions with Ernesto Schargrodsky and comments from the Stanford Labour Reading Group.. I also thank Matías Cattaneo and Ginger Turner for excellent research assistance.

1. Introduction

Macroeconomic crises were a recurrent phenomena in much of the developing world in the 1980s and 1990s. Lustig (2000) notes that, during the period 1990-98, there were over forty cases in Latin America alone in which per capita GDP fell by four percent or more. The East Asian financial crisis reversed decades of growth there, while crises also occurred in Russia, Brazil and Turkey. In 2002, after three years of recession, Argentina devalued its peso, ushering in the first financial crisis of the new millennium.

The severity of the crises in Mexico, Indonesia and Thailand has led to increased interest by economists into the effects of aggregate shocks on household welfare, and the extent to which households can mitigate some of the effects of these shocks by consumption smoothing, changes in expenditure patterns, and changes in household labour supply.[1] The latter is a mechanism by which households can affect the change in household income they suffer, whereas the former consider how households respond to a given income change. Fallon and Lucas (2002) survey the limited existing literature on labour market responses to crises. Based on largely aggregate data from the ILO they conclude that the main crisis effect in labour markets is on wages, not on unemployment, with countries with the largest depreciations suffering the largest cuts in real manufacturing wages. However, they note that panel evidence on individuals during a crisis is still rare, and little information seems to be available as to the extent to which wage changes in manufacturing are indicative of the experience of other sectors.

Recent work by Frankenberg, Smith and Thomas (2003) has used panel data to examine the labour market effects of the financial crisis in Indonesia. They find that there was tremendous diversity in the effect of the shock, with a non-trivial fraction of households actually experiencing income growth. With inflation of 80 percent, nominal wages are found to have risen by 40 percent, and the average household is found to have increased total household labour hours by 25 hours per week in response to the crisis.

The crisis in Indonesia followed three decades of rapid income growth, and occurred in a country with a large rural sector. The result is that Indonesian households had experienced a prosperous period over which to accumulate savings and assets, and additionally had a booming agricultural sector in which to work during the crisis. This can be contrasted with the depreciation in Argentina, which occurred in a mainly urban country which had already suffered three years of recession. Households in Argentina may have already had to use their savings and send additional members to work, so that fewer options were possibly available to cope with the crisis which followed the devaluation. Furthermore, the imposition of withdrawal limits on bank accounts (the "corralito") limited the extent to which even those with savings could rely on them to smooth their consumption over the crisis. Examination of the crisis effects in Argentina therefore provides an important check as to the generalizability of results from Indonesia for understanding adjustment to crisis in other countries.

[1] See, for example, Smith et al. (2002) and Frankenberg, Smith and Thomas (2003) on Indonesia; Townsend (2002) on Thailand; and Cunningham and Maloney (2000) and McKenzie (2003) on Mexico.

In this paper we study the short-term effect of the 2002 financial crisis on households in Argentina, and their labour market responses. Using panel data from an urban household labour force survey we are able to determine how aggregate the shock actually was, and whether it had a differential impact. In addition to the before-and-after comparisons common in the existing literature, we use several periods of pre-crisis data in order to determine what period to period movements occur in the economy in non-crisis periods. This is important as certain groups of individuals exhibit higher period-to-period variability in their labour market behaviour than others. Rather than just observing that young workers and construction workers are the most likely to leave their jobs during the crisis period, we can then assess the more relevant question of whether they are even more likely to leave their jobs during the crisis period than they were over the period preceding the crisis.

The crisis is found to have had a large aggregate effect, with 78 percent of households surveyed experiencing real income declines in 2002 and 63 percent suffering a real income fall of 20 percent or more. In spite of consumer price inflation of 40 percent and the price of a basket of basic food increasing more than 70 percent, we find that the distribution of nominal incomes remained remarkably constant, resulting in dramatic declines in real wages. This contrasts with the differential wage effects found by Pessino (1993) in studying the Argentine hyperinflation of 1989, and reflects a deindexing of labour contracts since the period of hyperinflation.

The fall in real wages can be explained by a reduction in labour demand and an increase in labour supply during the crisis. The net effect on employment is ambiguous in theory, but in practice unemployment increased, with job exits exceeding job entry. We consider separately changes in job entry and exit, changes in labour hours worked for existing workers, and the effect of a large government work program for unemployed household heads, *Jefes de Hogar*. The fall in labour demand is found to have outweighed any increases in labour supply, particularly in the hardest hit industries of construction, commerce and manufacturing. Job exits rose while job entry fell for males, causing a large reduction in employment, while female employment fell less due to an offsetting increase in job entries. We find that most existing workers were not able to increase labour hours worked in order to counter the effects of existing wages, despite many workers saying they would like to work more hours. This is not just the effect of government regulations and union agreements, as we find the self-employed are also working less hours than they desire, particularly among the newly self-employed. Self-employment therefore does not provide as much of a safety net and outlet for surplus labour as is often thought. Weak demand for the products and services of the self-employed resulted in an increase in job exits from self-employment, and a restriction on labour hours that could be productively worked for workers in self-employment.

A further contribution of this paper is in providing a decomposition of the overall change in household labour income into the relative contributions of changes in wages, hours of work, job entry and exit, and work programs. Three-quarters of the average fall in household real labour income can be accounted for by the fall in real wages for workers remaining in the same job, while only ten percent of the fall is due to household members

losing their jobs. The finding of Fallon and Lucas (2002) that real wage cuts are the main impact of financial crises is therefore found to hold not just in manufacturing, but for workers as a whole in Argentina. For the poorest quintile, *Jefes* and other government work programs are found to have had a dramatic crisis mitigation effect, accounting for more than 37 percent of all household income for this quintile in October 2002.

The only other literature we are aware of which studies the Argentine financial crisis is work by Fiszbein, Giovagnoli and Thurston (2003), which reports results from a specially conducted survey, taken in June and July 2002, which directly asked households whether they had used a variety of specific coping strategies over the past eight months. They record that almost 40 percent of their surveyed households reported a reduction in nominal income relative to October 2001, while only 8 percent reported nominal income increases. The paper provides an interesting description of reported use of many different coping strategies, but interpretation of their direct reports of labour market responses is hampered by a lack of comparison data. For example, they report that 13 percent of households added new workers to the labour market and 15 percent worked more hours, but there is no basis for knowing whether these numbers represent increases or decreases on existing labour market churn. The detailed analysis of the labour market effects of the crisis in this paper does allow such comparisons, and shows that household labour hours fell on average, with fewer households increasing hours than in periods before the crisis.

The remainder of this paper is structured as follows. Section 2 provides an overview of the macroeconomic effects of the crisis and information on expectations about 2002 in the run-up to the crisis. We use this to argue that the inflation was largely unexpected, and so real income changes were "shocks". Section 3 describes the labour force survey used for most of the analysis, and Section 4 details the effect of the crisis on male and female wages, and determines how aggregate the crisis actually was. The main labour market responses to the crisis are studied in Section 5, which analyzes changes in job entry and exit, hours of work, participation in work programs, and household structure. Section 6 examines whether households began relying more on non-labour sources of income during the crisis, while Section 7 provides our decomposition of the change in household income into its various components. Section 8 concludes.

2. The Macro Picture

After three years of growth from 1996-98, Argentina entered into a prolonged recession coupled with three years of deflation. Table 1 summarizes some key macroeconomic indicators over the period 1998-2002. The peso remained pegged at unity to the U.S. dollar until Congress voted to end 11 years of convertibility and devalue the peso on January 6, 2002. On the first day of the free float, the peso depreciated to sell at 1.60-1.70 pesos/dollar, and continued to depreciate until reaching a low of 3.90 pesos to the dollar on March 25, 2002, and ended 2002 at 3.40 pesos/dollar.[2] Argentina's economy shrank 10.9 percent in 2002, the largest fall since records began in 1900[3], and real wages fell to

[2] Exchange rates are sell prices reported in *Clarín* at http://www.clarin.com. At the start of April, 2003, the peso was trading at 2.90 pesos/dollar.

[3] See "Argentine economy hit 100-year trough in 2002", Reuters, March 19, 2003.

their lowest level in 50 years.[4] Consumer price inflation for Greater Buenos Aires[5] was 41 percent for 2002, and food prices rose more, particularly for foods consumed by the poor, so that the price of the goods in the basic food basket used for calculating the indigence line rose 74.9 percent.[6] By October of 2002, urban open unemployment had reached 21.7 percent of the economically active population, and 45.7 percent of urban households (comprising 57.5 percent of all urban individuals) were below the poverty line.[7] According to one estimate, 160,000 people migrated from the country over the period 2000-2002, compared to an annual average of 12,000 people per year over the period since 1950.[8]

2.1. Expectations and Forecasts

The aggregate decline experienced in 2002 can be only referred to as a "shock" to the extent that it was unexpected. Argentina had already suffered three years of deflation and recession prior to the imposition of the corralito on December 3, 2001, and announcement of the devaluation by President Duhalde on January 2, 2002. The extant weak economy, flight of deposits and reserves, and worsening credit rating all contributed to consensus predictions that 2002 would be a fourth year of recession. However, most forecasts made in October and November of 2001 were for zero growth or a small contraction, coupled with continued deflation. The IMF (2001) predicted a 1.1 percent decline in GDP coupled with 0.5% deflation in the December 2001 *World Economic Outlook*, the United Nations Economic Commission for Latin America (ECLAC) predicted zero growth for 2002 in November 2001[9], and the Economist Intelligence Unit (EIU) predicted -1.0 percent growth and 0.6 percent deflation in its November 2001 Country Report, and -1.7 percent growth and 0.7 percent deflation for 2002 in its December 2001 Country Report.[10] These predictions changed rapidly in response to the dramatic developments in December 2001. LatinFocus (2002) reports that a consensus private sector forecast of growth for 2002, obtained by averaging forecasts from banks and consulting agencies[11], fell from -0.2% in December 2001 to -5.3% in January 2002, the largest downward revision observed in any Latin American country since the inauguration of the publication. The January 2002 EIU Country Report had also drastically changed its predictions for 2002, to a -7% decline in GDP and 12.7% average

[4] See "Argentina: workers' wages lowest in 50 years", *Gazeta Mercantil Invest News*, 27 May 2002.

[5] The official Consumer Price Index is reported for Greater Buenos Aires only. Regional price indices are available for other cities, although they are based on a smaller number of prices and are not strictly comparable. Overall Inflation in 2002 according to these city-specific indices was 47% in Mendoza and 50.3% in Cordoba.

[6] Basic food price inflation from INDEC "Variaciones de Precios según la estructura de consume por quintil de ingresos y evolución de la canasta básica de alimentos", 31 January 2003 Press Release.

[7] Poverty numbers from INDEC "Incidencia de la Pobreza y de la Indigencia en los Aglomerados Urbanos", 31 January 2003 Press Release.

[8] "Population – LATAM: Emigration exodus reaches "alarming" proportions", *Inter Press Service*, January 17, 2003.

[9] See "ECLAC-Latin America: Growth will not exceed 2 percent in Latin America for 2002", Global News Wire, EFE News Service, November 20, 2001.

[10] Economist Intelligence Unit (EIU) *Argentina Country Report Updater*, November 2001 and December 2001.

[11] Including Barclays Capital, Bear Stearns, Deutsche Bank, JP Morgan Chase, Estudio Brods y Asociados, Merrill Lynch, BBV Banco Frances, BCP Securities, Dresciner Bank Lateinamerika AG and three others.

inflation. Some recovery was expected in 2003, with growth forecasts of 2.6% for 2003 and 3.5% for 2004 made in LatinFocus (2002). Based on this evidence, we therefore conclude that the majority of the aggregate change in 2002 was not expected at the time of the October 2001 EPH survey, and that the large increase in inflation was mostly unexpected.

For the remainder of this work we will therefore consider the "crisis" to be the period following the devaluation, and thus consider the May 2002 EPH survey to be the first survey during the crisis. Our counterfactual for 2002 is that people were expecting a continued recession, as in 2001, but no inflation. That is, in the absence of the crisis we would have expected changes similar to those observed between the May and October waves of the 2001 EPH. We also consider data over longer-periods before the crisis in order to see falls over the recession period.

3. Data

The *Encuesta Permanente de Hogares* (EPH) is an urban household labour force survey taken by Argentina's National Statistical Agency, INDEC, in May and October each year in provincial capitals and areas with more than 100,000 inhabitants. The survey is a rotating panel, with a quarter of the households rotated out each period, so that a given household can be followed for up to 18 months, or 4 periods. The survey is carried out in 28 urban areas[12], and is representative of 61 percent of the country and 71 percent of urban areas (INDEC, 2001). We use up to eleven waves of the survey, from October 1997 through to October 2002, but concentrate the majority of analysis on the five waves from October 2000-October 2002, for which information on participation in work programs is available. Approximately 21,000 households are surveyed each time, yielding information for roughly 80,000 individuals in each survey period, of which 32,000-34,000 are aged 25-60. Six-month panels are constructed by matching individuals or households in consecutive surveys, and typically allow approximately 21,000 individuals aged 25-60 to be followed. Approximately 12,000 prime-age individuals are observed in both the October 2000 and October 2001 surveys. Sample sizes for the 2001 and 2002 cross-sections and panels are given in the appendix Table B1.

We follow the official definition of employment participation given in INDEC (1997), in which an individual is considered to be in the workforce if he or she was employed for one hour or more of paid work in the reference week, or worked for 15 hours or more without pay, or didn't work in the reference work due to factors such as leave, vacation, illness, or strikes, but maintained his or her employment status. In many applications we concentrate on individuals working 25-90 hours per week. Beginning with the October 2000 survey, one can also distinguish individuals in work programs from the rest of the workforce.

The EPH survey contains detailed questions on employment and incomes, together with information on household demographics, basic housing information and questions on education. We calculate nominal monthly individual labour income as income from

[12] An additional three areas were added to the survey in the October 2002 round. To maintain comparability with earlier rounds of the survey, we do not use observations from these new areas.

wages and salaries, bonuses, self-employment earnings, and earnings as a boss or manager. The reference period is the month prior to the survey, so we deflate nominal incomes by the April and September Consumer Price Indices for Greater Buenos Aires to obtain real labour income.[13] We work with both nominal and real incomes to separate out the effect of inflation. Household total income is the sum of labour income from each member, together with income from rent, interest, dividends, unemployment benefits, scholarships, food coupons, private transfers and other sources. Hours worked are total hours worked in the reference week in all jobs, which we convert to hours per month in order to obtain hourly wages.[14] A detailed description of the other main variables used in this study is contained in the data appendix B.

The survey is carried out via a two-stage random sample. Within each of the 28 city areas, a random sample of geographic units is chosen in the first stage, and then a random sample of houses within the selected units is drawn in the second stage. Sampling weights are provided which correct for non-response in the cross-section, and allow for population employment and unemployment numbers to be calculated. These weights can vary for the same household from one survey to the next and do not account for attrition in the panel aspect. Furthermore, they need not be representative for group-level comparisons, such as comparing self-employed to wage workers. For these reasons we prefer to use the unweighted data and report the effects of the crisis on the large sample of individuals we can follow over time.[15] We address the issue of sample attrition in Appendix A, and suggest that overall attrition did not increase significantly over the crisis.

4. How aggregate was the aggregate shock?

Figure 1 provides a first look at changes in the distribution of household and individual nominal income over the period 1999-2002. Kernel densities[16] are plotted of total log nominal household income from all sources, and of male and female log nominal income from labour, for males and females aged 25-60 years working 25-90 hours per week and not in work programs.[17] Data from all 28 urban areas are used, resulting in nominal incomes for 13,300-15,800 households, 8,500-11,800 male workers, and 4,700-6,400 female workers being available for analysis each year. The total household nominal income distribution is seen to move left over time, reflecting a fall in nominal incomes, even with inflation above 40 percent in 2002. A bulge in the October 2002 household income distribution is seen at 150 pesos, which is the income paid by the *Jefes* program,

[13] See footnote 5.

[14] The EPH allows labour hours to be separated into hours in the primary job and hours in other jobs, but does not allow labour income to be calculated separately by job.

[15] Given the large sample of data available, aggregate comparisons in this paper are highly robust to whether weights are used or not. Specific results for workers of a given age in a specified occupation can be more sensitive to whether weights are used, but in small samples we prefer to assign equal weight to each observation.

[16] Kernel densities were estimated in STATA with an epanechikov kernel at 100 points using the default data-driven bandwidth.

[17] Although the October 1999 survey does not ask whether workers are in work programs, the restriction to 25 hours or more a week serves to eliminate most workers in work programs so the comparison across years is valid.

to be discussed in Section 5.4. In contrast, the distribution of nominal income for male and female workers is almost completely unchanged over the four years, and does not show the fall seen in household income. However, the fact the individual income distributions do not shift rightwards in 2002 suggests that the whole real income distribution was hit by the inflation.

Using the rotating panel feature of the EPH, we can follow the same individuals or households over time and determine the extent to which aggregate falls in income were shared by individuals and households. Table 2 reports the percentage of households and individual workers experiencing real income falls, real income falls of 10 percent or more, and real income falls of 20 percent or more, each year over the period 1996-2002. Prior to 2001 we find that approximately half of households experienced a real decline in income. This increases to 56 percent over the period October 2000-2001, and then jumps to encompass 78.4 percent of households between October 2001 and October 2002. Moreover, 62.7 percent of households are found to have had real income falls of 20 percent or more over this same period. More than 80 percent of males, and 84 percent of females, aged 25-60 who were employed in both October 2001 and October 2002 experienced real labour income falls over this period.[18] The macro shock therefore seems to have been experienced by a large majority of households and individuals.

In Figure 2 we use panel data on individuals who were employed in both October 2001 and October 2002, and plot the bivariate joint density of log real labour income separately for males and females. Almost all of the mass of the distribution lies under the 45^{o} line, showing that the majority of individuals who worked in both periods suffered real wage falls. This is true for almost the entire range of initial income, so that both the poor and the rich suffered income falls.[19]

Given that the shock seems to be experienced by most households and workers, we next examine the heterogeneity of the shock. First we consider the impact on labour income of workers who remain employed, before considering changes in unemployment and labour force participation. Tables 3 and 4 detail mean levels of nominal labour income for males and females respectively, broken down according to worker characteristics, for individuals working 25-90 hours per week and who are not in work programs. Consistent with Figure 1, we find no significant change in overall mean nominal income for females, and a small decline in mean nominal income for males. We find that mean real labour income falls between 2001 and 2002 for workers of all age groups, industries, geographic regions, education levels, tenure lengths, occupations and income quintiles. The smallest declines were for workers who were bosses and managers, and workers in Patagonia and the Northeast. Largest declines are seen in financial services, and for males in the health and restaurant and hotel sectors. However, the differences between groups are small relative to the overall fall.

[18] Of course undermeasurement of income in the initial period is one reason why some workers may have measured real income increases. Using the panel of workers observed in May 2001- October 2002, we calculate that only 9.2% of male workers and 6.7% of female workers aged 25-60 experienced real income growth in October 2002 relative to both their May 2001 and October 2001 wages.

One can also use the sample of workers observed in both October 2001 and in May 2002 and regress the change in nominal labour income on individual characteristics in order to further determine whether there were differential income effects and to control for correlation amongst indicators. Male workers who were bosses or managers, were in firms with large numbers of employees, and who changed their job are found to have significantly larger income falls, while younger workers, workers who increased their labour hours worked, and workers in the province of Cuyo had significantly smaller income falls than average.[20] Female workers in Cuyo and who increased their labour hours worked also had smaller income falls. However, one would not want to attribute the differential income changes as entirely due to the crisis, as they may just reflect underlying trends. Certainly one would expect workers who increase their hours to earn relatively more in any year, and younger workers are also likely to face increasing income profiles as they get older.

To account for these possibilities, in Table 5 we present estimated interaction terms between individual characteristics and the onset of the crisis. The change in log nominal income between waves of the EPH is regressed on a set of individual characteristics, including industry of work, age, occupation, education, firm size in which the individual works, geographic region, change in log hours worked, whether the individual has changed job, and initial labour income quintile. The May 2000-May 2002 waves of the EPH are used, giving four periods of nominal income changes. A dummy variable for the period October 2001-May 2002 is interacted with each of the individual characteristics, to determine whether relative nominal income changes differ in 2002 compared to the previous recession years. Very few interaction terms are found to be significant: males who were a boss or manager, or who changed jobs had relatively greater income falls between October 2001 and May 2002 than they had been experiencing; females in Cuyo did relatively better than previously, while females with tertiary education did relatively worse. Thus the majority of workers remaining in the workforce did not experience differential income effects of the crisis.

5. The Labour Market Response

The large macroeconomic crisis resulted in a reduction in aggregate labour demand. The Center for Research in Finance (Centro de Investigación en Finanzas) of the Universidad Torcuato Di Tella in Buenos Aires provides an Index of Labour Demand constructed from the seasonally-adjusted volume of job listings in the classified sections of the two major Buenos Aires newspapers, *Clarín* and *La Nación*.[21] Job listings fell 14.8% over the previous month in January 2002, 6.8% in February 2002, and a further 17.8% in March 2002. Overall labour demand by this measure in March 2002 was 40 percent less than in November 2001 and 59 percent less than the previous March. There was some recovery over the subsequent months, but job listings in September 2002, the reference period for the October 2002 EPH, were still 12.9 percent down on the same month of the

[20] Full regression results available upon request from the authors. OLS regressions were for workers aged 15-65, employed 25-90 hours per week, and not in work programs.

[21] The index and further description of its methodology are available online at http://www.utdt.edu/departamentos/empresarial/cif/idl.htm.

previous year. Labour supply at any given real wage is likely to have increased, as the income effect of a fall in household income causes households to reduce leisure and send more workers to the labour market, and existing workers to try to work more hours. In addition to this standard income effect, Frankenberg, Smith and Thomas (2003) note that, in the presence of borrowing constraints, households may choose to borrow future leisure hours from themselves and further increase current work hours supplied. Both the shift outwards of the labour supply curve and the inward shift of the labour demand curve act to depress real wages. However, the net effect on employment is theoretically ambiguous, depending on the relative size of the aggregate labour supply and aggregate labour demand shifts, and on the elasticities of the two curves.

Ex-ante, one would expect the reduction in labour demand to be greatest in the sectors experiencing the largest product demand shocks during the crisis. Based on Table 1, this would include construction, which fell 33 percent, and commerce, which fell 18 percent. However, the widespread nature of the crisis is likely to have reduced demand in most urban employment sectors, and additionally reduced demand for the products and services of the self-employed. Labour supply is generally considered to be more elastic for women and young adults than prime age males, so we might expect a larger labour supply response theoretically from them.

The aggregate impact of changes in labour supply and demand on employment is presented in Figure 3. Eleven waves of the EPH are used from 1997-2002 in order to provide trends over period before the devaluation. In keeping with the reported increase in unemployment, the top right panel shows male and female workforce participation both fell between the October 2001 and May 2002 EPH surveys. The percentage of males aged 25-60 who were employed and not in work programs fell from 77.6 to 73.5 percent, while for females, there was a lesser drop, from 48.4 to 46.5 percent. Employment was also falling in 2001, so in Table 6 we compare the change in employment between May and October of 2001 to the change between October 2001 and May 2002 to determine whether there was an increase in the rate at which employment fell. The difference-in-difference is significantly different for males but not females, showing males experienced even larger falls in employment following the devaluation.

5.1. Job Entry and Exit

Changes in employment arise from both job losses and from entrants to the workforce. The top left panel of Figure 3 presents data on job entry and exit. Using the panel aspect of the EPH, we calculate the proportion of employed individuals aged 25-60 who lose their job between survey waves, and the proportion of those without jobs in one wave who have started work by the next wave. We observe an increase in job exits and a decrease in job entry. There is a particularly large drop in the probability that a male without a job enters the workforce, although this drop begins in May 2001. Table 6 presents difference-in-difference results to compare changes in exit and entry to the period before the devaluation. For males there is a significant relative increase in job losses, and an insignificant relative change in job gains. For females, the significant relative increase in job losses is offset somewhat by a relative increase in job entry, with

the net result being that female employment only fell by as much after the devaluation as it had in the period immediately before.

Pessino and Andrés (2000) study the determinants of unemployment levels and durations in Argentina over the period 1998-99, and conclude that the low probability of moving from unemployment to work is the main cause of higher levels of unemployment in Argentina than in the United States: they estimate that over a six month period, an unemployed worker is 10 times more likely to enter the workforce in the U.S. than in Argentina. The fall in the probability of an unemployed male finding a job makes this comparison even more unequal. However, although the low probability of moving from unemployment to work may be the main determinant of the high level of unemployment, the *increase* in unemployment over the devaluation period is seen to be mainly due to the increase in job losses.

Both labour supply and labour demand decisions determine the levels of job entry and exit in the economy. However, the increase in job exits can be viewed as mainly a result of the decrease in labour demand, while the change in job entry reflects the net effect of a reduction in labour demand for new workers and an increase in labour supply. Under this interpretation, male employment changes are therefore mostly the result of a decrease in labour demand, while increases in female labour supply helped somewhat to offset decreases in demand.

We investigate further the differential effects of the devaluation and crisis on employment in Table 6. Employment for both males and females falls more in wage and salary work than in self-employment. However, the probability of an employed person losing their job increases in both wage and self-employment for men and women, and the proportion of the unemployed gaining a job falls for males entering both wage work and self-employment. In terms of industry, the massive aggregate fall in construction activity seen in Table 1 resulted in a reduction of the share of male job entrants moving into construction, and a large increase in the probability that a worker in construction would lose their job over a six month period: 24% of construction workers lost their jobs between May and October of 2001 to compared to 36.4% between October 2001 and May 2002. Commerce was also hit hard by the crisis, showing a 18.4 percent decline in aggregate activity in Table 1. The share of new female workers moving into commerce fell, and both male and female workers in commerce suffered an increase in the probability of job losses: 31.3 percent of females employed in commerce in October 2001 were not employed in May 2002.

To control for multiple factors and existing trends, we estimate probits for the probability of job entry and exit, over the period October 2000-May 2002, as a function of individual characteristics. In Table 5 we present estimated interaction terms between individual characteristics and the onset of the crisis. Males in construction, public administration and education are found to be even more likely to exit, in accordance with the results above. Both male and female workers in public firms are found to be less relatively likely to lose their jobs, compared to the period before the crisis, indicating perhaps restrictions on public sector layoffs during the crisis. Few differential effects of entry are found,

although males with larger families and females aged 25-44 are found more likely to enter the workforce.

The bottom panel of Figure 3 examines whether the crisis was accompanied by increases in casual labour, i.e., in a greater share of jobs without benefits, jobs of short-term or uncertain duration, and of part-time work. We find slight increases in male and female part-time employment, and an increase in the proportion of male workers who do not receive work benefits and who are in temporary positions. The share of female workers who are not receiving benefits actually falls, which is most likely a selection effect whereby job losses are greater among those without benefits.

5.2. Changes in Hours Worked

In addition to job exits and entry, changes in labour demand and supply can manifest themselves through changes in the hours worked by existing workers. Figure 4 plots the distribution of changes in hours worked between surveys separately for male and female wage workers and male and female self-employed workers. The distribution of the change in hours is much more tightly centered around zero for wage workers than for self-employed workers. For wage workers, the distribution has a very similar shape over each of the four periods considered, and the proportion of workers with no change in hours actually increases slightly. There are fewer self-employed workers, so the estimated distribution is noisier for the self-employed, but still shows a similar shape in 2002 to that in 2001. In particular, there is no systematic shift in mass from one side of zero to the other: some workers increased hours worked and others reduced them, and this was true both before and after the crisis.

Table 7 examines further changes in hours worked according to different individual attributes. The matched sample corresponds to the observations in Figure 4, who are individuals that can be followed and observed working in two consecutive periods. We find that the mean change in hours worked was actually significantly negative for males in wage work and in self-employment, and also for females in wage work. The mean change of 0.5 to 1 hour per week differs from the median change of zero, and is difficult to detect graphically. Individuals who changed jobs show a larger fall in hours, and there is also a decline in the mean hours worked by individuals entering both self-employment and wage work.

Looking at all workers, we find a significant fall in mean hours worked by prime age male and female workers, and insignificant declines in mean hours worked by younger and older workers. Mean hours worked fall significantly in manufacturing, construction and commerce for men, and in manufacturing and commerce for women. Thus not only did these industries show more lay-offs, but hours of work also declined for workers remaining in these industries.

The EPH also asks workers whether they would like to work more hours than they currently do, and if so, whether they had actively looked to work more hours in either

their current job or in another job.[22] Table 7 shows that more than a quarter of all workers would like to work more hours than they currently are, and made active efforts to do so. Moreover, the overall proportion of workers seeking more hours rose between October 2001 and May 2002. In May 2002, 51 percent of male construction workers sought to work more hours. Interestingly, a larger proportion of the self-employed seek to work more hours than of wage workers. New entrants to self-employment particularly seem to be constrained in the number of hours worked, with 60 percent of new male self-employed workers and 47 percent of new female workers in May 2002 saying that they tried to work more hours than they are working. These findings suggest that it is not just union contracts and government regulations limiting hours worked, but a lack of demand. Self-employed workers would like to work more hours, but may not have sufficient demand for their services to allow them to do so.

5.3. Changes in Total Household Hours and Household Size

While individual labour hours fell on average, households may have been able to maintain household income by sending more members to the labour force and by one member increasing hours to offset falling hours for another member. In Table 8 we examine the change in total household hours. We find that mean household hours fell during the crisis by an average of 5 hours per week. Mean hours were lower in May 2002 than in October 2001, and also compared to average hours over the period October 2000-October 2001. This is true for all quintiles of per capita income. This contrasts with the results in Frankenberg, Smith and Thomas (2003) who find family hours increased substantially during the Indonesian crisis. Using the panel aspect of the data, we find that the proportion of households increasing their labour hours over a six month period fell during the crisis, so although 35 percent of households report an increase in labour hours, this is lower than in non-crisis periods. Lack of labour demand reduced the ability of households to increase household labour supplied to cope with the crisis.

In Table 8 we also examine whether household size changed in response to the crisis. McKenzie (2003) found little change in household structure during the 1995 Mexican financial crisis, while Frankenberg, Smith and Thomas (2003) find evidence of households combining during the Indonesian crisis. Overall, average household size did not change. Looking by quintile, Welch tests do reject equality of mean household sizes for all but the top quintile at the 5 or 10% level of significance. However, given the large number of observations, we believe a 1% level of significance to be more appropriate. At this level, no quintile shows a significant change in household size relative to both mean household size in October 2001 and to mean household size over the three surveys from October 2000-2001. Using the panel data, we find no systematic change in the proportion of households changing size from over different six month periods. We are therefore confident that making household-level comparisons over the crisis is not confounded by changes in household size.

[22] The question does not specify whether the additional hours sought would be at the same wage as current hours worked or not.

5.4. Participation in Work Programs

In response to the crisis the Argentine government launched a major work program, *Jefas y Jefes de Hogar Desocupados* (Unemployed Heads of Households). The program provides 150 pesos per month to unemployed household heads or their spouse in exchange for 20 hours per week of community service work, job training, or work as a temporary employee of a private company. The first payments under the program were made on May 15, 2002[23], so will not show up in the May 2002 survey, which takes the month of April as the reference period. To be eligible for this program, the household must contain at least one of a child under the age of 18, a pregnant women, and/or a handicapped member. Either the husband or the wife, but not both, can participate in the program, provided that their spouse is not working. Households may have multiple members in the program if there are unemployed unmarried children in the household who also have dependents. By June 2002 there were 1.4 million recipients[24] and by February 2003 there were 1.9 million recipients of the program, of which 64 percent were women.[25] Unemployed individuals who did not meet the eligibility criteria for *Jefes* could instead receive the same monthly payment through another employment program: *Programa de Emergencia Laboral (PEL)*.

Figure 5 shows participation rates in work programs from October 2000-2002. There is a small increase in work program participation in May 2002, and a dramatic increase between May and October 2002, reflecting the large impact of the *Jefes* program. The increase and level are much larger for females: in October 2002, 4.7 percent of the male workforce and 15 percent of the female workforce were employed in work programs. In the lower two panels of Figure 5 we plot participation in work programs by household income per capita decile for males and females. Work program participation increases for women in the bottom seven deciles, and for men in the bottom four deciles. Almost twenty percent of women aged 25-60 in the lowest decile are in a work program in October 2002, compared to less than 6 percent in May 2002. These proportions are an underestimate of the true participation, since they only cover individuals working in work programs, and not individuals enrolled in *Jefes* who are in work training or otherwise not working.

6. Did Households Change the Source of Their Income?

Figure 1 showed that household nominal income fell over the crisis, while the distribution of individual nominal labour income did not change. Given the increase in unemployment and in participation in work programs, we next examine how much households changed their source of income during the crisis.

The share of total household income derived from different sources is reported for the bottom, middle, and top quintiles in Table 9. We consider only households with heads aged 30-50 years, which are households with at least one prime age adult, and test whether the share of total household income coming from different sources changed between October 2001 and May and October of 2002. Welch tests are used to test

[23] See "Duhalde lanzó subsidios para dos millones de desocupados", *Clarín.com*, 4 April, 2002.
[24] See "Más plata para los desocupados", *Clarín.com*, 13 June 2002.
[25] See "El 64% del Plan Jefes de Hogar se otorga a mujeres", *Clarín.com*, 27 February, 2003.

whether the mean share of household income coming from a given source in May or October 2002 differs from the mean share in October 2001.[26] The upper income quintile is found to have had no significant changes in the sources of household income. In contrast, large changes are found in the lower income quintile. The share of household income coming from males staying in the workforce dropped from 15% in October 2001 to 6% in October 2002, and the share coming from female wage labour, and male and female self-employment also dropped significantly. There is a small increase in the share of income coming from unemployment insurance in May 2002, but this does not last into October 2002. The big increase in income share for the lowest quintile comes from males and females in work programs, which corresponds to the large increase in participation in work programs for the lower deciles seen in Figure 5. Female income from work programs accounted for 22% of total household income in October 2002, compared to only 3% in October 2001; the male work program income share also jumped from 2% to 16%. Moreover, the category "other" has also increased its share of total household income. Income from government programs that was not accompanied by work are reported in this category. This would include people in the *Jefes* program receiving training, or not working, as well as other government assistance programs. Households in the middle income quintile also show an increased income share from female work programs, but the contribution is much less than for the lowest quintile.

7. Decomposition of the Change in Household Labour Income

We have examined separately changes in labour income, hours worked, workforce participation, and enrolment in work programs. This has the advantage of allowing us to determine differential effects, and closely examine some of the main avenues for labour adjustment during the crisis. However, the net effect on households depends on the joint outcome of all these factors, and so we are interested in how much each contributes to changes in household income. This requires a decomposition of household income into its various components, which we now provide.

Let $y_{h,t}$ be household h's total labour income at time t. For household member i, let $d_{i,j,t}$ be an indicator variable taking the value one if member i is employed in occupation j at time t, and zero otherwise. There are J possible occupations, including self-employment, wage and salary work, work programs, and no occupation/unemployment. Let $w_{i,j,t}$ and $h_{i,j,t}$ denote respectively the hourly wage received (or income per hour worked), and the number of hours per month worked, by worker i in occupation j at time t. Then if there are m_h members in household h, household labour income can be expressed as:

$$y_{h,t} = \sum_{i=1}^{m_h} \sum_{j=1}^{J} d_{i,j,t} w_{i,j,t} h_{i,j,t} \qquad (1)$$

Letting $\Delta y_{h,t} = y_{h,t} - y_{h,t-1}$ denote the change in monthly household labour income between periods t-1 and t, one can write:

[26] Of course these tests are not independent across sources, as an increase in the share of income coming from one source necessarily means a reduction in income from other sources. However, the Welch tests are appropriate for the purpose here of describing where significant changes in the source of household income have occurred.

$$\Delta y_{h,t} = \sum_{i=1}^{m_h}\sum_{j=1}^{J}\left(d_{i,j,t}w_{i,j,t}h_{i,j,t} - d_{i,j,t-1}w_{i,j,t-1}h_{i,j,t-1}\right)$$

$$= \sum_{i=1}^{m_h}\sum_{j=1}^{J}\left(d_{i,j,t-1}w_{i,j,t}h_{i,j,t} - d_{i,j,t}w_{i,j,t-1}h_{i,j,t-1}\right) \quad (2)$$

$$+ \sum_{i=1}^{m_h}\sum_{j=1}^{J}\left(d_{i,j,t} - d_{i,j,t-1}\right)\left(w_{i,j,t}h_{i,j,t} + w_{i,j,t-1}h_{i,j,t-1}\right)$$

Equation (2) expresses the change in household labour income as the sum of two terms: the change in income from members who stay in the same job, and the change in income from members who change jobs, or enter or leave the workforce. We can decompose the first term in (2) further, into the sum of the change in household income coming from the change in wages for members who maintain the same job, and of the change in household income coming from members changing the hours worked in their existing job:

$$\sum_{i=1}^{m_h}\sum_{j=1}^{J}\left(d_{i,j,t-1}w_{i,j,t}h_{i,j,t} - d_{i,j,t}w_{i,j,t-1}h_{i,j,t-1}\right) =$$

$$\sum_{i=1}^{m_h}\sum_{j=1}^{J}\left(d_{i,j,t-1}w_{i,j,t} - d_{i,j,t}w_{i,j,t-1}\right)h_{i,j,t} + \sum_{i=1}^{m_h}\sum_{j=1}^{J} d_{i,j,t}w_{i,j,t-1}\left(h_{i,j,t} - h_{i,j,t-1}\right) \quad (3)$$

Similarly, for those who work both periods[27], but change jobs, the second term in (2) can be decomposed into the change in income coming from wage changes with the new job, and the change in income coming from changes in hours worked in the new job:

$$\sum_{i=1}^{m_h}\sum_{j=1}^{J}\left(d_{i,j,t} - d_{i,j,t-1}\right)\left(w_{i,j,t}h_{i,j,t} + w_{i,j,t-1}h_{i,j,t-1}\right)$$

$$= \sum_{i=1}^{m_h}\sum_{j=1}^{J}\sum_{k\neq j}\left(w_{i,j,t} - w_{i,k,t-1}\right)h_{i,j,t}d_{i,j,t}d_{i,k,t-1} \quad (4)$$

$$+ \sum_{i=1}^{m_h}\sum_{j=1}^{J}\sum_{k\neq j} w_{i,k,t-1}\left(h_{i,j,t} - h_{i,k,t-1}\right)d_{i,j,t}d_{i,k,t-1}$$

Using equations (2), (3) and (4), one can then decompose the change in household labour income into the effect of wage and hours worked changes for those who stay in the same job and occupation; wage and hours worked changes for members who change jobs or occupations; household income gained from new members entering the workforce; household income lost from household members exiting the workforce; and household income changes from members entering work programs.[28] This can be done for each household, and then averaged over all households to report the mean change in household income due to each component. We do this for all households with heads aged 25-60, and also separately for the bottom total household labour income quintile, since we have seen that work programs played a much more important role for this quintile.

[27] For members entering or leaving the labour force, hours worked are zero and wages are not observed in one of the two periods, so the change in income is not further decomposed into hour and wage effects for these members.

[28] Only a very small number of individuals are observed leaving work programs over the sample period, so we do not report the small change in average household income arising from members leaving work programs.

In practice the presence of outliers can have large effects on the means of each of the components of equations (2)-(4). To counter this we restrict the analysis to households with total household labour hours of at least 25 hours per week in period *t-1*, and report two sets of estimates. In the first, we drop households experiencing an absolute change in income of 100 percent or more between the two time periods. This approach can be interpreted as estimating the mean change in income for the population. To better reflect the experience of households with the average change in income, we also report a decomposition in which means are taken over households with relative income changes lying within the interquartile range (i.e. for the middle 50 percent of observations). T-tests are also performed to determine whether a given component of the mean change in income is significantly different from zero or not.

Panel A of Table 10 reports this decomposition for all households, while panel B reports the decomposition separately for the households in the lowest income quintile at the start of the period over which the change is measured. Wages for each worker are calculated as the ratio of their monthly labour income to their total labour hours worked in all jobs per month. The largest contributors to the change in total household income are found to be the fall in nominal wages experienced by male and female workers who remain in the same job, and the loss in household income from members exiting the workforce: this is true both of the self-employed and of wage and salary workers. For example, the mean fall in household nominal labour income between October 2001 and May 2002 for households working at least 25 hours a week in October 2001 is found to be 122 pesos, of which, on average, there is a 31 peso loss in wages to males remaining in the same job, a 14 peso drop from wages falling for females remaining in the same job, a 33 peso drop from males exiting the workforce, and a 23 peso loss from females exiting the workforce. The decline in household real income is found to be on average mostly due to the fall in wages for existing workers: of the 258 peso average fall in real wages, there is a 130 peso fall in wages of males working in the same job, and 60 peso loss in wages to females remaining in the same job. Thus 73 percent of the average fall in total real household income is due to real wages falling for workers remaining in the same job, whereas only 10 percent is due to losses from household members exiting their jobs.

Wage losses from workers changing jobs also occur, but are much less important on average for explaining mean changes in household income, due to much fewer individuals changing jobs. Households generally lost more from workers exiting the workforce than they gained from members entering the workforce, and entry and exit to and from wage work has a larger mean effect than to and from self-employment, even for the lowest quintile. Females entering the workforce are found to contribute as much, or more, than males entering, whereas households lose more on average as a result of males exiting than females exiting. This is a result of males earning more to begin with, and relatively more males exiting.

For the overall population, the average effect of changes in hours worked was positive, but generally small.[29] That is, changes in hours worked by members already in the labour force were generally insufficient to counteract the fall in nominal wages. We have seen that hours worked actually fell on average, so this is not surprising. The mean change in real income is almost entirely explained by real wage changes, with little effect of changes in hours worked. At the onset of the crisis, between October 2001 and May 2002, there appears to be no hours worked response to the fall in nominal and real wages. This is true both in wage work and self-employment. However, between May and October 2002, there is more effect of changes in hours worked, which acts to temper further nominal wage falls.

The effect of the *Jefes* work program is seen in the increased amount of the change in income explained by entrants to work programs between May and October of 2002. The net effect on household income is much stronger for females than males, with the average change being around 11-13 pesos for females in the lowest income quintile.[30] This is at least four times the net effect of males entering work programs, and is the largest source of average household income gains for the bottom quintile in October 2002.

8. Conclusions

The financial crisis in Argentina is seen to have had a dramatic effect on real income of workers and households, with 63 percent of urban households experiencing real income falls of 20 percent or more between October 2001 and October 2002. In general, we find that households were not able to offset falling real wages by sending more members to the labour market and having existing members work more hours: instead we find that total household labour hours per week declined on average for all quintiles. This is largely a result of increases in job exits and some reduction in labour hours for currently employed workers, but also due to a reduction in the likelihood that an unemployed male would find a job. In contrast with popular perceptions and evidence from the Indonesian financial crisis, we do not find self-employment to play much of a role in allowing households to mitigate the effects of the crisis. We actually find a reduction in self-employment during the crisis, although the reduction is not as large as the reduction in wage and salary work. Over forty percent of individuals in self-employment in May 2002 report that they would like to work more hours than they are currently doing so. This evidence suggests that it was the large demand shock of the crisis, and not just a lack of labour market flexibility, which limited the labour market response to the crisis: individuals and households would have liked to work more hours but were prevented from doing so by weak labour and product demand.

It is still too soon to know how quickly Argentina will recover from this financial crisis, although forecasts and early evidence point towards some growth in 2003. Lokshin and Ravallion (2002) have found evidence in Russia and Hungary that it can take households

[29] This can be reconciled with the earlier finding that the mean change in hours was actually negative if positive changes in hours worked were more likely for those earning higher incomes.

[30] Note this is the effect only on households that supplied at least 25 labour hours in May 2002, and who received labour income from work programs. Non-work income and income to households that were not in the labour force in May 2002 are likely to make the overall effect of the *Jefes* program even larger.

a long time to recover from large transient shocks, with poorer households in particular taking significant time to bounce back. Given the magnitude of the crisis in Argentina, their results suggest that the effects of the crisis could therefore be felt for some time to come.

References

Cruces, Guillermo and Quentin Wodon (2002) "Risk-Adjusted Poverty in Argentina: Measurement and Determinants", Mimeo. London School of Economics, London, U.K.

Cunningham, Wendy and William F. Maloney (2000) "Measuring vulnerability: who suffered in the 1995 Mexican crisis?", Mimeo, The World Bank, Washington, D.C.

Fallon, Peter R. and Robert E.B. Lucas (2002) "The Impact of Crises on Labor Markets, Household Incomes, and Poverty: A Review of Evidence", *The World Bank Research Observer* 17(1): 21-45.

Fiszbein, Ariel, Paula Giovagnoli and Norman Thurston (2003) "Household Behaviour in the Presence of Economic Crisis: Evidence from Argentina, 2002", Mimeo, The World Bank, Washington, D.C.

Frankenberg, Elizabeth, James P. Smith and Duncan Thomas (2003) "Economic Shocks, Wealth and Welfare", mimeo. UCLA.

Instituto Nacional de Estadística y Censos (INDEC) (2001) "Encuesta Permanente de Hogares: Base Usuaria Ampliada (BUA)", available at http://www.indec.mecon.gov.ar/ eph/May2001/Docs/Buadoc2.doc [31 March, 2003].

---------- (1997) "¿Como se mide el desempleo?", available at http://www.indec.mecon.ar/nuevaweb/cuadros/4/metempleo1.pdf [31 March, 2003]

Internacional Monetary Fund (IMF) (2001) *World Economic Outlook: The Global Economy After September 11*, December 2001, Washington D.C.: IMF.

LatinFocus (2002) "LatinFocus Consensus Forecast: January 2002", Barcelona: LatinFocus, http://www.latin-focus.com [March 28, 2003].

Lokshin, Michael and Martin Ravallion (2002) "Household Income Dynamics in Two Transition Economies", mimeo. The World Bank, Washington, D.C.

McKenzie, David J. (2003) "How do Households Cope with Aggregate Shocks? Evidence from the Mexican Peso Crisis", *World Development*, forthcoming.

Lustig, Nora (2000) "Crises and the Poor: Socially Responsible Macroeconomics", *Economía* 1(1): 1-30.

Pessino, Carola (1993) "From Aggregate Shocks to Labor Market Adjustments: Shifting of Wage Profiles Under Hyperinflation in Argentina", C.E.M.A. working paper no. 95.

---------- and Luis Andrés (2000) "La Dinámica Laboral en el Gran Buenos Aires y sus implicaciones para la Política Laboral y Social", mimeo. Centro de Economía y Políticas Gubernamentales, Sociales y Laborales (CESyL), Universidad del CEMA.

Smith, James P., Duncan Thomas, Elizabeth Frankenberg, Kathleen Beegle and Graciela Teruel (2002) "Wages, employment and economic shocks: Evidence from Indonesia", *Journal of Population Economics* 15: 161-93.

Townsend, Robert (2002) "Safety nets and financial institutions in the Asian crisis: the allocation of within-country risk". Mimeo, The University of Chicago, Chicago, IL.

Appendix A: Attrition and the Crisis

Attrition is a potential concern in any panel survey. As we are often comparing results from before and after the onset of the crisis, our main concern is whether there is additional non-random attrition occurring as a consequence of the crisis. There are several possible avenues along which this may take place. Firstly, data from some of the poorer areas of the suburbs of Greater Buenos Aires (GBA) were not able to be collected due to security problems for the survey personnel. INDEC reports that this resulted in the loss of information representing 4.3% of the total population of GBA in the October 2002 wave[31], compared to 2.2% in the May 2002 wave, 1.9% in the May and October 2001 waves, 1.4% in the October 2000 wave, 1.0% in the May 2000 wave, and 1.5% in the October 1999 wave. Secondly, the crisis may have caused additional migration, or changes in the value of time, which would lead to different changes in the level of non-response across different groups of the population. The response rate for the EPH is typically around 91 percent of those interviewed[32], but only 69 percent of observations surveyed first in May 01 can be matched to the October 2001 wave. Households which drop out tend to have younger heads on average and lower mean incomes than households which remain in the panel. However, attrition does not seem to increase at the onset of the crisis: 70 percent of the observations surveyed first in October 2001 are also observed in May 2002. The panel is therefore likely to underrepresent the poor and younger households, which are more likely to move, but comparisons of different panels before and after the crisis should not be significantly affected by attrition. Using data from the May 1995 to May 2002 waves of the EPH, Cruces and Wodon (2002) also argue that attrition in the EPH panel does not seem to affect trends in income in a qualitatively important way.

Appendix B: Further Data description

Construction of the panel

The EPH database tracks households by a region-specific identifier, and individuals through an individual identifier within each household. Like most household surveys, the survey tracks household structures, rather than specific households, and does not follow households which move. In order to avoid mismatching which can arise when the surveyed household moves out and another household moves in, we additionally match on the sex of the household head and require that the age of the household head not differ by more than two years from one survey to the next.

Description of Variables used in this study

The main body of the paper describes the construction of nominal individual labour income, total household income, hours worked, and construction of real incomes. Additional details on other variables used in this study are provided in this appendix.

---

[31] See "Encuesta Permanente de Hogares: Novedades de la Onda", various years, available online from INDEC at http://www.indec.mecon.gov.ar [March 31, 2003].

[32] Response rate from "Encuesta de Hogares: Características Técnicas, Argentina", mimeo. INDEC. This includes refusals, but not cases where the household structure is missing, members are absent etc, which typically account for 11 percent of the sample population.

Age is age at the time of the survey. For panel data, we use age in the first period of the panel. For example, age in the panel which combines the October 2001 and May 2002 waves of the EPH is age in the October 2001 survey.
Education is highest level of education reached. We classify this into primary education or less; secondary education (national, commercial, normal or technical schools); and tertiary education (superior or university studies).
Occupation is classified as wage or salary worker; self-employed worker; or boss or employer.
Job tenure is the number of years the individual has spent in their current job. Months of tenure are converted into fractions of a year. An individual is judged to have *changed jobs* between surveys if they were employed in both surveys, but have job tenure of 0.5 years or less in the second survey.

An individual is measured as being *Employed* if he or she worked one hour or more in paid work in the reference week, or worked 15 hours or more without pay, or didn't work in the reference week due to factors such as leave, vacation, illness, or strikes, but maintained his or her employment status. Furthermore, in most cases we consider individuals in work programs not to be employed. An individual is a *Job Entrant* if they are not employed in the previous survey and are now employed. An individual is a *Job Exit* if they are employed in the first survey and are no longer employed in the next matched survey.

TABLE 1: MACROECONOMIC SUMMARY

Indicator	Source	1998	1999	2000	2001	2002
Real GDP growth (%)	a	3.9	-3.4	-0.7	-4.4	-10.9
Real private consumption growth (%)	a	3.5	-2.0	-0.7	-5.7	-14.4
Real gross fixed capital investment growth (%)	a	6.5	-12.6	-6.8	-15.7	-36.1
Real agricultural production growth (%)	a	9.5	2.6	-1.7	0.3	-1.6
Real manufacturing growth (%)	a	1.8	-7.9	-3.8	-7.4	-10.5
Real construction growth (%)	a	8.7	-7.9	-9.3	-11.6	-33.4
Real wholesale and retail trade growth (%)	a	2.9	-7.4	-2.9	-7.9	-18.4
Consumer Price Index Inflation (GBA) (%)	b	0.7	-1.8	-0.7	-1.5	41.0
Food and Beverages Price Inflation (GBA) (%)	b	0.3	-5.1	-1.5	-2.1	57.9
Basic Food Basket Price Inflation (GBA) (Oct-Oct) (%)	c	3.5	-7.4	-3.4	-2.2	71.9
Producer Price Index Inflation (%)	d	-6.5	1.1	2.3	-5.6	124.9
Peso/USD Exchange Rate (sell) - end of year	e	1	1	1	1	3.4
Households below the poverty line (GBA) - Oct (%)	c	18.2	18.9	20.8	25.5	42.3
Urban open unemployment (October) (%)	f	12.4	13.8	14,7	18.3	21.7

Sources and Notes:

a: Annual growth calculated from INDEC, http://www.indec.mecon.ar, "Cuadros del Informe de avance del nivel de actividad" [2 April, 2003]

b: Annual inflation, december-to-december, from INDEC, http://www.indec.mecon.ar, for Greater Buenos Aires (GBA)

c: October to October changes from INDEC, "Brecha de la pobreza en el Gran Buenos Aires, desde 1991 en adelante", http://www.indec.mecon.ar [2 April, 2003]

d: Annual inflation, december-to-december, from INDEC, Índice de precios básicos del productor (IPP), http://www.indec.mecon.ar [4 April, 2003]

e: http://www.clarin.com, December 30, 2002

f: Open unemployment as percentage of economically active population, October 2002 figure assumes people in Jefes program are unemployed. "Informacion de Prensa, Mercado de Trabajo: principales indicadores de los aglomerados urbanos, October 2002" and "Tasas de actividad, empleo, desocupacion y subocupacion" http://www.indec.mecon.ar [4 April, 2003]

TABLE 2: PERCENTAGE OF HOUSEHOLDS SUFFERING REAL INCOME DECLINES 1996-2002

	Oct 96 - Oct 97	Oct 97- Oct 98	Oct 98 - Oct 99	Oct 99 - Oct 00	Oct 00 - Oct 01	May 01 - Oct 01	Oct 01 - May 02	Oct 01 - Oct 02
Percentage of Households with								
Negative Real Income Change	49.4	52.0	48.1	52.6	55.8	51.4	77.4	78.4
Real Income Decline of 10% or more	35.3	37.2	39.7	44.5	48.5	42.1	69.2	71.3
Real Income Decline of 20% or more	27.1	28.6	30.6	35.1	37.6	32.1	53.7	62.7
Percentage of Males employed both periods with								
Negative Real Income Change	52.6	55.1	43.5	46.2	49.3	44.1	78.1	80.8
Real Income Decline of 10% or more	33.4	34.2	36.4	40.1	42.8	36.8	68.9	73.2
Real Income Decline of 20% or more	25.3	25.3	26.2	28.7	31.7	26.5	47.2	64.6
Percentage of Females employed both periods with								
Negative Real Income Change	54.5	52.0	39.4	42.8	46.9	42.6	79.3	84.2
Real Income Decline of 10% or more	30.8	29.2	31.1	35.3	40.4	34.2	69.3	75.8
Real Income Decline of 20% or more	23.1	22.3	21.3	25.2	28.9	23.6	43.2	65.9

Notes: own calculations from EPH, various years, for households with heads aged 25-60 years that can be followed for 2 or more periods and for individuals aged 25-60 years who were employed in both periods matched and not in work programs from October 2000 onwards Income is total income from all sources for households, and income from labour for individuals.

TABLE 3: INDIVIDUAL MALE LABOUR INCOME
For males working 25-90 hours per week not in work programs

	Mean Nominal Work Income (pesos/month)					Nominal Change			Real Change		
	Oct 99	Oct 00	Oct 01	May 02	Oct 02	Oct99-Oct00	Oct00-Oct01	Oct01-Oct02	Oct99-Oct00	Oct00-Oct01	Oct01-Oct02
All males aged 25-60	727	719	695	675	676	-1.1	-3.4 *	-2.7	-0.4	-2.3	-29.7 *
By region											
Greater Buenos Aires	934	964	957	870	897	3.2	-0.8	-6.2	4.0	0.3	-32.3 *
NorthWest	605	550	555	526	524	-9.0 *	0.9	-5.5	-8.4 *	2.0	-31.8 *
NorthEast	565	541	514	484	534	-4.3	-4.9	3.8	-3.6	-3.8	-25.0 *
Cuyo	673	609	585	566	574	-9.5 *	-3.9	-1.8	-8.9 *	-2.8	-29.1 *
Pampeana	689	683	646	632	657	-0.9	-5.4 *	1.7	-0.2	-4.3	-26.6 *
Patagonica	1013	985	956	991	992	-2.8	-2.9	3.8	-2.1	-1.8	-25.1 *
By male wage income quintile											
Quintile 1	236	230	222	220	221	-2.4 *	-3.3 *	-0.6	-1.8 *	-2.2 *	-28.3 *
Quintile 2	392	377	378	377	377	-3.7 *	0.3	-0.3	-3.1 *	1.4 *	-28.0 *
Quintile 3	541	525	525	524	525	-3.0 *	0.0	0.1	-2.4 *	1.1 *	-27.7 *
Quintile 4	826	825	825	763	766	-0.1	-0.1	-7.1 *	0.6	1.1 *	-32.9 *
Quintile 5	1899	1920	1895	1665	1641	1.1	-1.3	-13.4 *	1.8	-0.2	-37.5 *
By industry											
Primary Activities	947	1001	1025	1039	982	5.7	2.4	-4.2	6.4	3.6	-30.8 *
Manufacturing	689	678	667	660	662	-1.6	-1.6	-0.7	-1.0	-0.5	-28.3 *
Construction	489	460	453	426	451	-6.0	-1.6	-0.5	-5.3	-0.5	-28.1 *
Commerce	659	610	569	536	554	-7.5 *	-6.7 *	-2.7	-6.8 *	-5.6	-29.7 *
Restaurants & Hotels	569	558	558	485	462	-1.9	0.0	-17.3 *	-1.2	1.1	-40.3 *
Transport	674	663	630	585	597	-1.6	-4.9	-5.3	-1.0	-3.9	-31.6 *
Financial Services	1157	1274	1138	1177	1021	10.1	-10.7	-10.2	10.9	-9.7	-35.2 *
Public administration & defense	854	864	838	800	823	1.2	-3.0	-1.9	1.9	-1.9	-29.1 *
Education	770	844	749	704	715	9.7	-11.3 *	-4.5	10.5	-10.3	-31.0 *
Health	1153	1190	1258	1001	1092	3.2	5.7	-13.2	3.9	6.9	-37.3 *
Social Services	713	700	709	663	664	-1.8	1.2	-6.3	-1.1	2.3	-32.3 *
By education											
Primary	476	453	450	426	427	-4.8 *	-0.6	-5.1 *	-4.1 *	0.5	-31.5 *
Secondary	684	675	632	603	625	-1.3	-6.4	-1.1	-0.6	-5.3 *	-28.6 *
Tertiary	1267	1246	1189	1135	1118	-1.7	-4.5	-6.0 *	-1.0	-3.4	-32.1 *
By occupation											
Wage or Salary worker	711	713	699	680	689	0.4	-2.1	-1.3	1.1	-1.0	-28.8 *
Self-employed	599	571	535	507	498	-4.6	-6.4 *	-7.0 *	-4.0	-5.3	-32.8 *
Boss or Manager	1447	1424	1311	1357	1371	-1.6	-8.0	4.6	-0.9	-6.9	-24.5 *
By job tenure											
less than 6 months	442	464	409	420	403	4.9	-11.8 *	-1.5	5.6	-10.8 *	-28.9 *
less than 1 year	497	527	470	458	447	6.1	-10.8 *	-5.0	6.9 *	-9.8 *	-31.4 *
more than 1 year	785	767	745	719	727	-2.2	-3.0 *	-2.4	-1.5	-1.8	-29.5 *
By age											
15-19 years	260	252	224	201	206	-3.1	-11.3 *	-7.9	-2.4	-10.3 *	-33.5 *
20-24 years	400	375	371	355	358	-6.1 *	-1.2	-3.4	-5.4 *	-0.1	-30.3 *
25-34 years	591	583	573	553	541	-1.3	-1.7	-5.5 *	-0.6	-0.6	-31.8 *
35-44 years	789	782	730	718	699	-1.0	-6.6 *	-4.2	-0.3	-5.6 *	-30.8 *
45-54 years	832	801	784	758	797	-3.7	-2.2	1.6	-3.0	-1.1	-26.6 *
55-64 years	746	769	763	732	742	3.1	-0.8	-2.6	3.8	0.3	-29.7 *
65+ years	678	713	583	608	557	5.1	-18.3 *	-4.5	5.9	-17.3 *	-31.0 *

Source: own calculations from EPH for individuals aged 25-60 years with monthly income from work of 10,000 pesos or less
Real Changes uses CPI for Greater Buenos Aires
Unweighted, and excludes individuals reporting partial or zero income, non-responses, and unpaid workers.
* indicates that change is statistically different from zero at the 5% significance level according to a Welch test.

TABLE 4: INDIVIDUAL FEMALE LABOUR INCOME
For females working 25-90 hours per week not in work programs

	Mean Nominal Work Income (pesos/month)					Nominal Change			Real Change		
	Oct 99	Oct 00	Oct 01	May 02	Oct 02	Oct99-Oct00	Oct00-Oct01	Oct01-Oct02	Oct99-Oct00	Oct00-Oct01	Oct01-Oct02
All females aged 25-60	584	588	578	572	571	0.8	-1.7	-1.3	1.5	-0.6	-28.7 *
By region											
Greater Buenos Aires	750	762	770	740	729	1.7	1.0	-5.3	2.4	2.1	-31.6 *
NorthWest	482	456	483	464	476	-5.3	5.8	-1.5	-4.6	7.0	-28.8 *
NorthEast	457	457	466	426	479	0.0	2.1	2.6	0.7	3.3	-25.9 *
Cuyo	541	532	510	513	507	-1.8	-4.2	-0.5	-1.1	-3.1	-28.2 *
Pampeana	543	551	529	529	544	1.6	-4.2	2.9	2.3	-3.1	-25.7 *
Patagonica	833	823	766	799	795	-1.2	-6.9	3.8	-0.5	-5.9	-25.0 *
By female wage income quintile											
Quintile 1	182	176	169	172	172	-3.5 *	-3.7 *	1.7	-2.8 *	-2.6	-26.6 *
Quintile 2	317	320	317	310	316	1.1 *	-1.0 *	-0.4	1.8 *	0.2	-28.1 *
Quintile 3	444	447	442	442	446	0.7	-1.2 *	1.0 *	1.5 *	-0.1	-27.1 *
Quintile 4	670	668	673	670	675	-0.4	0.8	0.3	0.3	1.9 *	-27.6 *
Quintile 5	1389	1370	1413	1393	1397	-1.4	3.1	-1.1	-0.7	4.3	-28.6 *
By industry											
Manufacturing	506	516	511	518	486	2.0	-1.0	-4.9	2.7	0.2	-31.3 *
Commerce	465	449	435	411	413	-3.4	-3.1	-5.0	-2.7	-2.0	-31.4 *
Restaurants & Hotels	456	420	359	380	401	-7.9	-14.6	11.8	-7.2	-13.6	-19.3 *
Financial Services	947	994	1041	934	851	4.9	4.7	-18.3 *	5.7	5.9	-41.0 *
Public administration & defense	760	814	777	800	751	7.1 *	-4.5	-3.4	7.9 *	-3.4	-30.3 *
Education	697	684	676	650	652	-1.9	-1.1	-3.6	-1.2	0.0	-30.4 *
Health	638	670	653	634	640	5.0	-2.6	-2.0	5.8	-1.4	-29.2 *
Social Services	588	591	550	589	564	0.5	-7.0	2.5	1.2	-5.9	-26.0 *
Domestic Services	280	272	265	247	246	-2.7	-2.5	-7.2 *	-2.1	-1.4	-33.0 *
By education											
Primary	341	329	313	300	308	-3.5	-4.7	-1.6	-2.8	-3.6	-29.0 *
Secondary	499	494	482	485	475	-1.0	-2.4	-1.4	-0.3	-1.3	-28.8 *
Tertiary	849	863	837	813	805	1.6	-3.0	-3.8	2.3	-1.9	-30.5 *
By occupation											
Wage or Salary worker	583	590	587	587	575	1.2	-0.5	-2.0	1.9	0.6	-29.3 *
Self-employed	488	501	451	419	437	2.6	-9.9	-3.2	3.3	-8.9	-30.1 *
Boss or Manager	1128	1041	1080	1005	1222	-7.7	3.8	13.1	-7.1	5.0	-18.3
By job tenure											
less than 6 months	372	378	329	385	322	1.7	-13.0	-2.3	2.4	-12.0	-29.4 *
less than 1 year	398	416	364	396	358	4.6	-12.5 *	-1.8	5.3	-11.5 *	-29.1 *
more than 1 year	627	629	622	600	610	0.4	-1.2	-2.0	1.1	-0.1	-29.2 *
By age											
15-19 years	230	235	178	198	204	2.1	-24.2 *	14.7	2.8	-23.4 *	-17.2 *
20-24 years	359	357	328	322	302	-0.4	-8.2 *	-7.9 *	0.3	-7.1 *	-33.5 *
25-34 years	520	530	510	508	485	2.0	-3.7	-5.0	2.7	-2.6	-31.4 *
35-44 years	620	621	615	608	616	0.2	-1.0	0.1	0.9	0.1	-27.7 *
45-54 years	632	624	607	612	629	-1.2	-2.7	3.6	-0.5	-1.6	-25.2 *
55-64 years	515	544	561	519	526	5.6	3.2	-6.2	6.4	4.4	-32.3 *
65+ years	444	399	532	447	378	-10.1	33.3	-28.9	-9.5	34.9	-48.7 *

Source: own calculations from EPH for individuals aged 25-60 years with monthly income from work of 10,000 pesos or less
Real Changes uses CPI for Greater Buenos Aires
Unweighted, and excludes individuals reporting partial or zero income, non-responses, and unpaid workers
* indicates that change is statistically different from zero at the 5% significance level according to a Welch test.

TABLE 5: DIFFERENTIAL INCOME AND EMPLOYMENT CHANGES

	OLS Regression of Change in Log Income				Probit of Prob. Lose Job/Exit Workforce				Probit of Prob. Gain Job/Enter Workforce			
	Males		Females		Males		Females		Males		Females	
	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
May 02 dummy variable	0.068	(0.73)	0.045	(0.25)	-0.038	(1.27)	0.007	(0.12)	-0.107	(3.29)**	-0.006	(0.24)
Interactions with May02 dummy												
Manufacturing	0.047	(0.92)	-0.063	(0.41)	0.024	(0.92)	-0.008	(0.18)				
Construction	-0.077	(1.43)	-0.130	(0.62)	0.067	(2.36)*						
Commerce	0.029	(0.57)	-0.040	(0.27)	0.029	(1.12)	-0.005	(0.09)				
Restaurants & hotels	0.044	(0.63)	-0.114	(0.71)	-0.008	(0.25)	-0.019	(0.42)				
Transport	-0.036	(0.69)	-0.089	(0.55)	0.017	(0.65)	0.003	(0.06)				
Financial Services	-0.032	(0.45)	-0.174	(1.09)	0.007	(0.16)						
Public Admin. & Defence	-0.031	(0.51)	-0.098	(0.64)	0.104	(2.61)**	0.018	(0.31)				
Education	0.011	(0.16)	-0.072	(0.47)	0.105	(2.18)*	0.028	(0.46)				
Health	-0.100	(1.54)	-0.114	(0.75)	-0.018	(0.49)	0.003	(0.06)				
Social Services	0.021	(0.35)	-0.111	(0.70)	0.013	(0.42)	0.001	(0.03)				
Domestic Services	-0.008	(0.05)	-0.139	(0.91)	0.081	(1.53)	0.001	(0.02)				
Age 20-24	-0.129	(1.60)	0.106	(1.05)	0.023	(0.84)	0.012	(0.43)	-0.023	(1.25)	0.022	(1.42)
Age 25-34	-0.118	(1.54)	0.072	(0.73)	0.049	(1.77)	0.034	(1.15)	-0.020	(1.02)	0.047	(2.97)**
Age 35-44	-0.119	(1.54)	0.061	(0.62)	0.047	(1.69)	0.028	(0.97)	-0.030	(1.33)	0.048	(3.01)**
Age 45-54	-0.128	(1.64)	0.073	(0.74)	0.043	(1.52)	0.003	(0.13)	-0.004	(0.16)	0.030	(1.85)
Age 55-65	-0.139	(1.74)	0.047	(0.46)	0.032	(1.09)	0.049	(1.38)	0.009	(0.38)	-0.007	(0.42)
Self-employed	0.035	(1.27)	0.040	(1.07)	0.010	(0.89)	0.004	(0.37)				
Manager or Boss	-0.086	(2.09)*	-0.065	(0.96)	0.027	(1.19)	-0.034	(1.14)				
Secondary Education	0.001	(0.03)	-0.054	(1.94)	-0.002	(0.28)	0.010	(1.01)	0.031	(1.88)	0.005	(0.58)
Tertiary Education	0.017	(0.62)	-0.064	(1.97)*	0.003	(0.21)	0.035	(2.34)*	0.023	(1.02)	0.002	(0.16)
Firm has 6-50 employees	-0.003	(0.13)	-0.007	(0.21)	0.010	(0.92)	-0.018	(1.73)				
Firm has >50 employees	-0.004	(0.14)	0.010	(0.29)	-0.010	(0.75)	-0.027	(2.22)*				
Public Firm	0.057	(1.54)	0.031	(0.97)	-0.070	(5.29)**	-0.035	(3.50)**				
NorthWest	-0.013	(0.47)	0.022	(0.64)	0.014	(1.05)	-0.005	(0.42)	-0.008	(0.39)	-0.014	(1.21)
NorthEast	-0.047	(1.36)	-0.008	(0.21)	0.018	(1.09)	-0.018	(1.36)	0.053	(2.04)*	0.024	(1.67)
Cuyo	0.021	(0.64)	0.088	(2.11)*	0.004	(0.23)	-0.021	(1.60)	-0.001	(0.03)	0.011	(0.75)
Pampeana	-0.016	(0.58)	-0.062	(1.90)	0.007	(0.55)	-0.004	(0.33)	0.017	(0.79)	-0.010	(0.88)
Patagonica	0.011	(0.36)	-0.022	(0.61)	0.034	(2.04)*	-0.007	(0.48)	-0.011	(0.42)	-0.009	(0.67)
Income quintile 2	0.011	(0.42)	0.026	(0.67)	-0.008	(0.77)	-0.019	(2.04)*	-0.030	(1.83)	-0.009	(0.93)
Income quintile 3	0.010	(0.37)	-0.000	(0.00)	-0.001	(0.10)	0.005	(0.42)	-0.002	(0.11)	-0.011	(0.97)
Income quintile 4	0.025	(0.86)	0.043	(1.14)	0.000	(0.02)	-0.008	(0.68)	-0.008	(0.35)	-0.011	(0.83)
Income quintile 5	0.004	(0.12)	0.009	(0.22)	-0.001	(0.05)	-0.004	(0.24)	0.030	(0.99)	0.005	(0.30)
Change in log hours	0.037	(1.19)	-0.045	(1.20)								
Change job	-0.084	(2.67)**	0.017	(0.37)								
Log household size									0.048	(2.60)**	-0.014	(1.26)
Number of Children in household									-0.007	(1.23)	-0.002	(0.46)
Observations	16881		9302		25703		16690		20429		37592	

Notes: absolute value of t-statistics in parentheses. * and ** indicate significance at 5% and 1% respectively.
OLS regression and probits run over period October 2000-May 2002, for individuals aged 15-65. OLS regression of change in nominal income is for individuals working 25-90 hours in both periods, and not in workprograms.
Standardized coefficients are reported for the probit, giving the change in probability for an infinitesimal change in each continuous variable, and the discrete change in the probability for the dummy variables.
Levels of all variables are included in addition to the interactions in each specification.
Baseline categories are the industry of primary activities, age 15-19, wage or salary worker, primary education, Greater Buenos Aires region, and income quintile 1 except for Female job exits where construction is the base industry (and financial services and primary activities are omitted).

TABLE 6: RELATIVE CHANGES IN EMPLOYMENT: MAY01-OCT01 COMPARED TO OCT01-MAY02

	Males						Females					
	May 01	Oct 01	May 02	Welch p-value	DD	Wald test p-value	May 01	Oct 01	May 02	Welch p-value	DD	Wald test p-value
Workforce Participation												
Age 25-60	0.802	0.776	0.735	0.000	-0.016	0.048	0.493	0.484	0.465	0.000	-0.011	0.238
Age 15-24	0.334	0.314	0.271	0.000	-0.024	0.065	0.193	0.186	0.161	0.000	-0.017	0.102
Age 61-70	0.383	0.371	0.364	0.630	0.005	0.848	0.157	0.148	0.156	0.374	0.018	0.279
Age 25-60 in wage/salary work	0.547	0.521	0.494	0.000	-0.002	0.847	0.378	0.374	0.360	0.004	-0.011	0.222
Age 25-60 in self-employment	0.204	0.208	0.201	0.139	-0.010	0.187	0.094	0.091	0.088	0.316	0.000	0.971
Proportion of Unemployed Gaining Job												
Age 25-60	0.402	0.340	0.289	0.000	0.012	0.639	0.162	0.135	0.142	0.238	0.034	0.002
Age 25-60 in wage work with benefits	0.085	0.068	0.050	0.009	-0.002	0.875	0.037	0.024	0.025	0.745	0.014	0.007
Age 25-60 in wage work without benefits	0.131	0.099	0.091	0.398	0.025	0.131	0.064	0.058	0.056	0.661	0.004	0.582
Age 25-60 in self-employment	0.173	0.157	0.134	0.034	-0.007	0.713	0.051	0.046	0.052	0.093	0.012	0.082
Proportion of Entrants into:												
Primary Activities	0.020	0.045	0.037	0.472	-0.034	0.049	0.013	0.007	0.005	0.630	0.004	0.613
Manufacturing	0.113	0.109	0.131	0.220	0.026	0.389	0.110	0.114	0.146	0.060	0.028	0.338
Construction	0.294	0.308	0.235	0.003	-0.087	0.041	0.007	0.004	0.001	0.283	0.000	0.997
Commerce	0.179	0.148	0.170	0.284	0.052	0.139	0.222	0.266	0.219	0.029	-0.092	0.014
Financial Services	0.011	0.015	0.006	0.118	-0.013	0.193	0.010	0.001	0.005	0.205	0.013	0.060
Public administration & defense	0.045	0.041	0.065	0.048	0.028	0.168	0.028	0.041	0.028	0.180	-0.025	0.101
Social Services	0.032	0.038	0.044	0.594	0.000	0.993	0.037	0.031	0.041	0.325	0.015	0.363
Domestic Services	0.014	0.015	0.009	0.344	-0.007	0.518	0.256	0.266	0.269	0.903	-0.008	0.842
Proportion of employed losing job												
Age 25-60	0.104	0.114	0.148	0.000	0.024	0.008	0.160	0.161	0.186	0.001	0.023	0.064
by Occupation:												
Wage & Salary Work	0.084	0.095	0.114	0.001	0.008	0.421	0.132	0.128	0.149	0.004	0.026	0.045
Self-employed	0.165	0.177	0.236	0.000	0.046	0.031	0.257	0.279	0.317	0.053	0.016	0.638
by Industry:												
Primary Activities	0.128	0.078	0.129	0.068	0.102	0.047	.	.	.	.		
Manufacturing	0.096	0.122	0.128	0.672	-0.020	0.393	0.273	0.270	0.268	0.948	0.001	0.981
Construction	0.230	0.240	0.364	0.000	0.113	0.001	.	.	.	.		
Commerce	0.090	0.101	0.138	0.003	0.026	0.213	0.234	0.213	0.313	0.000	0.120	0.001
Financial Services	0.077	0.047	0.090	0.126	0.074	0.149	0.043	0.120	0.063	0.139	-0.136	0.032
Public administration & defense	0.032	0.058	0.041	0.062	-0.043	0.004	0.047	0.052	0.040	0.296	-0.018	0.380
Social Services	0.073	0.062	0.109	0.033	0.058	0.124	0.164	0.190	0.210	0.632	-0.005	0.950
Domestic Services	0.196	0.196	0.279	0.362	0.083	0.584	0.252	0.238	0.274	0.059	0.050	0.131

notes: own calculations from October 2000-May 2002 EPH
. Denotes less than 30 observations in this category
DD denotes difference-in-difference (May02-Oct01) - (Oct01-May01)
Welch test p-value is for test that October 2001 proportion equals May 2002 proportion
Wald test p-value is for test that difference-in-differences is zero.

TABLE 7: CHANGES IN HOURS WORK BY INDIVIDUAL ATTRIBUTES

Panel A: Male Workers

					Oct01-May02 Change in		Oct01-May02 Mean		Proportion who have looked to work more hours than they currently are				Oct01-May02 Change in	
	May 01	Oct 01	May 02	Oct 02	mean	p-value	Change	p-value	May 01	Oct 01	May 02	Oct 02	mean	p-value
All workers														
Age 25-55	48.9	48.0	46.3	46.6	-1.6	0.000			0.28	0.28	0.30	0.29	0.02	0.000
Age 15-24	43.5	41.5	40.8	41.3	-0.7	0.252			0.30	0.34	0.35	0.33	0.01	0.526
Age 56-65	45.6	45.9	44.8	44.6	-1.2	0.118			0.26	0.22	0.25	0.25	0.03	0.052
All workers 25-55 by Industry														
Primary Activities	58.1	55.9	54.0	54.3	-1.9	0.261			0.18	0.19	0.23	0.21	0.04	0.195
Manufacturing	49.1	48.2	46.6	46.9	-1.6	0.008			0.28	0.30	0.32	0.29	0.02	0.179
Construction	43.4	42.7	39.0	40.1	-3.7	0.000			0.43	0.42	0.51	0.50	0.09	0.000
Commerce	53.7	52.8	51.5	51.8	-1.4	0.022			0.21	0.20	0.23	0.23	0.03	0.024
Financial Services	48.3	46.9	46.6	47.4	-0.3	0.777			0.14	0.16	0.11	0.16	-0.05	0.140
Public administration & defense	44.9	44.9	44.5	43.9	-0.4	0.494			0.21	0.20	0.20	0.19	-0.01	0.715
Social Services	44.8	43.1	44.2	43.1	1.2	0.327			0.31	0.29	0.30	0.30	0.01	0.786
Domestic Services	27.3	30.3	25.1	26.8	-5.2	0.171			0.58	0.59	0.67	0.63	0.09	0.326
Matched Sample aged 25-55														
In same wage/salary work both periods	48.6	48.1	47.1	47.3	-1.0	0.007	-0.96	0.000	0.22	0.23	0.22	0.20	-0.01	0.456
In same self-employment both periods	48.5	46.8	46.2	47.2	-0.7	0.487	-0.89	0.051	0.34	0.36	0.41	0.34	0.05	0.029
Individuals Changing Jobs	47.9	46.0	42.1	42.8	-3.9	0.002	-1.73	0.013	0.39	0.40	0.48	0.45	0.08	0.007
New entrants to wage work	44.9	42.5	40.2	41.7	-2.3	0.132			0.37	0.36	0.41	0.42	0.05	0.243
New entrants to self-employment	37.2	37.2	33.4	35.2	-3.8	0.050			0.57	0.55	0.60	0.58	0.05	0.218

Panel B: Female Workers

					Oct01-May02 Change in		Oct01-May02 Mean		Proportion who have looked to work more hours than they currently are				Oct01-May02 Change in	
	May 01	Oct 01	May 02	Oct 02	mean	p-value	Change	p-value	May 01	Oct 01	May 02	Oct 02	mean	p-value
All workers														
Age 25-55	37.2	36.5	35.2	36.3	-1.3	0.000			0.27	0.27	0.29	0.27	0.02	0.007
Age 15-24	35.7	34.6	33.4	33.9	-1.2	0.103			0.28	0.30	0.36	0.29	0.05	0.003
Age 56-65	37.1	36.7	35.5	36.4	-1.2	0.239			0.24	0.22	0.24	0.23	0.02	0.258
All workers 25-55 by Industry														
Primary Activities	45.4	45.2	45.7	42.9	0.5	0.890			0.28	0.15	0.17	0.19	0.02	0.861
Manufacturing	40.0	39.9	35.4	39.4	-4.5	0.000			0.32	0.28	0.33	0.32	0.04	0.125
Construction	41.8	41.5	36.5	37.0	-5.0	0.193			0.24	0.26	0.23	0.31	-0.03	0.785
Commerce	49.2	48.9	46.3	48.8	-2.6	0.006			0.20	0.18	0.20	0.16	0.01	0.389
Financial Services	42.4	44.0	43.7	43.7	-0.3	0.803			0.14	0.07	0.13	0.09	0.06	0.105
Public administration & defense	38.0	36.7	37.7	37.0	1.0	0.060			0.16	0.17	0.17	0.15	0.00	0.847
Social Services	35.8	37.5	35.6	37.5	-1.9	0.279			0.26	0.27	0.33	0.28	0.05	0.204
Domestic Services	29.2	28.5	27.5	28.5	-0.9	0.187			0.44	0.44	0.48	0.47	0.04	0.039
Matched Sample aged 25-55														
In same wage/salary work both periods	36.4	35.6	35.5	35.3	-0.1	0.813	-0.56	0.002	0.22	0.24	0.25	0.21	0.01	0.496
In same self-employment both periods	45.1	44.7	44.3	42.8	-0.4	0.834	-0.65	0.336	0.31	0.30	0.31	0.33	0.01	0.736
Individuals Changing Jobs	35.8	34.8	30.3	33.9	-4.6	0.009	-2.31	0.010	0.38	0.38	0.42	0.37	0.04	0.292
New entrants to wage work	31.2	29.4	28.7	29.6	-0.7	0.581			0.38	0.42	0.43	0.43	0.01	0.741
New entrants to self-employment	34.0	33.2	27.1	31.9	-6.1	0.005			0.43	0.47	0.47	0.47	0.00	0.970

source: own calculations from EPH October 2000-2002

Hours are total hours in all jobs for workers working 1-120 hours per week and who are not in work programs

T-test tests mean change is zero, Welch test tests for equality of means in October 2001 and May 2002

Mean change in hours worked is for individuals with an absolute change in hours of 30 hours per week or less.

TABLE 8: CHANGES IN TOTAL HOUSEHOLD LABOUR HOURS AND HOUSEHOLD SIZE

	Full Sample					Welch test p-values		Proportion of Matched Sample with Increase			
	Oct 00	May 01	Oct 01	May 02	Oct 02	A	B	Oct00-May01	May01-Oct01	Oct01-May02	May02-Oct02
Total Household Labour Hours/Week											
Overall	61.2	60.9	57.8	52.6	55.3	0.000	0.000	0.43	0.38	0.35	0.44
Quintile 1	42.9	45.6	43.6	35.5	35.2	0.000	0.000	0.48	0.42	0.40	0.54
Quintile 2	58.3	61.2	56.5	53.6	53.1	0.003	0.000	0.46	0.38	0.34	0.46
Quintile 3	67.2	67.4	63.9	58.4	60.9	0.000	0.000	0.42	0.36	0.33	0.42
Quintile 4	70.3	71.4	67.6	61.2	64.8	0.000	0.000	0.41	0.34	0.34	0.39
Quintile 5	70.2	70.3	68.3	66.7	67.2	0.166	0.002	0.40	0.37	0.34	0.36
Total Household Size											
Overall	4.1	4.1	4.1	4.1	4.1	0.558	0.147	0.09	0.08	0.09	0.07
Quintile 1	5.4	5.4	5.5	5.3	5.3	0.036	0.039	0.12	0.10	0.11	0.09
Quintile 2	4.5	4.4	4.3	4.5	4.6	0.000	0.064	0.09	0.08	0.10	0.09
Quintile 3	4.0	3.8	3.9	3.8	4.0	0.018	0.000	0.08	0.07	0.09	0.08
Quintile 4	3.4	3.3	3.3	3.2	3.4	0.032	0.000	0.08	0.08	0.08	0.06
Quintile 5	2.7	2.6	2.6	2.7	2.7	0.406	0.521	0.07	0.06	0.08	0.06

source: own calculations from EPH for households with heads aged 25-60.
Quintile is per capita household income quintile. For matched sample, quintile is per capita income quintile in initial period.
Welch test for equality of means is for test of A) Mean in May02 = Mean in Oct 01; and B) Mean in May02 = Mean over all observations Oct00-Oct01

TABLE 9: CHANGES IN THE SOURCE OF TOTAL HOUSEHOLD INCOME BY QUINTILE
For Households with Heads Aged 30-50 years

	Lowest quintile					*Middle quintile*					*Upper quintile*				
	mean % share			*Welch p-value for equal to Oct 01*		*mean % share*			*Welch p-value for equal to Oct 01*		*mean % share*			*Welch p-value for equal to Oct 01*	
Source of income	Oct 01	May 02	Oct 02	May 02	Oct 02	Oct 01	May 02	Oct 02	May 02	Oct 02	Oct 01	May 02	Oct 02	May 02	Oct 02
Wages of males employed in previous survey	15.1	8.6	6.1	0.00	0.00	44.1	42.7	42.3	0.43	0.35	47.0	47.0	46.0	0.95	0.52
Wages of males newly employed	2.6	1.6	1.4	0.15	0.10	2.1	2.5	2.1	0.44	0.90	1.0	1.0	1.4	0.95	0.29
Wages of females employed in previous survey	12.8	10.0	8.7	0.09	0.01	19.0	18.8	17.4	0.93	0.29	26.2	26.7	26.2	0.63	0.97
Wages of females newly employed	4.5	4.8	3.5	0.84	0.32	1.3	1.8	1.7	0.19	0.21	0.7	1.0	0.8	0.22	0.63
Income from Self-employment	36.2	39.4	22.6	0.21	0.00	19.4	17.9	19.1	0.29	0.80	12.1	12.3	12.0	0.83	0.91
- from males employed in previous survey	18.1	18.0	10.6	0.98	0.00	13.5	11.5	12.3	0.11	0.34	8.7	8.8	8.6	0.97	0.87
- from newly self-employed males	4.1	5.3	3.9	0.28	0.88	1.5	1.5	2.5	0.99	0.05	0.3	0.4	0.3	0.59	0.76
- from females employed in previous survey	6.5	5.3	2.7	0.32	0.00	2.4	2.7	2.7	0.67	0.64	2.7	2.9	2.5	0.72	0.64
- from newly self-employed females	2.9	2.7	2.3	0.76	0.46	0.6	0.8	0.9	0.59	0.29	0.2	0.2	0.5	0.89	0.05
Income from earnings as a boss/manager	0.6	0.0	0.3	0.03	0.37	1.3	0.9	1.5	0.27	0.70	5.8	5.5	6.8	0.71	0.22
Retirement income	5.1	3.7	3.9	0.17	0.26	4.0	4.6	4.3	0.42	0.71	3.1	3.1	3.4	0.97	0.50
- from already retired members	3.1	2.5	2.4	0.43	0.39	3.3	4.0	3.6	0.26	0.70	2.6	2.6	3.0	0.97	0.47
- from newly retired members	2.0	1.2	1.5	0.23	0.46	0.7	0.6	0.8	0.51	0.96	0.5	0.5	0.5	0.85	0.98
Rent and Interest income	0.8	0.2	0.0	0.07	0.01	0.9	0.3	0.3	0.02	0.03	0.5	0.5	0.3	0.75	0.25
Unemployment Insurance	0.1	1.2	0.2	0.02	0.91	0.6	1.3	1.0	0.03	0.14	0.1	0.1	0.2	0.34	0.11
Severance Pay	0.1	0.1	0.0	0.56	0.32	0.2	0.4	0.2	0.39	0.93	0.1	0.1	0.1	0.59	0.90
Transfers from non-household members	8.1	8.7	5.5	0.72	0.04	2.0	2.3	1.4	0.57	0.23	0.7	0.4	0.9	0.17	0.56
Other	3.7	10.0	7.7	0.00	0.00	1.5	2.0	2.4	0.27	0.06	0.7	0.5	0.3	0.49	0.03
Income to males from work programs	2.3	3.2	16.3	0.28	0.00	0.9	0.9	0.7	0.98	0.60	0.3	0.2	0.1	0.51	0.05
Income to females from work programs	3.4	5.9	21.8	0.03	0.00	0.7	1.7	3.5	0.00	0.00	0.4	0.2	0.3	0.14	0.24
Mean Total income (current pesos/month)	177	122	103			493	428	460			1709	1588	1690		
Median total income (current pesos/month)	150	100	145			480	410	450			1486	1300	1400		
Number of observations	1919	1704	762			2448	2210	1022			2604	2491	1217		

Source: own calculations from EPH, for households which can be followed two or more periods, and dropping top and bottom 1% of income changes as outliers
Quintile is total household income quintile in period listed.

TABLE 10: DECOMPOSITION OF CHANGE IN HOUSEHOLD LABOUR INCOME
Panel A: All households working 25 hours or more a week in initial period

	NOMINAL INCOME CHANGE								REAL INCOME CHANGE	
	Mean over Households with absolute relative income change <100%				Mean over Households in middle 50% of relative income changes					
	Oct00-May01	May01-Oct01	Oct01-May02	May02-Oct02	Oct00-May01	May01-Oct01	Oct01-May02	May02-Oct02	Oct01-May02	May02-Oct02
Mean Change in Household Monthly Labour Income	-73.8	-80.4	-122.1	-19.6	-46.5	-62.6	-105.9	25.0	-258.3	-80.5
(number of observations)	6588	6738	6072	5799	3507	3699	3377	3239	3377	3239
Mean Income Changes in the Same Job										
Males in all jobs	-29.99 *	-31.05 *	-33.50 *	0.35	-27.55 *	-33.60 *	-48.67 *	13.21 *	-133.74 *	-46.88 *
from change in male wages	-49.73 *	-38.64 *	-30.95 *	-17.11 *	-46.83 *	-43.89 *	-45.63 *	-5.88	-130.65 *	-63.03 *
from change in male hours	19.74 *	7.59 *	-2.55 *	17.46 *	19.28 *	10.29 *	-3.04	19.09 *	-3.08	16.15 *
Females in all jobs	-5.94 *	-12.28 *	-10.14 *	1.01	-8.48 *	-13.02 *	-16.17 *	5.52 *	-59.13 *	-24.08 *
from change in female wages	-16.35 *	-16.26 *	-14.05 *	-6.90 *	-20.55 *	-18.42 *	-17.38 *	-4.60	-60.36 *	-32.64 *
from change in female hours	10.42 *	3.98 *	3.91 *	7.91 *	12.07 *	5.40 *	1.21	10.12 *	1.23	8.57 *
Males wage & salary workers	-10.86 *	-16.89 *	-19.81 *	3.28	-19.97 *	-25.22 *	-35.13 *	10.80 *	-105.04 *	-37.90 *
from change in male wages	-23.44 *	-24.69 *	-20.05 *	-8.03 *	-35.11 *	-36.26 *	-35.49 *	-4.79	-105.40 *	-51.09 *
from change in male hours	12.59 *	7.81 *	0.24	11.31 *	15.13 *	11.04 *	0.36	15.59 *	0.36	13.19 *
Females wage & salary workers	-2.82	-9.46 *	-6.04 *	0.19	-5.96 *	-10.59 *	-13.94 *	4.58 *	-53.10 *	-22.43 *
from change in female wages	-10.89 *	-11.58 *	-8.87 *	-6.25 *	-13.60 *	-13.96 *	-14.29 *	-4.22	-53.46 *	-29.88 *
from change in female hours	8.07 *	2.12	2.83	6.44 *	7.64 *	3.37	0.35	8.80 *	0.36	7.44 *
Males self-employed workers	-12.49 *	-6.54 *	-10.88 *	-3.04 *	-4.66 *	-5.28 *	-8.99 *	1.47	-18.90 *	-4.26 *
from change in male wages	-16.94 *	-5.99 *	-9.19 *	-7.73 *	-7.96 *	-5.65 *	-7.26 *	-1.54	-17.14 *	-6.81 *
from change in male hours	4.45 *	-0.54	-1.69	4.69 *	3.30 *	0.37	-1.73	3.01 *	-1.76	2.55 *
Females self-employed workers	-2.37 *	-2.71 *	-2.40 *	-0.30	-1.39 *	-2.04 *	-1.76 *	-0.26	-4.49 *	-1.78 *
from change in female wages	-4.52 *	-3.92 *	-3.36 *	-1.36 *	-5.67 *	-3.28 *	-2.27 *	-1.63	-5.02 *	-2.94 *
from change in female hours	2.15	1.20	0.96	1.07	4.28 *	1.25	0.52	1.38	0.53	1.16
Mean Income Changes from change in job for those still employed in same occupation										
Males in all jobs	-2.05 *	-3.33 *	-5.29 *	-1.98 *	-1.29 *	-1.42 *	-3.54 *	0.44	-6.12 *	-1.47 *
from change in male wages	-4.54 *	-4.95 *	-4.34 *	-5.59 *	-3.60 *	-3.83 *	-2.57 *	-2.69 *	-5.13 *	-4.12 *
from change in male hours	2.49 *	1.62	-0.95	3.60	2.31 *	2.41	-0.98	3.13 *	-0.99	2.65 *
Females in all jobs	-0.74	0.10	-0.81	-0.36	-0.56	0.06	-0.54	0.17	-1.80 *	-0.75 *
from change in female wages	-2.29 *	-0.44	-1.37 *	-1.11 *	-2.08 *	-1.10 *	-0.71	-0.08	-1.97 *	-0.96 *
from change in female hours	1.55 *	0.53	0.55	0.74	1.53 *	1.16 *	0.17	0.25	0.17	0.21
Mean Income Changes from change in Occupation										
Males in all jobs	-12.76 *	-5.12 *	-17.35 *	-4.96 *	-4.29 *	-4.55 *	-10.42 *	0.38	-19.97 *	-4.48 *
from change in male wages	-15.33 *	-8.45 *	-16.05 *	-9.74 *	-8.00 *	-6.02 *	-12.04 *	-3.78	-21.61 *	-8.01 *
from change in male hours	2.57	3.33	-1.30	4.78 *	3.71 *	1.47	1.62	4.17	1.65	3.53
Females in all jobs	-1.11	-1.42	-5.31 *	-1.46	-0.51	0.60	-3.93 *	0.38	-5.81 *	-1.04
from change in female wages	-2.84 *	-2.34	-5.51 *	-2.58 *	-1.27	-0.13	-5.18 *	-0.99	-7.08 *	-2.20 *
from change in female hours	1.73 *	0.92	0.20	1.12	0.76	0.73	1.25	1.37	1.27	1.16
Mean Income change from Labor Force Entrants										
Males	10.09 *	8.01 *	7.51 *	8.14 *	5.67 *	3.84 *	4.04 *	5.93 *	3.22 *	4.18 *
entering wage work	7.53 *	5.65 *	5.37 *	4.89 *	3.25 *	2.95 *	2.96 *	3.36 *	2.39 *	2.35 *
entering self-employment	2.14 *	2.12 *	2.08 *	2.94 *	1.77 *	0.61 *	1.08 *	2.16 *	0.83 *	1.52 *
Females	13.27 *	9.25 *	8.30 *	8.19 *	8.89 *	5.38 *	5.28 *	4.00 *	4.45 *	2.87 *
entering wage work	10.15 *	6.20 *	6.10 *	5.69 *	6.52 *	3.86 *	3.83 *	3.35 *	3.22 *	2.41 *
entering self-employment	3.02 *	2.32 *	2.04 *	2.46 *	2.28 *	1.38 *	1.45 *	0.65 *	1.23 *	0.46 *
Mean Income change from Labor Force Exits										
Males	-22.78 *	-20.58 *	-32.59 *	-17.48 *	-6.79 *	-5.84 *	-11.53 *	-3.27 *	-12.23 *	-3.19 *
exiting wage work	-15.89 *	-13.60 *	-20.23 *	-9.94 *	-4.73 *	-4.06 *	-7.71 *	-1.91 *	-8.09 *	-1.96 *
exiting self-employment	-5.82 *	-5.46 *	-9.13 *	-6.28 *	-1.66 *	-1.76 *	-3.13 *	-1.25 *	-3.45 *	-1.13 *
Females	-18.26 *	-18.16 *	-23.29 *	-14.31 *	-10.23 *	-10.24 *	-14.04 *	-6.30 *	-14.34 *	-5.49 *
exiting wage work	-11.97 *	-12.59 *	-15.41 *	-10.38 *	-7.20 *	-6.88 *	-9.86 *	-4.21 *	-10.09 *	-3.72 *
exiting self-employment	-4.93 *	-4.77 *	-5.46 *	-3.37 *	-2.46 *	-3.15 *	-3.35 *	-2.09 *	-3.41 *	-1.77 *
Mean Income change from joining work plans										
Males	-0.29	-0.15	-0.57 *	0.64 *	0.47	0.07	-0.49	0.76 *	-0.83 *	0.35 *
entering from wage work	-0.71	-0.25	-0.72 *	-0.23	0.14	-0.17	-0.51 *	0.12	-0.72 *	0.01
entering from self-employment	0.06	-0.14	-0.30 *	-0.29 *	0.07	-0.08	-0.26 *	-0.05	-0.35 *	-0.14
entering from unemployment	0.29 *	0.21	0.45 *	1.16 *	0.12	0.27 *	0.27 *	0.68 *	0.23 *	0.49 *
Females	0.56 *	0.06	1.02 *	5.19 *	0.27	-0.01	0.64 *	3.16 *	0.25	2.07 *
entering from wage work	-0.10	-0.36 *	-0.22 *	0.04	-0.04	-0.29	-0.05	0.14	-0.30 *	-0.07
entering from self-employment	0.01	0.01	-0.02	0.10	0.00	0.00	-0.05	0.23 *	-0.07	0.12
entering from unemployment	0.63 *	0.41 *	1.27 *	4.97 *	0.28 *	0.29	0.74 *	2.70 *	0.61 *	1.96 *

Notes:
* indicates that the mean is significantly different from zero at a 5% significance level according to a t-test.
Results are for households with heads aged 25-60, that can be matched for two or more periods.
Source: own calculations from EPH.

DECOMPOSITION OF CHANGE IN HOUSEHOLD LABOUR INCOME
Panel B: For *bottom labour income quintile* for households working 25 hours or more a week in initial period

	NOMINAL INCOME CHANGE							
	Mean over Households with absolute relative income change <100%				Mean over Households in middle 50% of relative income changes			
	Oct00-May01	May01-Oct01	Oct01-May02	May02-Oct02	Oct00-May01	May01-Oct01	Oct01-May02	May02-Oct02
Mean Change in Household Monthly Labour Income	-7.1	-13.7	-34.2	-5.7	-7.8	-9.0	-30.8	-7.3
(number of observations)	1349	1417	1234	1350	750	754	678	691
Mean Income Changes in the Same Job								
Males in all jobs	7.37 *	3.59 *	1.93	5.84 *	16.39 *	2.65	3.88 *	19.40 *
from change in male wages	-0.56	-3.53	1.91	-4.54	11.11 *	-0.71	3.71	16.13 *
from change in male hours	7.93 *	7.13 *	0.01	10.38 *	5.28 *	3.37	0.17	3.27
Females in all jobs	1.54	1.47	0.55	2.71 *	5.13 *	0.79	0.16	6.59 *
from change in female wages	1.10	-4.03 *	0.68	-1.70	6.64 *	-3.28	1.14	4.89 *
from change in female hours	0.44	5.50 *	-0.13	4.40 *	-1.51	4.07	-0.98	1.69
Males wage & salary workers	7.63 *	3.26 *	3.45 *	5.22 *	11.30 *	2.17	3.02 *	12.32 *
from change in male wages	3.75 *	0.88	2.76	3.43 *	8.16 *	3.49	3.01	13.01 *
from change in male hours	3.88 *	2.38	0.69	1.79	3.13	-1.32	0.00	-0.69
Females wage & salary workers	1.49	1.46	0.65	1.87 *	4.39 *	0.67	-0.59	5.02 *
from change in female wages	2.03	-1.88	0.80	-1.29	5.90 *	-0.12	-0.74	3.29 *
from change in female hours	-0.53	3.33 *	-0.15	3.16 *	-1.51	0.79	0.16	1.74
Males self-employed workers	-0.13	0.38	-1.17	0.37	5.12 *	0.48	1.33	6.67 *
from change in male wages	-4.34 *	-4.07 *	-0.95	-8.13 *	2.89	-3.93	0.48	2.84
from change in male hours	4.21 *	4.46 *	-0.22	8.50 *	2.23	4.42	0.85	3.83
Females self-employed workers	0.11	-0.15	-0.07	0.49	0.81	0.07	0.87	1.27 *
from change in female wages	-0.85	-1.57	-0.29	-0.57	0.73	-2.74	1.88 *	1.05
from change in female hours	0.96	1.42	0.22	1.06	0.08	2.81	-1.01 *	0.22
Mean Income Changes from change in job for those still employed in same occupation								
Males in all jobs	1.45	-1.95 *	-1.06	-1.05	3.21 *	0.30	-1.09	0.79
from change in male wages	-4.45 *	-2.98 *	-2.25	-4.48 *	1.57	-0.62	-0.37	-1.87
from change in male hours	5.90 *	1.02	1.18	3.43 *	1.64	0.92	-0.72	2.65
Females in all jobs	-0.19	0.16	-0.48	0.13	0.45	0.36	-0.92	0.88
from change in female wages	-2.76 *	-0.91 *	-0.14	0.05	-1.18	-1.61 *	0.33	0.86
from change in female hours	2.57 *	1.07 *	-0.34	0.09	1.63	1.97 *	-1.25	0.02
Mean Income Changes from change in Occupation								
Males in all jobs	0.89	-1.51	-1.86	1.76	3.41 *	-0.16	-0.40	6.97 *
from change in male wages	-1.29	-2.04	-0.92	-2.05	2.11	-0.39	-1.37	5.20 *
from change in male hours	2.18	0.53	-0.94	3.81	1.30	0.24	0.97	1.77
Females in all jobs	0.96	-0.83	-1.50 *	-0.06	1.46 *	0.21	-0.53	1.75 *
from change in female wages	0.52	-2.00	-0.48	-1.56	1.00	-2.18	1.01	0.49
from change in female hours	0.44	1.17	-1.03	1.50	0.46	2.39	-1.55 *	1.25
Mean Income change from Labor Force Entrants								
Males	8.88 *	5.84 *	6.76 *	6.86 *	6.33 *	5.52 *	5.77 *	5.57 *
entering wage work	6.27 *	3.42 *	3.78 *	2.09 *	4.86 *	3.99 *	2.43 *	1.63 *
entering self-employment	2.61 *	2.06 *	2.99 *	4.77 *	1.47 *	1.26 *	3.33 *	3.94 *
Females	9.73 *	6.54 *	8.42 *	5.81 *	8.41 *	5.17 *	5.83 *	5.96 *
entering wage work	7.98 *	4.37 *	5.82 *	3.94 *	6.38 *	2.99 *	3.70 *	3.81 *
entering self-employment	1.72 *	2.16 *	2.60 *	1.73 *	1.97 *	2.18 *	2.12 *	1.86 *
Mean Income change from Labor Force Exits								
Males	-7.60 *	-10.10 *	-14.82 *	-9.06 *	-2.26 *	-3.40 *	-7.18 *	-2.81 *
exiting wage work	-4.36 *	-4.33 *	-6.33 *	-4.44 *	-1.18	-1.44 *	-2.81 *	-2.06 *
exiting self-employment	-2.95 *	-5.81 *	-8.20 *	-4.43 *	-1.08	-2.03 *	-4.37 *	-0.75
Females	-7.71 *	-6.45 *	-8.98 *	-6.50 *	-4.71 *	-4.25 *	-5.46 *	-3.30 *
exiting wage work	-5.71 *	-4.68 *	-6.79 *	-4.49 *	-3.43 *	-2.89 *	-3.22 *	-1.62 *
exiting self-employment	-2.00 *	-1.74 *	-2.19 *	-2.01 *	-1.29 *	-1.36 *	-2.25 *	-1.68 *
Mean Income change from joining work plans								
Males	-0.02	0.19	0.27	1.47 *	0.16	-0.20	0.46	3.25 *
entering from wage work	-0.20	0.00	-0.54 *	-0.13	0.00	0.06	-0.18	0.47 *
entering from self-employment	0.10	-0.32	-0.49	-0.56	0.16	-0.27	-0.22	0.84
entering from unemployment	0.07	0.51 *	1.30 *	2.16 *	0.00	0.00	0.86 *	1.94 *
Females	0.21	0.86 *	2.35 *	10.46 *	0.32	0.76 *	1.93 *	12.88 *
entering from wage work	0.00	0.28	-0.27	0.34	0.00	0.09	-0.35	0.75 *
entering from self-employment	0.04	0.00	0.02	0.56	0.00	0.00	0.03	0.62 *
entering from unemployment	0.18	0.59 *	2.61 *	9.45 *	0.32	0.69 *	2.25 *	11.29 *

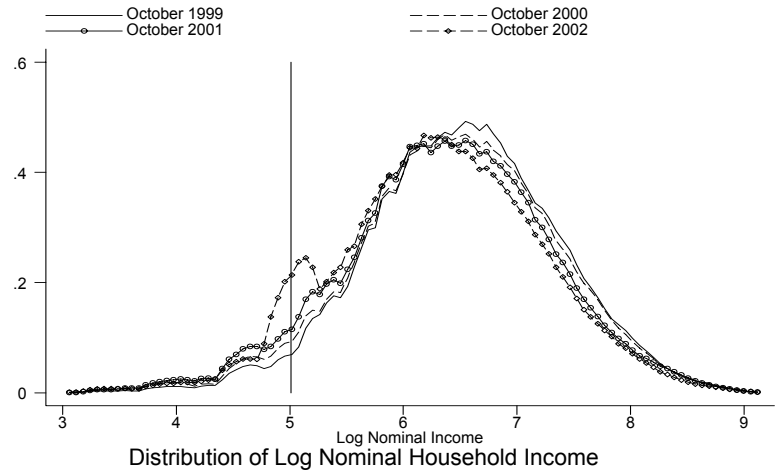
Notes:
* indicates that the mean is significantly different from zero at a 5% significance level according to a t-test.
Results are for households with heads aged 25-60, that can be matched for two or more periods.
Income quintile based on total household income in initial period.

TABLE B1: SAMPLE SIZES IN CROSS-SECTIONS AND PANELS

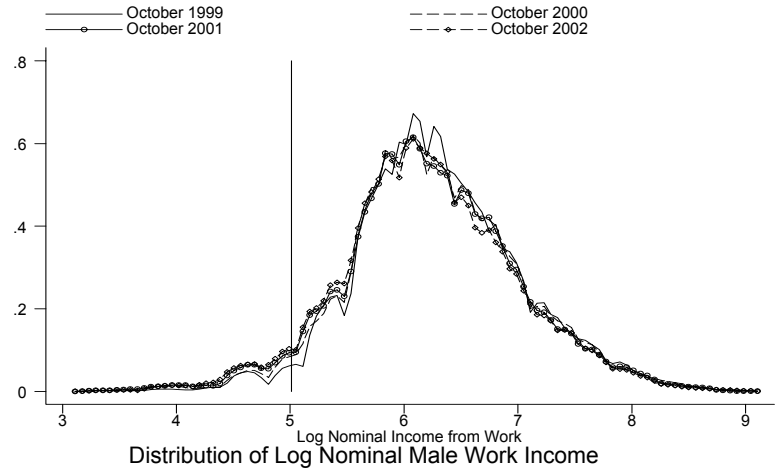
	Number of Observations	Observations Aged 25-60
Cross-sections		
May 01 EPH		
Households	22833	15978
Individuals	83275	34040
Oct 01 EPH		
Households	22998	16188
Individuals	83964	34476
May 02 EPH		
Households	22814	16066
Individuals	83313	34479
Oct 02 EPH		
Households	21148	14886
Individuals	77733	32010
Six-month Panels		
In both May 01 & Oct 01 EPH		
Households	14189	8893
Individuals	51064	21083
In both Oct 01 & May 02 EPH		
Households	14394	8979
Individuals	51629	21375
In both May 02 & Oct 02 EPH		
Households	13423	8431
Individuals	48845	20228
One-year panel		
In Oct 01 and Oct 02 EPH		
Households	8451	5199
Individuals	29500	12285

Notes: age is age of household head for households.
For panels, age is age in first survey, e.g. for the panel May 02 - Oct 02, age is age in the May 02 survey.

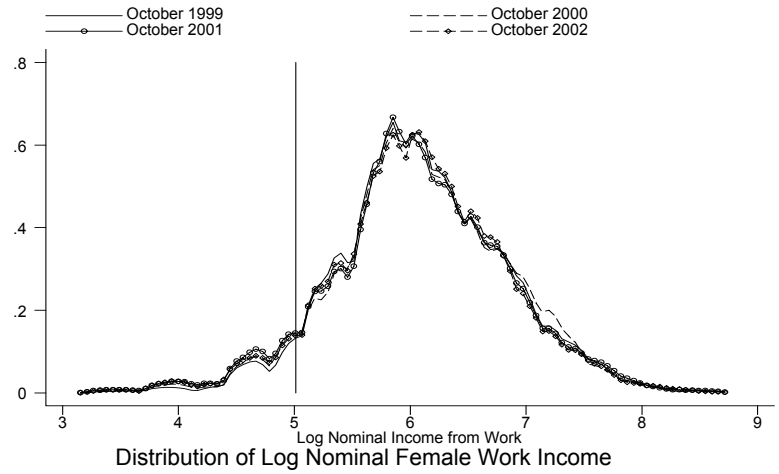
FIGURE 1: NOMINAL HOUSEHOLD AND INDIVIDUAL INCOME OCTOBER 1999-2002



Distribution of Log Nominal Household Income



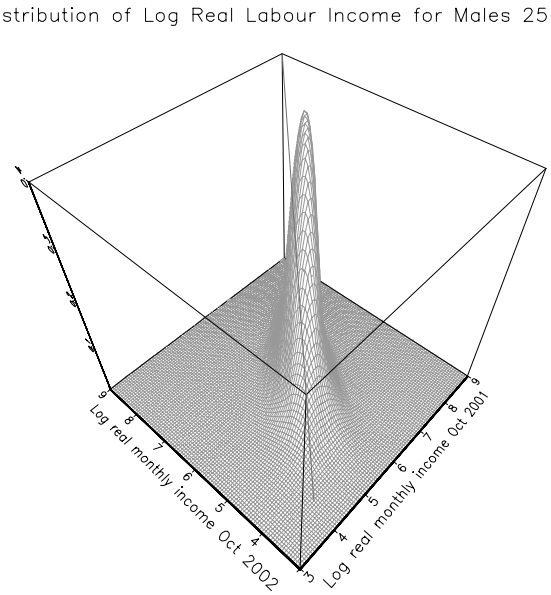
Distribution of Log Nominal Male Work Income

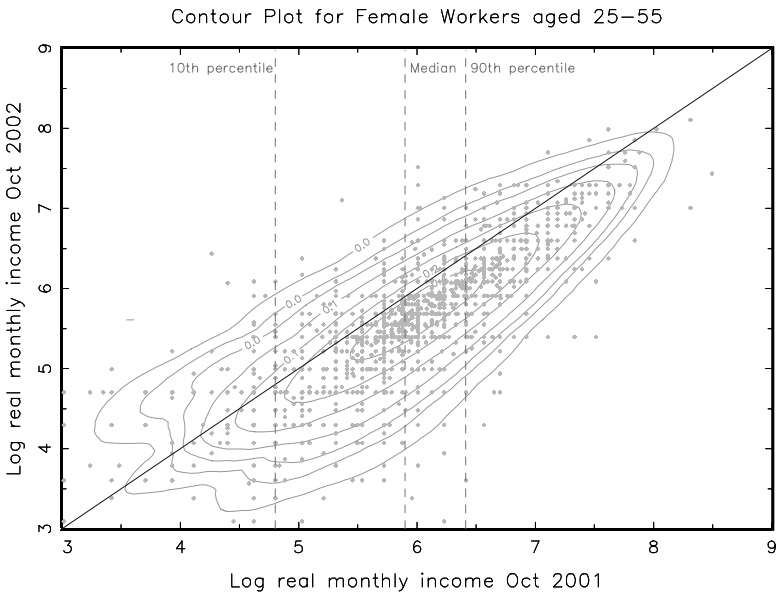


Distribution of Log Nominal Female Work Income

source: own estimations from EPH October waves 1999-2002. Work Income is for individuals aged 25-60 not in work programs, who work 25-90 hours per week and earn positive labour income. Household income is for households with heads aged 25-60 years. Vertical line indicates income of 150 pesos/month, the amount paid by the *Jefes* work program.

FIGURE 2: BIVARIATE NOMINAL LABOUR INCOME DISTRIBUTION





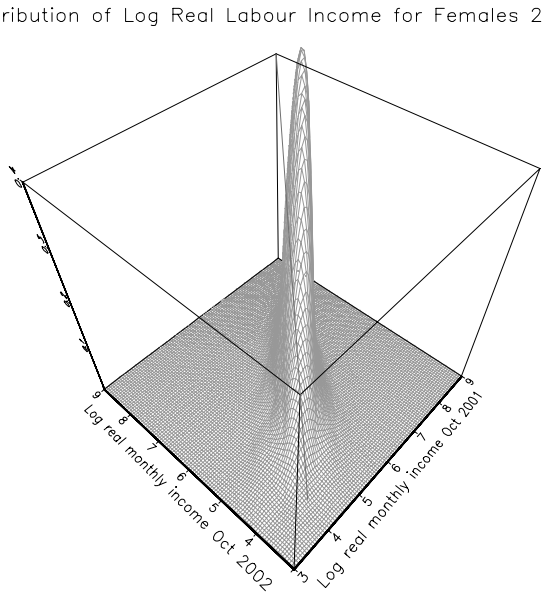
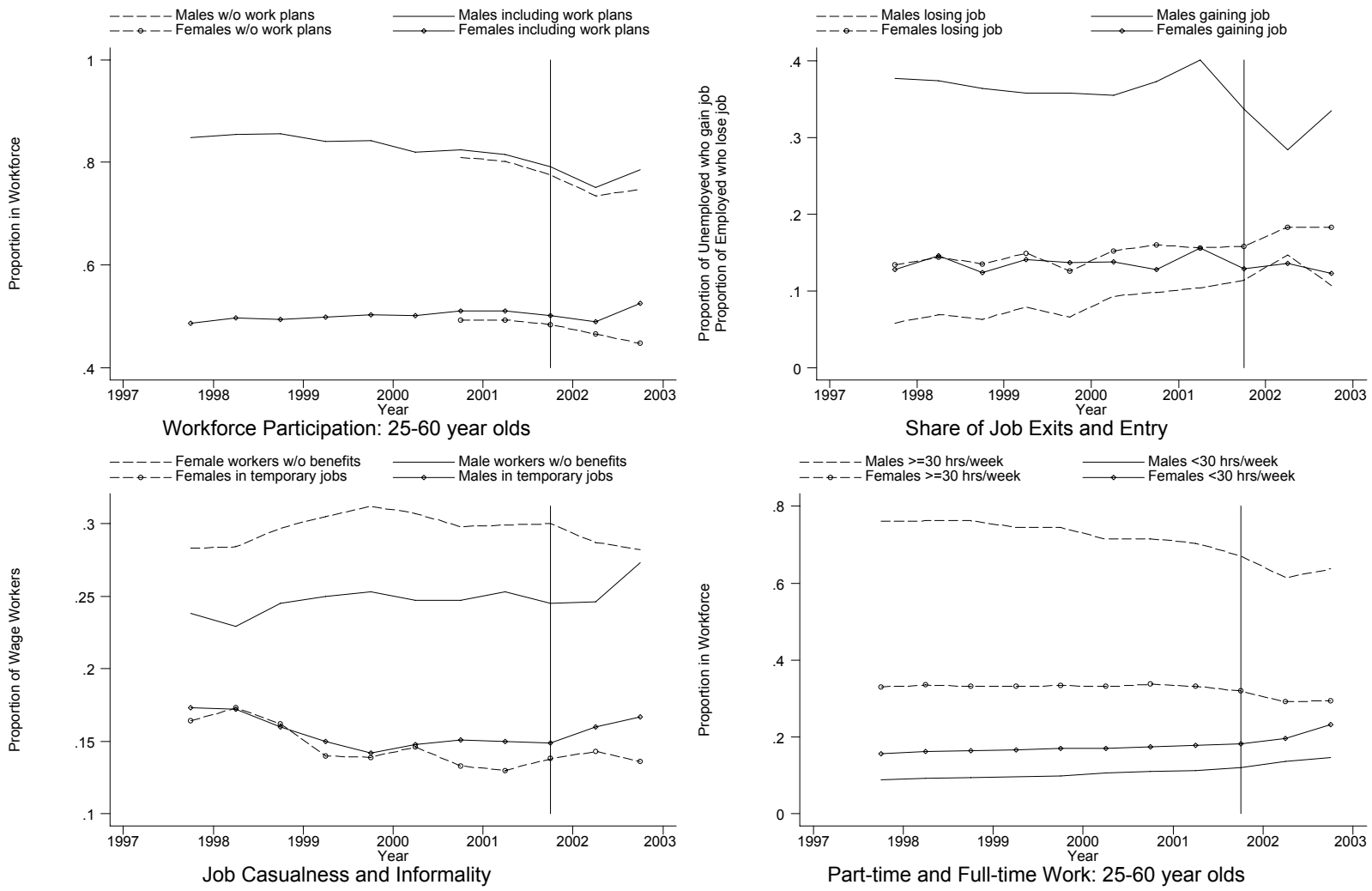
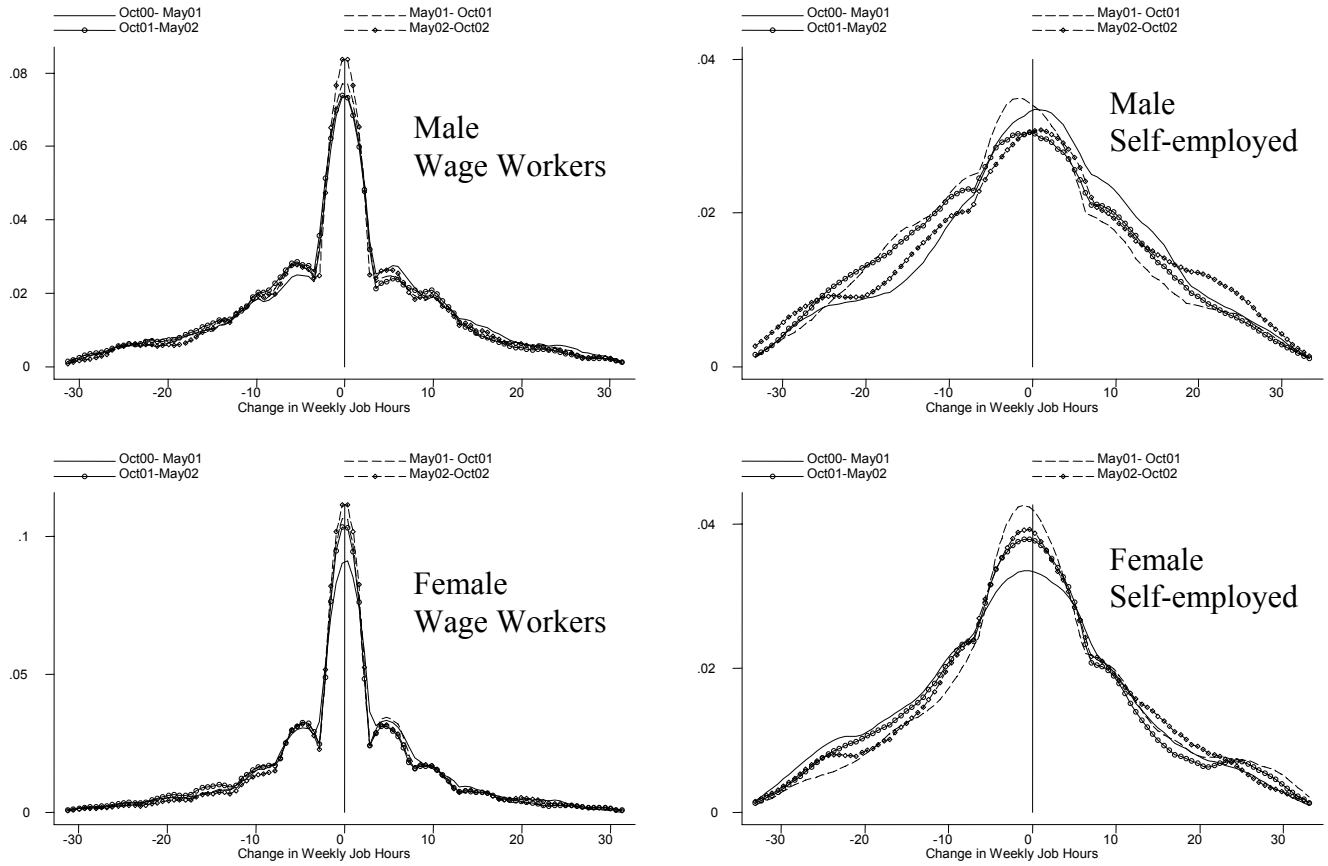


FIGURE 3: EMPLOYMENT CHANGES, OCTOBER 1997-2002.



source: own calculations from EPH for workers aged 25-60. Bottom panel is for workers not in work programs

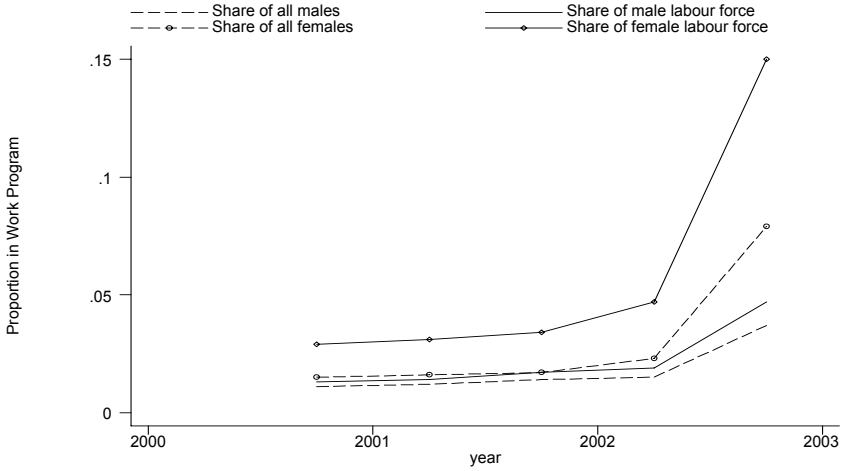
FIGURE 4: CHANGES IN HOURS WORKED FOR INDIVIDUALS REMAINING EMPLOYED
MALES AND FEMALES AGED 25-55 NOT IN WORK PROGRAMS



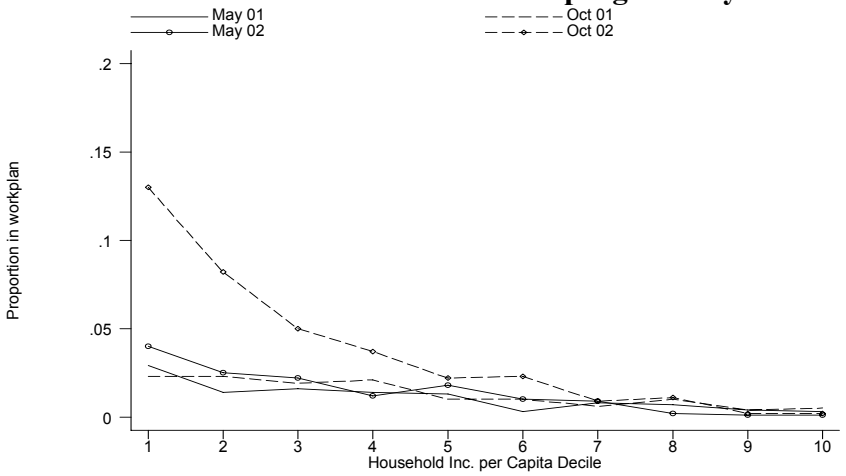
source: own calculations from EPH, for workers with absolute change of 30 hours per week or less.

FIGURE 5: PARTICIPATION IN WORK PROGRAMS

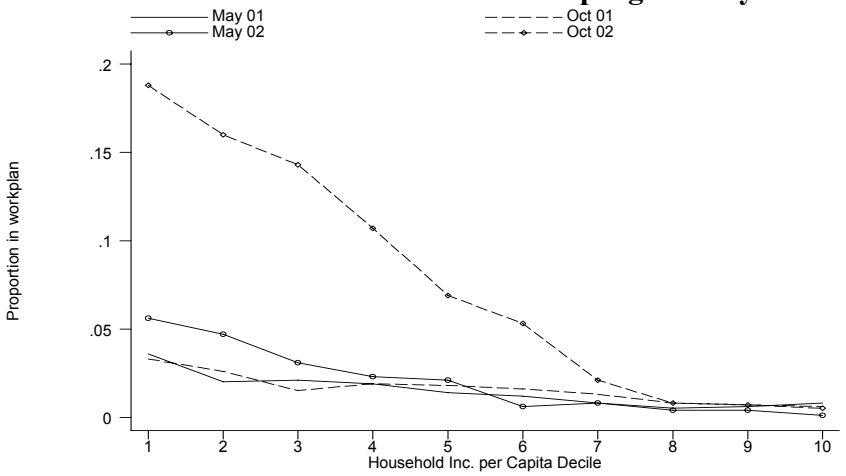
Panel A: Share of 25-60 year olds in Work Programs



Panel B: Share of Males 25-60 in work programs by decile



Panel C: Share of Females 25-60 in work programs by decile



source: own calculations from EPH