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Labour mobility in Argentina since the mid-1990s:
the hard road back to formal employment

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This paper analyses the magnitude and type of employment mobility found in Argentina from the mid-1990s onward using data from the *Observatorio de Empleo y Dinámica Empresarial* (Employment and Business Dynamics Observatory) of the Ministry of Labour and Social Security of Argentina. The Observatory was developed using social security records of registered private-sector wage employment in the manufacturing, commerce and services sectors. Such employment, however, played a minor role (25%) in the employment structure of Argentina during the period studied. The main finding of this study was a significant level of labour mobility. This article shows that, during the period in question, which was characterized by macroeconomic instability and high dollar labour costs, the dominant labour mobility trend among registered workers was toward exclusion from the formal labour market (through unemployment, inactivity or employment in jobs not registered with the social security system).

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I
Introduction

This paper is one of a series of research studies on labour mobility and short-term employment trends that have been conducted from a variety of perspectives, taking into account the prevailing institutional frameworks of the labour market concerned. Such studies also analyse the effect of business demography on occupational dynamics and the reallocation of employment from and toward different firms, sectors and regions.

Accordingly, the purpose of this paper is to analyse the magnitude and characteristics of the mobility of registered employment in Argentina from the mid-1990s onward, and to determine whether the labour market is segmented such that workers in the primary sector hold jobs in the same firm for longer periods of time, or enjoy greater career continuity in other firms.

This article employs data obtained from the Employment and Business Dynamics Observatory of the Ministry of Labour of Argentina. The Observatory was constructed using the administrative records of the social security system, which includes all registered wage workers in the private sector (approximately 3.5 million workers). This type of employment, however, represented a minority (25%) of the occupational structure of Argentina during the period studied. During that period, unregistered wage work made up 28% of the country's occupational structure; non-wage employment accounted for 26%, and public-sector employment and employment plans made up the remaining 22%. For this study, a panel was developed showing the series of firms that employed each individual worker, as well as the transition indicators for each period between 1996 and 2004, depending on the availability of source information.

Section II lays out the article's conceptual framework, and provides certain background information obtained from local and international studies. Section III provides a brief description of the macroeconomic environment and workings of the Argentine labour market during the period in question. Section IV describes the labour transitions experienced by registered Argentine wage workers during this period, and discusses several hypotheses regarding work. Section V assesses the short-term labour trajectories of registered wage workers who were employed when the crisis began (1998), and uses a probit model[1] to evaluate the variables that explain the job tenure of workers in a given firm from that point forward, as well as to provide additional input for the discussion of the hypotheses. The main conclusions of the article are presented in Section VI.

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[1] Probit models are binomial discrete choice models –that is, models with two alternatives.

II

Conceptual framework

Studies of labour mobility have a long history, and their relevance has increased over the last few decades, as the globalization of markets has eroded job security. They have benefited from the emergence of new sources of information, which have made the estimation of new indicators possible.

The concept of labour mobility, which refers to the job changes experienced by workers, differs from employment mobility, which refers to the creation and destruction of jobs as a result of firm closures, the creation of new firms or changes in the average size of firms remaining in the market. Labour mobility is a broader concept, which includes the movement of workers resulting from the creation and destruction of jobs, as well as the mobility generated by vacancy chains. It involves the series of movements (exits and entries) which can occur when an available job is taken by a worker, who in turn vacates his or her former position, which is itself occupied by another worker, until the process ends with the entry into employment of a new worker[2] (Sorensen and Tuma, 1981).

The literature covers several aspects of labour mobility, which may be "inclusive", or "exclusionary" when workers become unemployed, inactive or precariously employed. Mobility may also be "inward" or "outward", depending on whether a worker obtains a new position within the same company or goes to work for a new employer (Diprete, 1993); "voluntary" or "involuntary", depending on whether a worker is dismissed or resigns (Hachen, 1988); "upward", "downward" or "lateral", depending on the difference between the wages of the previous job and those of the new job (Shin, 2004). It may also involve continuity or change in a professional career (Shin, 2004; Stambol, 2003), and, under certain circumstances, it may lead to the diffusion of technical competencies among firms (Lundmark and Power, 2004; Dahl, 2002).

The manifestations of these various aspects of labour mobility generate different mobility regimes or patterns. Thus, labour mobility may be beneficial for society, workers and firms if it improves access to employment and increases overall productivity. A positive case is that of upwardly mobile careers, characterised by social inclusion and the diffusion of knowledge and competencies. Mobility takes on a very different hue when it excludes people from work, interrupting the accumulation of individual and collective skills.

The magnitude and patterns (regimes) of labour mobility vary according to the structure of the production sector and the institutional framework of labour markets in a particular economy. The macroeconomic environment is also a determining factor, since the economic cycle affects the market for goods and demand for labour. When the overall employment level contracts, mobility toward exclusion from the labour market (unemployment, insecure employment or inactivity) becomes more prominent, and opportunities for voluntary, upward mobility decline (Burgess and Rees, 1996; Schettkat, 1996; Lundmark and Power, 2004; Moscarini and Vella, 2002). Under such conditions, open unemployment and insecure employment hinder upward, inclusive mobility patterns.

Two paradigmatic, diametrically opposed labour mobility regimes may be used to illustrate this point. Studies of the United States, England and western Germany show that labour markets in those countries are dominated by long-term employment, and that the technological changes and deregulation of the last few decades have not significantly affected such employment. While labour mobility in those countries is high, it does not make employment for the average worker unstable (short-lived), since long-term employment relationships exist side-by-side with a segment of unstable jobs (Farber, 1998; Mertens, 1999). In the case of Latin America, studies of Brazil and Argentina during the second half of the 1990s have shown labour mobility in those countries to be high, with average mobility tilting away from registered wage employment and toward job insecurity or unemployment (Paz, 2003; Araujo Guimarães, 2004; Galiani and Hopenhayn, 2003; Castillo, Ferlan, and others, 2005).

While the average labour mobility pattern of an economy is a telling measure of different realities, the

[2] Vacancy chains may have different lengths and degrees of complexity, bringing about movement for varying numbers of workers.

existence of different levels of segmentation within labour markets requires a more complex analysis, in order to identify the coexistence of different labour mobility regimes at a given point in time, within a given country. A long line of empirical segmentation studies has shown that, generally speaking, primary sectors –defined as such based on (i) production structure, (ii) worker profile or (iii) region– are characterized by steadier employment relationships (less outward mobility) than the rest of the economy. Mobility in these primary sectors also tends to be of the upward variety (Shin, 2004; Thomson, 2003; Stambol, 2003).

Labour market segmentation, defined in terms of the structural heterogeneity of the production system, is caused by a number of factors, such as technology, the organizational structure of firms, the nature of product demand (monopoly power) and the degree of unionization (Thomson, 2003). Beck, Horan and Tolbert II (1978) employ this approach to identify core and periphery sectors, based on the relationship between product market and industry structure. The core sector is dominated by large corporate enterprises which constitute an oligopolistic system of production. The core sector is differentiated from the periphery sector, which is characterised by smaller firms, operating in a more competitive environment. Firms operating in more stable markets generate more primary-sector (steadier) jobs, while firms facing shifting demand functions operate in the secondary sector of the labour market. Other forms of segmentation arise from the poor chances of survival of new businesses, as well as the reallocation of resources among firms with different levels of productivity. A significant portion of (involuntary) employment mobility occurs when relatively young firms exit the market. Destruction is less common among older firms (Dunne, Roberts and Samuelson, 1988). Resource mobility among firms with different levels of productivity accounts for almost half the growth of manufacturing productivity in the United States (Haltiwanger, Lane and Spletzer, 2000).

An analysis of segmentation based on worker profile shows that different mobility patterns exist for different market sectors. Better-educated workers enjoy a greater degree of upward mobility; intersectoral mobility is more frequent among younger workers who have not yet acquired specific skills during their careers (Stambol, 2003); women are generally concentrated in secondary sectors of the labour market, with less secure jobs and fewer prospects for upward mobility (Thompson, 2003; Hall, 1982; Mertens, 1999). Internal labour market theory suggests that firms protect a limited (primary) sector of their workforce, comprised of professional[3] and managerial workers, while the secondary sector is associated with workers with lower occupational status (Doeringer and Piore, 1971). Internal labour markets, characterized by upwardly mobile careers, promotions and incentives, form around this primary segment (Doeringer and Piore, 1971). In large organizations, inward mobility among workers is the primary pattern of mobility. Extensive career-development programs and the prospect of a long stay at the firm discourage voluntary outward mobility. Since outward mobility is rare and selective, when these primary workers choose to change firms they usually move upward.

When labour market segmentation is analysed in terms of the regional division of labour, heterogeneous mobility patterns also emerge. This type of segmentation involves a number of separate sub-markets, all of which are configured differently and are characterised by low outward mobility and high inward mobility. This is the case with production clusters, which make intensive use of knowledge, employing a local labour force characterised by a high degree of economic and technological specialization, which is a result of agglomeration economies and processes that foster collective efficiency (Dahl, 2002). A number of studies conducted in Silicon Valley and similar clusters in Scandinavian countries show that the diffusion of knowledge resulting from worker mobility within the cluster increases collective competencies and generates economies within the industry and outside the firm (Dahl, 2002; Lundmark and Power, 2004; Stambol, 2003). This, in turn, benefits workers, who move upward, continuing their careers at other firms within the cluster. In this case, mobility favours both workers and firms.

From that perspective, the labour mobility process contributes to the development of firm competencies, if one assumes that workers are bearers of knowledge and ideas (which are already embedded in their minds). If the knowledge borne by workers is relevant, other firms will promote mobility. Knowledge flows between firms are thus driven mainly by the movement of workers (Dahl, 2002; Lundmark and Power, 2004). As mentioned above, this pattern of mobility has been

[3] Moscarini and Vella (2002) have found that, in the case of the United States, there is an inverse relationship between outward mobility and schooling, age and family obligations.

widely studied in knowledge-based production clusters, where the institutional culture encourages it. Numerous case studies have also analysed sectors of the traditional labour market, such as the sector comprised of the primary workers of knowledge-intensive firms, which develop strategies to attract the primary workers of their competitors, in order to gain control of knowledge.

Within that conceptual framework, the intensity and pattern of labour mobility for the average registered worker in Argentina between 1996 and 2004 will now be analysed. In order to better understand these processes, the following section provides a description of the macroeconomic environment, which, as mentioned above, is a determining factor in labour mobility.

III

The macroeconomic context and labour market of Argentina between 1996 and 2004

During the 1990s, the Argentine economy experienced profound transformations, which affected its labour market. Structural reforms were adopted as a result of the Washington consensus (liberalization, privatization and market deregulation), new technologies emerged and labour regulations underwent significant changes (Kosacoff, Yoguel and others, 2000; Gatto and Ferraro, 1997; Yoguel, 2000a), within the framework of a financial liberalization process that was to become one of the chief factors in the crisis which began during the fourth quarter of 1998 (Stiglitz, 2003).

Consequently, as the exchange rate was revalued, the macroeconomic environment forced sectors which produced tradable goods –particularly the manufacturing sector– to deal with falling sales prices, as a result of increased exposure to competition from imported goods, high dollar production costs and growing uncertainty.

While significant regulatory reforms were adopted during this period to reduce non-wage labour costs and make working hours more flexible, the increasing dollar unit cost of labour became a strong incentive to replace work with capital (Altimir and Beccaria, 1999). Stability, access to imported parts and equipment, the deregulation of severance procedures, attractive investment conditions for transnationals and the recreation of commercial and bank credit all contributed to the destruction of jobs, particularly in the manufacturing sector.

During this period, labour legislation underwent a number of changes intended to make the labour market more flexible, on the assumption that such reforms would make firms more competitive and increase labour demand. The evidence, however, suggests that these measures did not have a positive effect, given the sharp increase in unregistered employment that became one of the signature manifestations of job insecurity during the 1990s. Between 1991 and 2000, for example, unregistered employment rose from 29% to 37%.

Since firms adopted very different strategies to adapt to the changing environment, the significant increase which occurred in overall productivity, coupled with a drop in labour demand, was caused by very different factors: the offensive strategies of some firms, and the survival strategies of others. Many firms disappeared, while new ones joined the industrial structure. So-called "offensive" restructuring processes involved heavy investment in machinery and equipment, accompanied by profound organizational changes. "Surviving" firms adapted to the new conditions by cutting jobs, thereby achieving the same level of productivity with fewer employees, and by implementing organizational changes and eliminating downtime. As a result of these processes, the share of manufacturing in overall employment fell from 28% in 1995 to 23% in 2000. Fifty-seven thousand manufacturing jobs were lost as a result (Castillo, Cesa and others, 2002).

Occupational mobility will be analysed in the context of this macro-economically unstable environment, as well as the aforementioned changes in the organization of the production model, the introduction of new technologies, the declining share of manufacturing in overall employment and job insecurity.

An analysis of the unemployment rate reveals the existence of three distinct stages, which coincide with the phases of recent economic trends. The first phase (1996-1998) was expansive, and was characterised by falling unemployment, rising employment rates and steady labour force participation rates; the second phase (1999-2002) was recessionary, and was characterised by a general worsening of conditions in the labour market, a sharp increase in unemployment and drops in the employment and economic participation rates; finally, in 2003 and 2004, an economic recovery which continued into 2005 was accompanied by a clear shift: unemployment fell, and the labour force participation and employment rates increased.

Worker mobility was also specifically affected by the changes which began in the mid-1990s. Employment histories are the result of a variety of actions adopted in response to the issues facing the country. In order to study different labour mobility trends, this analysis will focus on the three stages mentioned above.

As of 2004 (third quarter), the structure of the Argentine labour market was "atypical". In an environment characterised by high unemployment (13%), private, registered wage workers represented a minority (25%) of the employment structure. Unregistered wage work and non-wage work represented 28% and 26% of the employment structure, respectively. Public-sector employment and employment plans accounted for the remaining 22%.

The following sections will show that breaks in employment histories influenced the development of competencies, job security, the stability of household income[4] and the chances of retirement.

IV

Labour transitions among registered wage workers in Argentina between 1996 and 2004

In this section, we analyse the outward labour mobility of registered wage workers by studying the flows of individuals entering or exiting registered employment, remaining with the same employer or switching employers. The data presented below are expressed as one-year periods, beginning at the fourth quarter of each consecutive year.

The information used in this section was obtained from the administrative database of the *Sistema Integrado de Jubilaciones y Pensiones* (Integrated Retirement and Pension System, or SIJP), which can measure declared employment between 1996 and 2004. Those data were used to construct yearly transition matrices for private-sector wage workers who were registered with the social security system in the manufacturing, commerce and services sectors. These matrices, which were used to calculate worker flows, cover only workers of active age (under 65 years), in order to exclude possible transitions toward the pension system, which would occur upon retirement at age 66 (see appendix on methodology).

On average, 3.3 million wage workers under the age of 65 years were registered with the social security system each year between 1996 and 2004, in the manufacturing, commerce and services sectors. An average of 2.4 million workers remained with the same employer from one year to the next; 592,000 entered the system, and approximately 550,000 exited it. During the sub-periods considered (the period of rising employment which occurred during the ascendant phase of the convertibility plan, the recession and crisis of 2002 and the post-convertibility recovery), employment flows were a reflection of changes in the macroeconomic environment of the country. During the recessionary period of 1999-2002, exits from the system exceeded entries. This suggests that registered employment decreased yearly (negative net changes). During growth years, on the contrary –particularly during the last phase– entries into the system exceeded exits.

As a result of these flows, labour mobility during this period was high, affecting 39% of employed workers each year (table 1). This percentage includes workers entering registered employment (15%), displaced workers (14%) and workers who switched employers (10%).

[4] It should be noted that most registered wage workers in the private sector are heads of household –particularly in the manufacturing sector.

TABLE 1

Argentina: Labour mobility indicators for employed wage workers under 65 years of age registered by private firms in the manufacturing, commerce and services sectors, 1997-2004
(Percentages)

Mobility rates from and toward the SIJP	1997-1998	1999-2002	2003-2004	Average, 1997-2004
Entry rate[a]	18	13	19	16
Exit rate[b]	13	16	10	14
Percentage of employer changes[c]	11	9	9	10
Mobility rate (a)+(b)+(c)	42	38	38	39
Net growth of employment (entries-exits)/ employment at *t*	6.0	-3.1	11.0	2.4

Source: Employment and Business Dynamics Observatory of Argentina (OEDE, several years), on the basis of the Integrated Retirement and Pension System (SIJP). The Observatory belongs to the Sub-secretariat for Technical Planning and Labour Studies of the Ministry of Labour, Employment and Social Security of Argentina.

[a] Entries / (entries + exits + stays in the system).
[b] Exits / (entries + exits + stays in the system).
[c] *Código Único de Identificación Tributaria* (Unified Tax Identification Code) changes / (entries + exits + stays in the system).

The average percentage of workers who held registered jobs from one year to the next during the period studied was 84%. This percentage was procyclical, and was higher (88%) during the final growth phase than it was during the crisis (82%) and during the first stage of expanding activity (84%).[5] The rate of duration with the same employer was 72% –a percentage which grew significantly during the final growth phase (77%).[6]

[5] These values are close to those estimated by other authors, on the basis of the Permanent Household Survey, for the average semester between 1997 and 2002 (Paz, 2003; Pessino and Andrés, 2000).
[6] Interestingly, the percentage of workers who stayed with the same firm remained relatively stable (70%), during both recessionary and expansionary years between 1996 and 2001. From 2002 onward, however, the percentage of workers remaining at the same firm increased. This was due both to falling dollar labour costs resulting from devaluation and increased dismissal costs (in January 2002, the *Ley de Emergencia Pública y Reforma del Régimen Cambiario No. 25,561* (Public Emergency and Exchange Rate Regime Reform Act No. 25,561) devalued the peso and, in response to the severe economic and social crisis afflicting the country, doubled dismissal compensation for all workers).

In aggregate terms, the percentage of workers who switched firms was somewhat lower than that of workers who exited registered wage labour. An analysis of the new jobs taken by workers who switched employers shows that only a third of them remained in the same field (according to the two-digit classification of activities in the International Standard Industrial Classification of All Economic Activities (ISIC), third revision). This suggests that the possibility of knowledge diffusion among firms through worker mobility was limited (table 2).

TABLE 2

Argentina: Labour transition rates for employed wage workers under 65 years of age registered by private firms in the manufacturing, commerce and services sectors – 1997-2004
(Percentages)

Transitions	1997-1998	1999-2002	2003-2004	Average, 1997-2004
Remained with the same firm	70	71	77	72
Switched firms	14	11	11	12
Switched firms within the same industry	4	4	4	4
Switched industries within the sector	4	3	3	3
Switched sectors	6	4	4	5
Remained in the SIJP	84	82	88	84
Exited the SIJP	16	18	12	16
Overall employment at t-1	*100*	*100*	*100*	*100*

Source: See table 1.

The participation of workers who switched employers while remaining within the formal system was procyclical, rising during growth periods and contracting during recessionary periods. This may be partly due to voluntary resignations by workers seeking to improve their income and working conditions. Such resignations are more likely to occur during the ascendant phase of the cycle; job opportunities are more scarce during recessionary periods, and workers behave more cautiously.

Our information source does not specify the ultimate fate, in labour terms, of workers who exited the SIJP. Supplementary information can be obtained, however, from other sources, such as the Permanent Household Survey. Between 1997 and 2002, most wage workers with social security benefits who exited the

system took wage jobs with no social security coverage, became unemployed or became inactive, in that order of importance. The proportion of workers who started their own businesses from one year to the next was very small (Paz, 2003).

Once the significant yearly percentage of workers of active age who exit jobs with social security coverage has been quantified, the probability of such persons re-entering the system in later years must be established. To that end, re-entry levels for workers who exited the system over the course of the seven years between 1996 and 2003 were estimated (table 3).

Firstly, from a structural standpoint, save for a few variations resulting from the economic cycle, returns to formal employment are more likely to occur up to one year after exiting the system. The chances of re-entry decrease after that point, perhaps because the most frequent job-seeking strategy is to rely on personal contacts and networks, which deteriorate over time. Firms prefer to hire workers who are in the market, rather than those who are unemployed. Generally speaking, taking into account the demographic factor, once seven years have passed, nearly 60% of workers fail to find registered employment in the manufacturing, commerce or services sectors, and are thus excluded from the social security system. The low probability of re-entry may be explained by the high rate of non-registration, the low share of registered wage labour in the overall employment structure and the weakness of job-placement institutions.

In addition, table 4 shows the percentage of persons who entered the system in 2003 and 2004, and were forced out of registered employment from 1996 onward.

TABLE 4

Argentina: Re-entries into registered employment among wage workers under 55 years of age who had exited private firms in the manufacturing, commerce and services sectors: 2003-2004
(Annual percentage rates)

Years	Re-entries (in thousands)	Total entries (thousands)	Re-entries/ total entries
2003	251	675	37
2004	259	809	32
Average	*255*	*742*	*34*

Source: See table 1.

On average, setting aside firm changes, 34% of the persons entering registered employment during these two years were re-entrants. The remaining 66% were workers who had never held a registered job that lasted more than a year. A significant proportion of workers re-entering registered employment (25% in 2004 and 40% in 2003) had exited the system recently.

These results confirm that the new expansionary phase of employment which began in 2003 witnessed the re-entry of a small percentage of workers who, having held registered jobs during earlier periods, were forced into insecure jobs, unemployment or inactivity.

The high rate at which the system expelled workers of active age, year after year, coupled with the low chances of re-entering wage employment in the medium term, led to continuous career interruptions, the destruction of competencies and exclusion from employment covered by social security.

TABLE 3

Argentina: Returns to registered employment among wage workers under 55 years of age who had exited private firms in the manufacturing, commerce and services sectors, 1996-2003
(*Annual percentage rates*)

Years elapsed after exiting the system	IV 1996 IV 1997	IV 1997 IV 1998	IV 1998 IV 1999	IV 1999 IV 2000	IV 2000 IV 2001	IV 2001 IV 2002	IV 2002 IV 2003	Average
1	20	18	18	15	13	21	22	18
2	8	9	7	6	12	12		10
3	5	5	4	7	9			6
4	3	2	5	7				4
5	2	4	5					4
6	2	4						3
7	3							2
Not yet re-entered	57	59	61	65	66	67	78	64
Total exits	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*

Source: See table 1.

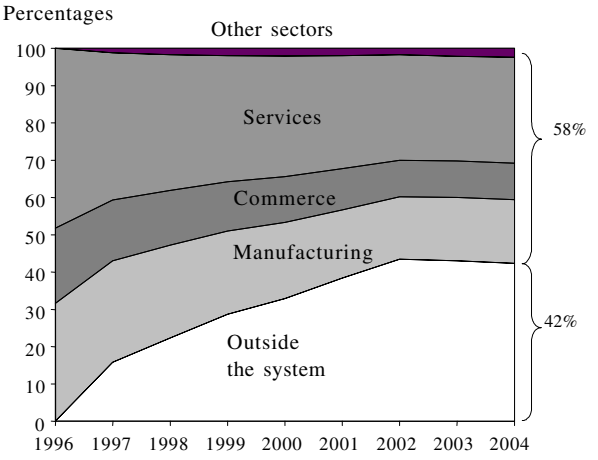
In order to measure the impact of these processes on the aggregate labour trajectories of workers in the medium term, we have studied the cohort of workers who were employed in manufacturing, commercial and services firms in 1996, and were under 55 years of age at the time.[7] This analysis did not include workers who entered registered employment during subsequent years.

As of 2004, only 26% of the workers studied remained at the same firm, accruing eight years of seniority. Fifty-eight percent of those workers continued to hold registered jobs in the aforementioned sectors, either in the same activity or a different one (32% had switched firms). Forty-two percent had exited the system, taking insecure jobs or becoming unemployed or inactive, and beginning trajectories that might lead to exclusion (figure 1).

This trajectory can be specified for each of the sectors considered. In the manufacturing sector, especially, the proportion of wage workers of active age who remained employed was slightly higher than the proportion excluded from the system, while only 10% were able to re-enter commercial and service activities. This shows that the tertiarization of registered employment between 1996 and 2004 –understood as a decline in the share of manufacturing in overall employment, accompanied by an increase in the share of commerce and services– was a result of the substitution of new workers in the tertiary sector for the wage workers who had been displaced in manufacturing, rather than the reconversion of manufacturing employment into service-sector employment. Finally, it is interesting to note that, in 2003, the curve of the manufacturing employment cohort began to change. This was a reflection of the slowing rate of expulsion of these manufacturing workers, as well as the return of some of the workers who had previously been displaced.

FIGURE 1

Argentina: Intersectoral labour trajectories of cohort of workers under 55 years of age who were employed in 1996, 1996-2004



Source: See table 1.

V

Segmentation of the labour market and labour stability

In the preceding section it was noted that the situation in Argentina differs from circumstances in other virtuous models, where mobility is high both within a given production cluster or local system and with respect to firms that are not part of the predominant form of organization. Here, the prevailing pattern of labour mobility was one of exclusion from the entrepreneurial structure and from classic labour relations.

This section deals with the question of whether mobility regimes and employment stability differ from the average in the primary sectors of the labour market. The period analysed was 1998-2004, which witnessed a deep, prolonged recession (1998-2002), followed by two years of recovery (2003-2004).

Over the last few decades, the economic literature has often used duration models for studies of issues relating to labour mobility, such as the probability of a worker remaining in a given job. These models explain such a probability from the standpoint of cumulative seniority and the special characteristics of individual workers[8] (Lancaster, 1990).

[7] Workers who were eligible for retirement at any point during the years studied were excluded from the cohort.

[8] Duration models describe the conditional probability that a given event will be completed. They are called duration models because they involve estimating an individual's survival in the

The administrative records used for this study, however, do not include complete information on the seniority of workers; this variable was constructed from the job duration observed after the records were created (in 1995).[9] In other words, for the 1998 cohort of workers, cumulative seniority is known only from 1995 onward; because of this limitation, traditional duration models were not used. Consequently, two probit models were used to estimate both the probability of a worker's remaining in the same firm and the probability of his or her remaining in registered employment (table 5).

Among the possible variables, we chose the group with the best explanatory capacity in the numerous labour segmentation and mobility studies reviewed (see section I). The following characteristics of firms were taken into account: size, sector and seniority. As regards the characteristics of workers, gender, age, wage level and seniority were analysed as substitutes for human capital (a dimension which is not included in the information source used), even though, as noted earlier, the relevance of duration is not based solely on its association with human capital.[10]

The sectors analysed were manufacturing, commerce and services. The performance of workers in the manufacturing sector is expected to be different from that of workers in the other two sectors. As noted in section III, during the second half of the 1990s, the macroeconomic environment of Argentina did not favour the development of the manufacturing sector. In fact, throughout the 1998-2004 period, the loss of 9% of manufacturing jobs pushed a significant number of former workers toward exclusion, as mentioned in

TABLE 5

Argentina: Probability of remaining in the SIJP in 2004, 1998 cohort, workers under 55 years of age
(Probit estimate signs)

Variables	Remain with the same firm	Remain in the system (in the same firm or a different one)
Males (ref. females)	–	+
Ages (between 26 and 35 years of age)		
Under 25 years of age	–	+
Between 35 and 55 years of age	+	–
Remuneration (ref. high medium)		
Low	–	–
Low medium	–	–
High	+	+
Job seniority (ref. 1 and 2 years)		
No seniority (outside the firm)	–	–
No seniority (within the firm)	–	+
Three years or more	+	+
Sector (ref. services)		
Manufacturing	+	–
Commerce	–	–
Size of firm (ref. medium)		
Large	+	–
Small	–	–
Microenterprises	–	–
Firms established before 1990 (ref. new)	+	+

Source: See table 1.

cycle and the risk of the cycle ending, based on observations of the duration of an event, following a cumulative distribution function.

[9] In other words, for the 1998 cohort of workers selected for this exercise, known initial seniority is annotated as follows: three years or more, two years, one year, and newly hired.

[10] These variables, as well as others that were excluded from the analysis due to limitations in the information source used, have been emphasized in most of the literature discussed in the second section. The structure of demand and the development of technological competencies on the part of firms are some of the levels affecting the aforementioned transitions which were not included in the analysis.

section IV. During the same period, the commerce and services sectors performed better, experiencing a 9% increase in employment.

Hypothesis: Based on the change in sectoral distribution of employment (tertiarization), manufacturing workers –particularly those with lower levels of skills (or labour status)– are expected to show greater mobility, following the rationale of the vacancy chains mentioned in section II. Stays at a single firm should be shorter, given that the labour demand of the sector was contracting. Inclusive mobility (the probability of reconversion to other sectors) should be lower, especially among older workers, since their profiles are less diversified and their average level of schooling is lower than the mean for the economy.

Firms have been classified in four strata (large, medium-sized, small and microenterprises), based on the number of persons they employed during the baseline year of the study (1998).

Hypothesis: Stays at the same firm are expected to be more likely in large firms, since those organizations offer career development opportunities within the firm (inward markets), particularly for primary-sector workers. Outward mobility among such workers in large firms is usually selective, and tends to mean that they will continue their careers at other firms.

In addition, throughout the period studied, firms in Argentina had a high mortality rate. This was especially true of firms that were smaller, in relative terms. Employment relationships became more difficult to maintain, as the firm's chances of survival decreased. The literature on job creation and destruction suggests that job rotation decreases with the size of the agents involved (Davis, Haltiwanger and Schuh, 1997; Castillo, Cesa and others, 2002; Castillo, Ferlan and others, 2005; OECD, several years).

From the standpoint of a firm's structure, its age –counted from the first year of the study– is a variable that helps to explain the duration and exit rates of its workers. The variable is incorporated in two segments. The first was made up of very young firms –those founded after 1990– which were less than eight years old in 1998 and had lower chances of survival than older firms. The other segment included old, well-established firms with a higher chance of survival. The literature suggests that a substantial part of employment mobility can be explained by the relatively short life span of start-up firms that are replaced by new ones, many of which will also probably be short-lived (Dunne, Roberts and Samuelson, 1988; Castillo, Cesa and others, 2002).[11]

Hypothesis: In other words, the probability of remaining in the same firm is expected to be higher for older firms than for new firms, since the probability of surviving a recession is higher for older firms.

This set of dimensions may show that job duration depends on the stability of the firms in the market, as well as on their size, sector and age. These features are usually associated with the profile of agents that have greater technical competencies.

From the standpoint of labour market segmentation based on the personal characteristics of workers, gender and age are included –taken from the first year of the study– in three segments.

Hypothesis: Job stability is expected to be lower for the segment made up of younger workers, since they have not accumulated the necessary competencies to be included among primary workers. Their intersectoral labour mobility is expected to be high, however, since they have not yet acquired specific skills during their careers. Similarly, older segments are expected to remain in the firm longer and have a lower rate of outward mobility.

The literature indicates that women tend to be concentrated in secondary sectors of the labour market, with less secure jobs and fewer prospects for upward mobility.

Hypothesis: Women are expected to enjoy less labour stability.

Another variable that seems to have a positive correlation with the probability of remaining at a firm and in the system is that of seniority, counted from the first year of the study. Studies on the probability of remaining at the same job based on seniority have shown a positive correlation between stability and seniority in the United States and certain European countries. While most jobs have a limited duration, workers who last more than five years at a job will very

[11] In addition to the results of the model, it is interesting to note that two thirds of wage workers who, as of 1998, were working in firms that shut down were forced out of the system, regardless of the sector in which they worked. Moreover, slightly less than one third of those who worked in firms that closed remain in the sector, with less weight in commerce and manufacturing. On the other hand, the proportion of wage workers who exit the system in "continuing" firms is lower. The low re-entry level of workers from firms that close highlights the need to not only promote the creation of new firms, but also, more importantly, to achieve significantly higher survival rates than those which currently prevail among new firms. From that standpoint, in an economy with a high rate of structural unemployment, it is not enough, as studies of firm creation usually argue, for the birth rate to be higher than the death rate.

likely remain there (Hall, 1982; Mertens, 1999). This is consistent with the theories of human capital and with neo-Schumpeterian theories of competency creation. As far as workers who lacked seniority in 1998 are concerned, a distinction is made between those who entered the firm that year after switching employers and those who entered the firm with no prior experience in registered employment.

Hypothesis: The probability of remaining at a job is expected to be higher for workers coming from other firms than for those who have not participated in registered employment.

The source used does not include information on the level of schooling or the level of skills of workers, both of which are described in the literature as determinants of the probability of remaining at a job. To compensate for this shortcoming in the model, the quintile of remuneration received by workers was used as an alternative variable for their skill level, given that, in the Argentine labour market, the level of remuneration increases with the level of skills.

Hypothesis: Labour stability is expected to be higher among workers who are better paid and have more skills. Inclusive, upwardly mobile labour patterns are also expected.

The main results are shown in table 5.

All of the variables were individually and globally significant, and in almost all cases the signs obtained were as expected (see Appendix B).

Using the services sector as a benchmark, the probability of remaining in the same job was found to be higher in manufacturing and lower in commerce. This was not expected. It suggests that the decline in manufacturing employment is due to the fact that a large share of jobs that had been destroyed were not replaced by new jobs, even though manufacturing had a higher job-retention rate. The duration of manufacturing workers in the registered employment system was lower than in services, however; this suggests that once a job has been lost, re-entry is unlikely. The probability of remaining in the same firm is higher for workers in large firms and lower for small and medium-sized firms, taking medium-sized firms as the benchmark. Workers from medium-sized firms are, however, more likely to remain in registered employment. As expected, both the probability of remaining in the same firm and that of remaining in the system was higher for workers from older firms (established before 1990) than it was for those from younger firms.

The characteristics of workers also suggest different transition probabilities. As expected, the probability of remaining in the firm is lower among younger workers (under 25 years), compared to the next age group (26-35 years), and higher for the age group of 36-55 years. Also as expected, however, young people have a higher probability of remaining in the system –that is, of moving to other firms after exiting a job. Contrary to expectations, women are more likely to remain in the same firm than men. They are less likely than men to remain in registered employment, however, since they find reinsertion into other firms more difficult. Workers with more than three years of seniority on the job have a greater probability of remaining, both at the same firm and in registered employment, than those with less seniority. In the case of workers with no seniority, those who entered the firm from another firm have a greater probability of remaining in registered employment than workers with little seniority. Finally, the probability of remaining at the same firm or in the formal sector is greater among workers with high remuneration (compared with high-middle-income workers) and is lower in all other cases. This shows that firms are more interested in keeping higher-paid workers, who are usually believed to possess a higher level of human capital and to have accumulated more technical competencies throughout their careers.[12]

In other words, the labour market is segmented, both in terms of the profile of employed workers and in that of the firms where they work. This is evident in job stability and in the possibility of following mobility patterns other than those that entail exclusion from registered employment.

In section IV we showed that, on average in the economy, only 32% of workers remained in the same firm between 1998 and 2004. Following is an estimate of the probability of remaining in the same job for a set of agents similar to those in the primary sector of the Argentine labour market.

This sector was defined as that of workers employed in large firms in the manufacturing industry or the services sector that had been in the market for more than eight years, and had remained there throughout the serious recession. The primary sector of workers of these firms was also taken into account;

[12] Similarly, continuity at a firm is associated with starting wage levels. While only 13% of lower-income workers remain at the same firm, this percentage rises to 36% among those earning relatively higher wages. These trends are stronger in the services and manufacturing sectors. Moreover, the proportion of wage workers who exit the system is inversely related to the starting wage level of workers, while the rate of transition to other firms in the sector or in other sectors is not associated with original wage levels.

these were defined as those workers with high and high medium wage levels and more than three years of seniority at the firm. In order to determine whether workers in the primary sector of the market enjoyed greater labour stability, the above model was applied, using the aforementioned variables but taking into account the panel of surviving firms. The signs obtained were the same as those of the previous model, except for the size variable. In that case, wage workers at relatively smaller firms are the most likely to remain. This underscores the negative effect which the exit of firms from the structure has on labour trajectories (see again Appendix B).

The results obtained suggest that job stability is considerably higher (67%) for these workers than it is on average (32%). This analysis also shows that job seniority and the level of remuneration (a variable employed as an alternative for human capital), which are dimensions pertaining to the definition of the primary sector of workers, contribute the most to increasing stability (table 6).

These results show that greater development of technical competencies may be associated with greater labour stability, even in an overall environment in which employment stability is low and mobility usually leads to exclusion from employment.

TABLE 6

Argentina: Elasticities. Probability of remaining at the same firm in 2004, 1998 cohort, workers under 55 years of age. Workers with high medium and high remuneration; with three or more years of seniority, large firms in manufacturing and services that have lasted more than eight years, survivors

	Probability 67%	
Variables	Sign	Elasticity (%)
Remuneration (ref. low medium)		
Low	–	–9.5
High medium	+	5.3
High	+	6.8
Job seniority (ref. 1 and 2 years)		
No seniority (outside the firm)	–	–14.9
No seniority (within the firm)	–	–5.1
3 years or more	+	17.9
Sector (ref. commerce)		
Manufacturing	+	2.4
Services	+	2.9
Size of firm (ref. medium)		
Large	–	–4.2
Small	+	2.5
Microenterprises	+	5.6
Age of firm		
Prior to 1990	+	1.8

Source: See table 1.

VI

Conclusions

This paper studied the mobility of registered wage employment in Argentina among private manufacturing, commerce and services firms between 1996 and 2004, using transitions and labour mobility to examine the flows of workers who entered or exited registered employment, remained with the same employer or switched employers.

The magnitude and pattern of labour mobility cannot be analysed without taking into account the production structure and the macroeconomic environment of the period, which was characterised by severe instability. This instability manifested itself in the labour market in the form of high unemployment and the emergence of a large sector of wage employment outside of the social security system. The economic cycle was strongly felt during this period; between 1998 and 2002, the economy experienced a serious, prolonged recession, which resulted in the loss of 11% of private-sector jobs in the manufacturing, commerce and services sectors.

Labour mobility among Argentine workers has been high over the last eight years. The mobility rate, which includes both movement originating with the creation and destruction of jobs and that caused by the substitution of other workers for those who have left their jobs, reached a yearly average of 39%. This mobility manifested itself in the form of low job stability. Thus, of the cohort of persons under 55 years of age who were registered wage workers in the private manufacturing, commerce and services sectors in 1996, only 26% remained with the same employer in 2004.

This low job-retention rate among firms is consistent with the limited development of technological competencies and innovation during the convertibility period (Bisang, Lugones and Yoguel, 2002; Bisang, Sztulwark and Yoguel, 2004; Erbes, Motta and others, 2005), and presumably afterward, given the inertial nature of these processes.

The magnitude of labour mobility is not the only issue of interest; the impact of these processes on production and society can also be evaluated based on the prevailing pattern such mobility assumes. In Argentina, during the period studied, the dominant pattern was exclusion from the labour market; 46% of the cohort of workers who were registered in 1996 were excluded from registered wage employment in 2004 –that is, they held unregistered jobs, or were unemployed, or were inactive. Only 29% of workers were able to continue their careers at other firms. Consequently, the prevailing mobility regime, which was exclusionary, hindered the diffusion of knowledge through worker migration within the production structure.

In this general environment, however, strong evidence of labour market segmentation was found. This segmentation was based both on the heterogeneity of firms and the profile of workers. In primary sectors, employment is more stable, and mobility may adopt virtuous patterns characterised by knowledge diffusion, which increases firm productivity, and upwardly mobile trajectories for workers. Firms in the primary sector of the labour market are also the most advanced in terms of technological competencies, according to the industry surveys conducted in the country.

These specific results lead to a final question regarding the specialization profile which the Argentine economy has been adopting over the course of the last thirty years, particularly during the 1990s. Is this significant level of worker mobility the result of a productive profile which specializes in the intensive use of commodities and natural resources, and has become progressively more precarious from the standpoint of its place in the production chain, as well as the significant role of imported components with a higher knowledge content?

APPENDIX A

Construction of a panel of labour trajectories: transition and dynamics indicators

In order to construct a register of jobs with which to study labour trajectories, a list of all possible firm/person combinations was developed, using the Unified Labour Identification Codes (CUIL) and the Unified Tax Identification Codes (CUIT) listed in the SIJP during the period studied. This register summarizes the employment history of workers, from general data and personal information to the characteristics of each firm. The general information section lists the firms that currently employ (2003) and have employed (1995) each worker during the period in question, the total number of persons employed each year by each firm, the dates on which each employment relationship began and ended (total duration) and individual remuneration in each case. The personal information section lists the age and sex of each worker. The section on firm characteristics states the type of activity performed by each firm, according to the two-digit classification used by the International Standard Industrial Classification of All Economic Activities (ISIC, third revision), and specifies the age of each firm, its size,[13] the average wage quintile to which it belongs, its survival/rotation and whether it is public or private.

A panel detailing total quarterly gross remuneration was also constructed for each job. The development of the panel entailed the following: (i) choosing which months of the year would be used to measure remuneration;[14] (ii) estimating remuneration[15] and (iii) eliminating non-valid values.[16]

The register of workers and the remuneration panel were used to plot labour trajectories, based on the type of activity that generated the most income for a worker. The tracking methodology employed eliminated false lows and highs among the total number of firms opening and closing.

In order to observe the movements of workers between firms, categories and sectors, gross flows indicating status changes or transitions among the individuals studied were estimated. The panel data on trajectories were organized using transition matrices that show the status changes involved.

Two separate transition matrices can be established for activity categories and sectors. These matrices provide an assessment of the status changes being analysed. Horizontal quotients can be calculated to obtain the so-called transition rates that measure the proportion of persons migrating from a firm, a category or a sector to a different status, as well as the duration rate, which indicates the percentage of persons remaining at a firm or within a category or sector.

$$TT = (X_{12} + ... + X_{1n}) / X_{1\,t\text{-}1}$$

$$TP = X_{11} / X_{1\,t\text{-}1}$$

where TT is the transition rate and TP is the duration rate.

The matrix provides a mobility rate (TM) which indicates the percentage of persons switching firms, and is defined as follows:

The number of employed persons is represented by the letter x and the sub-indices 1, 2…, and n is used to enumerate firms. Consequently, the formal labour market at two different points in time (t-1 and t) can be represented using the following Unified Tax Identification Code (CUIT) transition matrix, where X_{ij} represents wage workers who worked at firm i at t-1 and work at firm j at t.

$$TM = 1 - (X_{11} + \ldots + X_{n\,n}) / X$$

The entry rate (TE), the exit rate (TS) and the replacement rate (TR) are defined as follows:

$$TE_1 = (X_{21} + \ldots + X_{n1}) / X$$

$$TS_1 = (X_{12} + \ldots + X_{1m}) / X$$

$$TR_1 = TE_1 / TS_1$$

Both entries and exits can be broken down as entries (exits) from the system, firm changes within a category, category changes within a sector and sector changes.

[13] In order to classify agents in each category according to size, a fixed annual sales figure was used for each stratum (micro, small, medium and large). Consequently, the interval of employed persons varies for each category of activity.

[14] In order to accommodate the seasonal nature of the statutory year-end bonus (SAC), average remuneration for March, April and May was used as the basis for calculation. Calendar quarters were not used; since the SAC may be paid in June, July, December or January, it may affect all calendar quarters, thereby creating distortions when wages are compared at two different points in time, depending on the month involved.

[15] Income subject to social security taxation was excluded, since it has a cap (US$ 4,800) which would lead to wages being underestimated, particularly in certain sectors. The other potentially useful variable for determining wages is total gross remuneration. This includes total compensatory payments, severance pay and months off, which would distort the estimate. This problem was addressed by excluding the first and last times a Unified Labour Identification Code (CUIL) was declared, and using only the months in between.

[16] Lost values (null remuneration) were identified and excluded from the estimate. Consequently, quarterly averages were calculated on the basis of March, April and May, excluding the first and last declaration of each CUIL and using the valid values in the system. An even better approach is to eliminate entries with monthly wages of less than 50 pesos.

TABLE A.1

Argentina: Transition matrix of employer changes
(Unified Tax Identification Code (CUIT))

		Employer at *t*					
		Cuit t_1	*Cuit* t_2	…	*Cuit* t_n	Displaced from the SIJP	Total
Employer at *t*-1	*Cuit* t_1	X_{11}	X_{12}	…	X_{1d}	X_{1d}	$X_{1\,t\text{-}1}$
	Cuit t_2	X_{21}	X_{22}	…	X_{2n}	X_{2d}	$X_{2\,t\text{-}1}$
	…	…	…	…	…	…	…
	Cuit t_3	X_{n1}	X_{n2}	…	X_{nn}	X_{nd}	$X_{n\,t\text{-}1}$
	Incorporated in the system	X_{ji}	X_{j2}	…	X_{jn}		X_j
	Total	X_{1t}	X_{2t}	….	X_{nt}	X_d	X

APPENDIX B

Probit model estimates (developed using STATA)

Model 1: Probability of remaining in the same firm in 2004 for the cohort of 1998 workers under 55 years of age

Number of observations	=	3 128 757
LR $chi^2(15)$	=	348 411.94
Prob > chi^2	=	0.0000
Pseudo R^2	=	0.088
Maximum likelihood	=	-1 788 936.6

Dichotomous variables	Coefficient	Standard error	*z*	*P*>*z*	Confidence interval 95%	
Males	-0.1166359	0.0017043	-68.44	0.000	-0.1199763	-0.1132955
Under 25 years of age	-0.1220224	0.0023494	-51.94	0.000	-0.1266271	-0.1174177
Between 36 and 55 years of age	0.1077425	0.0017301	62.28	0.000	0.1043516	0.1111334
No seniority (outside the firm)	-0.3491746	0.0022242	-156.99	0.000	-0.3535340	-0.3448152
No seniority (within the firm)	-0.1940453	0.0042257	-45.92	0.000	-0.2023276	-0.1857631
Three years of job seniority or more	0.3421145	0.0019610	174.46	0.000	0.3382710	0.3459580
Low remuneration	-0.3724984	0.0024342	-153.02	0.000	-0.3772694	-0.3677274
Low-medium	-0.1476501	0.0021938	-67.30	0.000	-0.1519497	-0.1433504
High	0.0570613	0.0021263	26.84	0.000	0.0528939	0.0612287
Large firms	0.0137431	0.0020980	6.55	0.000	0.0096311	0.0178551
Small firms	-0.0525585	0.0024430	-21.51	0.000	-0.0573466	-0.0477704
Microenterprises	-0.1056150	0.0029524	-35.77	0.000	-0.1114016	-0.0998284
Manufacturing	0.0285696	0.0018454	15.48	0.000	0.0249528	0.0321865
Commerce	-0.0567523	0.0021240	-26.72	0.000	-0.0609152	-0.0525893
Firms established before 1990	0.1582080	0.0017566	90.07	0.000	0.1547652	0.1616508
Constant	-0.4428057	0.0029508	-150.06	0.000	-0.4485892	-0.4370222

Goodness of fit
c= 0.5. If the probability predicted exceeds *c*, the worker remains; if not, the worker is displaced.

Prediction	Observed value 0	1	Total
0	1 864 297	694 726	2 559 023
1	260 837	308 897	569 734
Total	*2 125 134*	*1 003 623*	*3 128 757*

Accuracy ratio: 69%

Model 2: Probability of remaining in the same firm in 2004 for the cohort of 1998 workers under 55 years of age

Number of observations	=	3 128 757
LR $chi^2(15)$	=	168 415.78
Prob > chi^2	=	0.0000
Pseudo R^2	=	0.0401
Maximum likelihood	=	-2 013 459.5

Dichotomous variables	Coefficient	Standard error	*z*	*P>z*	Confidence interval 95%	
Males	0.0470104	0.0016046	29.30	0.000	0.0438655	0.0501553
Under 25 years of age	0.0440610	0.0020886	21.10	0.000	0.0399675	0.0481546
Between 36 and 55 years of age	-0.0659239	0.0016878	-39.06	0.000	-0.0692319	-0.0626160
No seniority (outside the firm)	-0.2371862	0.0019719	-120.28	0.000	-0.2410510	-0.2333214
No seniority (within the firm)	0.0369355	0.0038739	9.56	0.000	0.0293427	0.0445282
Three years of job seniority or more	0.1854828	0.0019392	95.65	0.000	0.1816821	0.1892835
Low remuneration	-0.3529746	0.0022149	-159.36	0.000	-0.3573157	-0.3486334
Low medium	-0.1383586	0.0021093	-65.59	0.000	-0.1424928	-0.1342244
High	0.0742079	0.0021613	34.34	0.000	0.0699719	0.0784439
Large firms	0.0153469	0.0020121	7.63	0.000	0.0114032	0.0192906
Small firms	-0.0675980	0.0022855	-29.58	0.000	-0.0720774	-0.0631186
Microenterprises	-0.1580432	0.0026832	-58.90	0.000	-0.1633023	-0.1527842
Manufacturing	-0.0665868	0.0017828	-37.35	0.000	-0.0700810	-0.0630926
Commerce	-0.1152796	0.0019699	-58.52	0.000	-0.1191406	-0.1114186
Firms established before 1990	0.0556851	0.0016618	33.51	0.000	0.0524279	0.0589422
Constant	0.4002829	0.0028442	140.74	0.000	0.3947083	0.4058575

Goodness of fit
$c = 0.5$. If the probability predicted exceeds c, the worker remains; if not, the worker is displaced.

Prediction	Observed value 0	1	Total
0	367 883	278 445	646 328
1	864 439	1 617 990	2 482 429
Total	*1 232 322*	*1 896 435*	*3 128 757*

Accuracy ratio: 63%

Model 3: Probability of remaining in the same firm in 2004 for the cohort of 1998 workers under 55 years of age, probit estimates.
Surviving firms

Number of observations	=	2 238 630
LR $chi^2(15)$	=	249 809.98
Prob > chi^2	=	0.0000
Pseudo R^2	=	0.0811
Maximum likelihood	=	-1 414 810.6

Dichotomous variables	Coefficient	Standard error	*z*	*P>z*	Confidence interval 95%	
No seniority (outside the firm)	-0.3868891	0.0024747	-156.34	0.000	-0.3917394	-0.3820389
No seniority (within the firm)	-0.1369946	0.0047960	-28.56	0.000	-0.1463946	-0.1275946
Three years of job seniority or more	0.4619812	0.0021798	211.94	0.000	0.4577088	0.4662535
Low remuneration	-0.2508602	0.0027529	-91.13	0.000	-0.2562558	-0.2454646
High medium	0.1436496	0.0025084	57.27	0.000	0.1387333	0.1485660
High	0.1812021	0.0026476	68.44	0.000	0.1760130	0.1863912
Large firms	-0.1204136	0.0023421	-51.41	0.000	-0.1250040	-0.1158231
Small firms	0.0701340	0.0028471	24.63	0.000	0.0645538	0.0757142
Microenterprises	0.1607260	0.0036038	44.60	0.000	0.1536628	0.1677893
Manufacturing	-0.0159479	0.0020295	-7.86	0.000	-0.1199256	-0.0119702
Commerce	-0.0817416	0.0024125	-33.88	0.000	-0.0864701	-0.0770132
Firms established before 1990	0.0495516	0.0019961	24.82	0.000	0.0456393	0.0534639
Constant	-0.2544375	0.0030310	-83.95	0.000	-0.2603782	-0.2484969

Goodness of fit
c = 0.5. If the probability predicted exceeds *c*, the worker remains; if not, the worker is displaced.

	Observed value		
Prediction	0	1	Total
0	874 860	427 660	1 302 520
1	360 172	575 938	936 110
Total	*1 235 032*	*1 003 598*	*2 238 630*

Accuracy ratio: 65%

Marginal effects
Workers with high medium and high remuneration and three or more years of seniority on the job. Large firms in manufacturing and services that have lasted more than eight years, survivors

Marginal effects after probit
y = Pr(dtr98_05) (prediction)
= 0.67205166

Dichotomous variables	dy/dx[a]	Std.	Err.	*z*	*P>z*	Confidence interval 95%	
No seniority (outside the firm)	-0.1486486	0.0010000	-148.67	0.000	-0.1506080	-0.1466890	0.0000000
No seniority (within the firm)	-0.0508680	0.0018300	-27.87	0.000	-0.0544450	-0.0472910	0.0000000
Three years of job seniority or more	0.1785923	0.0008600	206.90	0.000	0.1769000	0.1802840	1.0000000
Low remuneration	-0.0948557	0.0011200	-84.84	0.000	-0.0970470	-0.0926640	0.0000000
High medium	0.0534021	0.0009100	58.69	0.000	0.0516190	0.0551860	1.0000000
High	0.0677939	0.0009700	69.85	0.000	0.0658920	0.0696960	1.0000000
Large firms	-0.0422511	0.0008000	-52.61	0.000	-0.0438250	-0.0406770	1.0000000
Small firms	0.0249232	0.0009900	25.12	0.000	0.0229780	0.0268680	0.0000000
Microenterprises	0.0557944	0.0011900	46.96	0.000	0.0534660	0.0581230	0.0000000
Manufacturing	-0.0057404	0.0007300	-7.86	0.000	-0.0071730	-0.0043080	1.0000000
Commerce	-0.0300390	0.0009100	-33.18	0.000	-0.0318130	-0.0282650	0.0000000
Firms established before 1990	0.0180917	0.0007400	24.56	0.000	0.0166480	0.0195350	1.0000000

[a] dy/dx indicates a discrete change in the dummy variable from 0 to 1.

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