ON JOB MOBILITY AND EARNINGS GROWTH

MIRI ENDEWELD[*]

Abstract

This study examines the relationship between job mobility (mobility between employers), and wage growth. This relationship is examined in the short term (year–to-year) as well as in the medium-long term (after five years).

Findings are presented for three sub-periods of equal length within the overall period, referring to a decade and a half between 1990 and 2005, with the aim of learning about the persistence and stability of this relationship throughout demographically, economically and socially distinct periods.

The data used in this study come from the administrative data of the Tax Authorities, combined with additional demographic and economic data from other sources. According to the data, job stability noticeably diminished between the first and second half of the 1990s, and remained at a similar level afterwards.

In the short term, the results show that job mobility—even when voluntary—has a negative effect on wage growth in each of the three studied periods, regardless of market and social conditions in these periods. Nevertheless, from a cumulative perspective over a period of five years, involuntary job mobility appears to have a negative effect on wage levels in the long term as well, while the findings regarding voluntary mobility are inconclusive but may be positive. The long-term moderate increase in wages related to job mobility may be explained by the hypothesis that in the current labor market, employees regard transitions between employers as a form of investment that carries certain risks but may be fruitful in the long term, despite its short-term costs—similar to what the human capital theory suggests regarding the acquisition of education or any other professional training. The findings also show that the effect of job mobility on wage growth in the long term is not resistant to periodical conditions and changes between the different periods.

Considering the transition costs of job mobility, which are not taken into account in this study, job stability seems to be related, for the most part, to better wage growth.

[*] National Insurance Institute, Israel; mirie@nioi.gov.il

1. INTRODUCTION

Global and local changes that began in the 1980s resulted in the relinquishing of traditional work relations, reduction in the power of professional unions, and the establishment of flexible work arrangements such as personal and temporary contracts, the use of which spread to a growing variety of positions and occupations (Kalleberg, 2000). These arrangements increased versatility and adaptability in a constantly changing market. A more dynamic economy also means higher mobility in the labor market. And, indeed, most western economies that underwent such changes saw a concurrent increase in employees' job mobility, both voluntary and involuntary.

Job mobility can have a positive side. Transitions may help employees gain diverse experience across positions and employers to enhance their set of skills in a competitive age that is characterized by frequent changes (Bird, 1996). Earnings mobility, a possible result of job mobility, is also considered a moderating factor in relation to permanent inequality. However, some of the literature links job mobility to a less positive aspect—that of job instability (Bernhardt et al., 1999; Monks and Pizer, 1998) and earnings flow instability.

This study examines the effect of job stability and job mobility on short-term and long-term earnings growth. A second aim was to check whether this effect was consistent and resistant to changes between different periods or whether it changed depending on the demographic, economic and social conditions in the studied periods. The examination was conducted using administrative data that included wage data for all salaried employees in Israel who were regularly employed in the decade and a half between 1990 and 2005. In order to answer the second question, this period was divided into three sub-periods of equal length. Job stability was measured by two variables: first, comparing mobility with persistence (movers vs. stayers); and second, the number of employers between whom an employee moved in each examined period. A distinction was made between voluntary mobility and involuntary mobility.

Another distinction made between the effects over different lengths of time added a seldom-researched aspect and allowed us to discover additional dimensions of mobility-related decision making by employees. Since most previous studies examined the effect of job mobility using databases that were limited to relatively smaller groups, such as young white males (Topel & Ward, 1992; Tahlin & Le Grand, 2002), and panel data, which is naturally rarer, an extensive systematic mapping of the subject across an entire stable and working population was in itself something new. An additional contribution was the examination of the effect of job mobility in the short term versus the medium-long term.

Israel's economy and society were, in many ways, a convenient example for such a study, as they provide a good reflection of the global changes that characterized labor markets in recent decades. Phenomena such as the opening of markets, the weakening of professional unions, and massive immigration occurred in Israel in varying intensity throughout the sub-periods of the overall studied period. The studied periods were distinct in terms of the occurrence and intensity of such phenomena, and therefore enabled us to

draw conclusions regarding the consequences of market and social changes (massive immigration, reduction in labor organization and more) for the relationship examined in this study.

2. SURVEY OF EXISTING LITERATURE

It is widely accepted that involuntary mobility, that is, mobility that is not the result of an employee's choice, has a negative effect on an employee's earnings. It involves the loss of an opportunity that he may not be able to regain, periods of unemployment combined with a search for new employment in which he losses earnings, and stigmatization that makes finding a new job with similar or higher wages difficult (Keith & McWilliams, 1997; Ruhm, 1987).

However, things become more complicated when dealing with voluntary job mobility. The first attempt to examine this subject, the "movers-stayers" approach by Bluman and others (1955), made an argument that was mainly psychological: Employees who are more mobile have latent characteristics of inability and instability and, therefore, their wage dynamics indicate a decrease in wages. According to this hypothesis, people who are more mobile by their nature are punished for it in the labor market. In other words, the model links behavior with unobserved characteristics and preferences (which are usually not directly identifiable). This approach, established more than half a century ago, had very little empirical support. It referred to a labor market that no longer exists and explained transitions by an employee's personality alone, rather than by his employment characteristics (seniority, qualification) or other structural causes that were largely irrelevance to the labor market of that time.

In the new labor market of the global age, instability is a given state for some workers over which they have no control. Some of their transitions are obviously involuntary, while others, even if they could be defined as voluntary, may be the result of circumstances that push employees to look for better jobs (a dynamic of businesses opening and closing, noncompliance with the law by employers, inadequate wages or work conditions, mobility as a condition for promotion in new industries, and more). Opposite approaches were developed, which viewed the tendency to move as a positive characteristic that signaled to employers that employees were competitive, dynamic and motivated to climb the wage ladder (see, for example, Lazear, 1986). In other words, even when there was an agreement that the character of employees was an important component in explaining job mobility, there was disagreement about the direction of the relationship. Furthermore, in light of the tremendous development of the labor market in recent decades, the little consideration given to labor demand in this discussion was problematic. Structural factors are very important in explaining both transitions between employers and wage development. For example, membership in professional unions and legal protection play an important role in

reducing the number of transitions, while policies that encourage a more flexible market (by various means), increase the rate of voluntary and involuntary transitions.

Classical economic theories—the theory of human capital and the job search theories— tend to see job mobility as something positive, particularly when voluntary. According to the human capital theory, a person will not voluntarily move between employers if he expects to lose earnings. Therefore, any such mobility is expected to increase his earnings. According to the job search conception, this mobility would increase the compatibility between employee and employer and therefore increase the employee's earnings. Substantial empirical evidence was found to support this (Mincer, 1986; Bartel & Borjas, 1981; Keith & McWilliams 1997, 1999). This is particularly true for employees who did not accumulate enough specific human capital or who had something to gain from such movement, i.e. young employees, uneducated employees or low wage employees. For other employees the answer remained quite unclear. Since classical theories postulated that mobility was more dependent on an individual's characteristics and motivation, they failed to provide an explanation to possible differences in the effect of job mobility on wages in various time periods.

Another related, and far less researched, aspect is the time horizon of the effects of job mobility on wage mobility. Most studies examined the effects of transitions in the short term and did not consider possible differences between short-term effects and cumulative effects. Continued mobility may reinforce mobility's disadvantages at one point in time or reverse mobility's quick gains, because, aside from the effects on work habits and damage to accumulated human capital, and in spite of trends and the new and changing labor market, multiple transitions may be seen as more of a negative signal to employers than a single transition. Le Grand & Tahin (2002) and Fuller (2008) were among the few who made this distinction and examined the effect of mobility on wages in both the short term and the long term, although their studies were limited to certain groups of employees. The former found that in both cases earnings returns were positive, and Fuller found that the differences in the returns were not favorable in the long term.

The study of the influence of macroeconomic and social conditions on levels of mobility is sparse in literature on the subject of earnings mobility. In many cases, findings are presented with no consideration of the possible link between them and business cycles or unemployment rates at the time of measurement. The link between wage mobility and job mobility is also usually studied according to available data and without reference to various social or economic conditions. The reason for this seems to be that measurement of mobility in the labor market is usually conducted over a relatively long period of time, and therefore almost always includes better years and worse years.

Nevertheless, regarding job mobility, it was found that employees tend to be braver or less hesitant to take risks in transitioning between employers when economic conditions are good, and to remain in their place, even at the risk of diminished wages and work conditions, at times of recession and lack of opportunities (Inkson, 1995). Job mobility can

be affected not only by economic conditions but also by social and other conditions in a country: wars, technological developments, the introduction of new professions or, in contrast, the disappearance of existing professions, public policies or constitutional conditions—all of which may influence the desire to change employers (Kanter, 1989).

Contrary to classical theories, the dual market theory considers transitions between employers in the secondary market to be the result of a market failure in the labor market, which is intensified in the new age labor market (Hudson, 2006). Transitions may also signal to employers about job instability in a way that negatively impacts wages, while in the primary market, transition desirability is not dependent only on the employee's conditions characteristics in the labor market (education, occupation, seniority), but also on other institutional factors. Regarding some of the other research questions, such as the effect of job mobility on wages in the short term and the long term, or its effect in different periods, the discussion is lacking or insufficient and theoretical prediction is poor.

3. RESEARCH QUESTIONS, DATA AND METHODOLOGY

Our main research question was whether job mobility had a positive effect on the wage mobility of employees. Within this general question, three specific questions were studied:

1. How are wages affected by different types of job mobility (voluntary and involuntary)?
2. Are structural factors important, or does the nature of the relationship between the two types of mobilities remain the same in any situation?
3. Is time horizon (short term vs. long term) important when investigating the influence of job mobility on wages?

These sub-questions were all included under the "micro" investigation about the effects on employees.

The influence of job mobility on employees' wage development was examined using the Israel Tax Authority's administrative database, which included the entire population of employees in the Israeli market and their wage data (combined with databases that included the demographic and social information of individuals). Since the database did not include direct information regarding the type of mobility (voluntary or involuntary), the distinction between the different types of job mobility was made according to three alternatives, defined as follows:

1. Stayers / persistent employees – employees who did not change employers during the studied period;
2. Voluntary movers / mobile employees – employees who changed employers during the studied period, but the shift did not involve an interim cessation of employment.

To allow some flexibility regarding vacation time before moving to another employer, a short break was allowed between employers (up to two months).[1]

3. Involuntary movers / mobile employees – employees who changed employers at least once during the studied period[2], and who experienced a period of unemployment of more than two months during the transition.[3] The method of identifying involuntary mobile employees by a period of unemployment between jobs is common in studies of job mobility (Perez & Sanz, 2005; Pavlopoulos et al., 2007). However, specific information regarding the reason for this period of unemployment was not available, and it could be the result of not only unemployment but also maternity leave, a long trip abroad, etc.

In spite of our reliance on available literature on the subject, the distinction made between voluntary and involuntary mobility based on the length of work cessation between jobs was the result of the need to reflect the difference between these two groups in spite of the lack of more direct data. It is possible, however, for involuntary mobility to occur without a break between employers. Furthermore, because of the reduction of unemployment benefits during the studied period, it is possible that individuals compromised regarding jobs in cases of dismissal. This means that more individuals who were involuntarily mobile may have been assigned to the voluntarily mobile group over time. In spite of these limitations, and because of the importance of the distinction between the two groups, the benefits of the distinction outweighed its disadvantages (see also chapter 4).

Our study referred to relatively "stable" employees. It included employees who had wage data for each of the studied years throughout the various periods, and who worked at least 8 months per year (mostly to allow for maternity leaves).[4] All wage data were translated to a unified price base for the purpose of comparison between wage values in each studied period (2007 average).

It should be noted that selecting the studied population and the described adjustments of the data are common in studies that use earnings and wage data in general, and in wage mobility studies in particular (see, for example, Kopczuk et al., 2010; Haberfield, 2009). Wages that were too high or too low were truncated[5], so that the findings would represent

---

[1] Data processing according to an alternative definition allowing a break of only one month did not change the results.

[2] The studied period was one year when the data were arranged as panel data or six years when the data were arranged as cross-sectional data. See also below.

[3] This group was relatively small, since the study involved stable employees in the labor market (at least 8 working months per year, in each of the studied years of each period). For this reason, this group was ignored in some of the estimates made in this study.

[4] The rate of employees employed for at least 8 months per year is usually more than 80 percent (for example, 82 percent in 2005).

[5] Employees whose wages were lower than 10 percent of the average wage or 10 times higher than the average wage—about 2 percent of the employees in each period.

major trends and would not be influenced by extreme cases that did not represent the vast majority of the studied population.

This database has many benefits. However, despite of the fact that it faithfully represented the studied population, it was limited by the lack of important data required for some estimates, namely the education and job scope variables. Furthermore, each of the two measurements—the short-term effect of job mobility and the long-term effect of job mobility—required consideration of the endogeneity problem with the mobility variables (see below) and adjustments to estimates. The endogeneity problem appeared in several cases, of which two were suspected, for the purpose of this study, as violating the requirement for exogeneity of variables in normal OLS regressions:

(a) Unobserved heterogeneity – There is selection of individuals or unobserved heterogeneity regarding their tendency to move or stay in their work place, particularly concerning voluntary movement. For example, unknown characteristics such as conservatism, dislike of risks, a more stable character, etc. may better correlate with the character of those who choose to stay with the same employer (or who choose a more stable job to begin with, such as the public sector) compared with characteristics such as dynamism and less risk aversion among movers (voluntary).

(b) Simultaneity – Wages may depend on employees' mobility but may also be one of its causes: The tendency to stay with the same employer affects the explained variable (wages) but is also affected by it (for example: low wages encourage transition to another employer). In economic terms, the mobility variable correlates with the residual of the regression.

The link between wage development and job mobility in the short term was estimated using the fixed effect approach to panel data, which is the standard method for controlling time-invariant unforeseen heterogeneity. The aim of this method is to cancel the effects of time-invariable nonestimated characteristics of individuals, such as socioeconomic background, personal abilities and other root characteristics. When the number of observations is big, as in this case, an individual's stable part is removed from the residue by transferring all the variables of the wage equation to deviations from the average at each point of time in the data according to the following equation:

(1) $\quad EARNit = \beta_1 + \beta_{2j}X_{itj} + B_3MOB_{it} + B_4MOB_{it} + v_i + \varepsilon_{it}$

EARNit is the log of wages for individual i during year t. Xitj represents the set of additional explanatory variables for individual i during year t. MOB_3 and MOB_4 are dichotomous dummy variables that represent job stability—in our case, voluntary mobility and involuntary mobility, respectively. The residue is divided into two parts—the specific error for a specific individual (V_i), which is constant over time and therefore disappears

when measuring changes, and the residue ε_{it}, which is the residue left as expected random "noise" over time and individuals.[6]

When examining changes from year to year, it may be safely assumed that the weight of unforeseen heterogeneity that changes over time is low, since the changes are short-term changes and the use of the FE method is sufficient (Davia, 2005; Le Grand & Tahlin, 2002 – who also studied the effect of mobility in both time ranges). But when examining the cumulative effects of mobility on wages from a long-term perspective this assumption becomes more significant or less likely. We therefore used the Heckman (1979) method in addition to FE, aimed at dealing with the problem of endogeneity. Endogeneity was overcome in this case using a Mincerian regression, in which the log of wages was a function of the individual's human capital characteristics with a statistical adjustment for the odds of being included in the "movers" group, in our case. (When using this calculation for the long term, the calculation was made for voluntary mobile employees only.) Calculations using the additional method were made after converting the file to a cross-section data file (i.e. one observation per individual, including the differences between the first and last years), in order to implement the various methods in the "Heckman" methods family. The first stage was to estimate the odds of being a "stayer" or a "mover" based on various individual socioeconomic characteristics using a probit regression. The second stage was to estimate the wage regression using the visual values of the regression conducted in the first stage as an explanatory variable of the "main" regression (wages equation), thereby removing the influence of endogeneity. It should be emphasized that, in this case, the equations were estimated for voluntary mobile employees only (involuntary mobile employees were removed from the sample).

In this case, the wages equation will be:

(2) $\ln W_{i,t+5} - \ln W_{i,t} = \beta X_i{}' + \delta MOB_i + \varepsilon_I$

and in case of change in wage percentile:

(3) $PerW_{i,t+5} - PerW_{i,t} = \beta Xi' + \delta MOB_i + \varepsilon_I$

The dependent variable in Equation 2 is the difference (log) in accumulated wages between the last year and the base year. Year *t* represents the first year in each of the three studied periods (for example, the year 2000 for the third period, examining wage and employment movement during the period of 2000 to 2005), and *t+5* represents the last year regarding the wages of individual *i*. The dependent variable in Equation 3 emphasizes the relative mobility aspect of the wage ladder and indicates the number of percentiles

---

[6] Calculations made using the EF method were also made with the first difference method (which is a variation of FE and its results are similar and case of t = 2) - $y_{it} - y_{i.} + \overline{\overline{y}} = \beta(x_{it} - x_{i.} + \overline{\overline{x}}) + (\varepsilon_{it} - \varepsilon i + \overline{\overline{\varepsilon}})$ and the findings were similar.

employees moved up or down during the period (out of the total of 100 wage percentiles according to the base year of each period).

The vector X_i includes the group of explanatory variables selected as candidates for influencing wage differences between the first and last year, such as age, nationality, and others.

More specifically, we define the equation related to the choice to change employers as:

(4) $\qquad Z_i^* = W_i'\gamma + u_i$

$u_i \sim N(0, \sigma^2)$, with W_i including variables that affect this choice. Using the probit model the following condition may be established:

(5) $\qquad Z_i = \begin{cases} 1 & if \quad Z_i^* \geq 0 \\ 0 & other \end{cases}$

We posit, of course, that (ε_i, u_i) are not independent.

Together with Equation (2) and adding the dual-stage adjustment estimate for "movers", we get:

(6) $\quad E\left[\ln W_{i,t+5}\text{-}\ln W_{i,t} \middle| Z_i = 1, x_i, w_i\right] = x_i'\beta + \delta + E[\varepsilon_i | Z_i = 1, x_i, w_i]$

$$= x_i'\beta + \delta + \rho\sigma_\varepsilon \left| \frac{\phi(Z_i^*)}{\Phi(Z_i^*)} \right|$$

with ρ being the correlation coefficient of (ε_i, u_i), and with ϕ being the density function, and with Φ being the accumulated distribution function of a normal standard variable. $\left[\frac{\phi(Z_i^*)}{\Phi(Z_i^*)} \right]$ is usually referred to as the Inverse Mills Ratio. Similarly, for the population of "stayers" we get:

(7) $\quad E\left[\ln W_{i,t+5}\text{.-}\ln W_{i,t} \middle| Z_i = 0, x_i, w_i\right] = x_i'\beta + \rho\sigma_\varepsilon \left| \frac{-\phi(Z_i^*)}{1 - \Phi(Z_i^*)} \right|$

The single adjusted wages equation using the two-steps method would be:

(8) $\quad \ln W_{i,t+5}\text{-}\ln W_{i,t} = x_i'\beta + \delta Z_I + \rho\sigma_\varepsilon\lambda_i + v_i$

with $\lambda_i = \frac{\phi(Z_i^*)}{\Phi(Z_i^*)}$ for "moving" employees and $\lambda_i = \frac{-\phi(Z_i^*)}{1 - \Phi(Z_i^*)}$ for staying employees.

Estimating the coefficients of the new wages equation results in a new estimate for the coefficient δ, which takes into account the endogeneity from unforeseen characteristics that

influence transitions between employers and from the estimated simultaneous link between the variable of transition between employers and wage mobility.[7]

The problem of endogeneity in models of this type is overcome through a Mincerian regression in which the wages log is a function of the individual's human capital characteristics, with a statistical adjustment for the odds of being included in the "movers" group, in our case. This is a development of the known Heckman adjustment (1979).

Dependent variables for the purpose of checking the cumulative influence are therefore calculated with the dependent variable being (a) differences in the wages log, and (b) the employee's change by number of percentiles between the base year and the last year (which may be negative). The mobility variables (marked in Equations 2 and 3 as MOB) are also calculated as differences, more specifically as the total number of transitions between employers during the period between the first year and the sixth. It should be emphasized that these are different mobility variables than those examined in the short term (which are dichotomous: either mobile or not, see above).

The analysis was based on large samples. For the purpose of analyzing the link between mobility and wage development a random sample of a predetermined number of participants was extracted (100,000 for each period) among those who worked consecutively in each of the three periods: 1990–1995, 1995–2000 and 2000–2005. In the short-term analysis each individual had 6 years of data, so the total sample was 600,000 ("balanced panel"). In the long-term analysis the sample was 100,000 individuals (in case of a cross-section data file arrangement) or 200,000 individuals (in case of a first and last year panel).

4. THE CHARACTERISTICS OF THE THREE STUDIED PERIODS

The three studied periods in this work were equal in terms of their length, and their "cut" was arithmetic and arbitrary (6 years per period). Nevertheless, their economic and social indicators showed distinct conditions for each. Table 1 below summarizes the main macroeconomic trends related to the study, and Table 2 shows measurements for job mobility in the three studied periods.

---

[7] Calculations using the two-steps method, where the first step includes an equation to identify the odds of being in the risk group or in the examined group, are made even when the first equation is not a probit/logit equation but an OLS, if the examined variable is not dichotomous, although the principle of removing endogeneity from the main equation by identifying errors in the secondary equation is similar. Nevertheless, common opinion among experts is that using the first equation with a probit model, if possible, provides better results.

The tables show that average performance in the first two periods was similar, although wages increased at a higher rate during the second period, indicating the integration of immigrants in the labor market (Ekstein et al., 2006).[8] The first period was characterized by significant demographic changes following the great immigration from the former Soviet Union (the relatively high number in the second period is affected by its base year, 1995; the numbers are much lower following that year). Job mobility, both voluntary and involuntary, increased significantly (around 10%), with similar growth levels in the first and second periods. This can probably be explained by the great demographic changes that occurred following the immigration of the 1990s, rather than economic performance. However, in the third period, when growth was stagnant and real wages declined, data regarding job mobility indicated a certain increase in the rate of involuntary mobility, along with a decrease in the rate of voluntary mobility, correlating to the described market development. The data presented in Table 2 also show a significant difference between voluntary movers and involuntary movers in terms of months of unemployment between employers. While for voluntary movers (who mostly did not experience unemployment at all) the average number of unemployment months between employers was 0.1, for involuntary movers, as defined for the purpose of this study, the average number of unemployment months was around 4, regardless of the examined period.[9]

Table 1
Economic and demographic indicators for the studied periods

Period / indicator	1990–1995	1995–2000	2000–2005
Annual average growth rate (per capita GDP)	2.6	2.8	0
Average real change in wages for senior position (%)	0.7	3.2	-0.6
Average employment rate (ages 25 – 64)	64.3	68.3	67.3
Average unemployment rate (ages 25 – 64)	9.2	8.1	10.2
Number of immigrants	683,992	412,385	212,362

* Based on data from the Central Bureau of Statistics, the Bank of Israel statistical series, and the Ministry of Immigrant Absorption.

---

[8] This point is validated particularly in this study. Since stable employees (i.e. employees who worked in each of the 6 years making up the period) were identified in each studied period (see database chapter below), very few immigrants met this condition for the first period. This is emphasized in Table A below: From a negligible share in the first period, immigrants accounted for 10 percent of the population of employees in the second period.

[9] An examination showed a negligible difference between men and women in this regard.

Table 2
Job mobility measurements for the studied periods, entire population

Period	1990–1995	1995–2000	2000–2005	Rate of cumulative change
Measurements of mobility between employers				
Number of movers	63,712	84,540	77,732	22%
Percentage of movers (out of 200,000)	31.9	42.3	38.9	22%
Mobility type				
Stayers	68.1	57.7	61.1	-10%
Voluntary movers	29.1	38.7	34.8	20%
Involuntary movers	2.8	3.6	4.1	46%
Average number of transitions per employee	0.77	1	0.96	24%
Average number of transitions for movers	2.43	2.36	2.48	24%
Average number of unemployment months:				
Voluntary movers	0.1	0.1	0.09	
Involuntary movers	4.14	4.08	4.12	

* The maximum number of unemployment months was 8 since the sample only included employees who worked at least 8 months per year (where consecutive unemployment started in the last 4 months of one year and continued for the first 4 months of the following year, giving 8 months of unemployment).

Despite the difficulty in accurately estimating the number of foreign workers, reflecting Israel's rapid entry into the globalization process, the information from all data sources (CBS, the Ministry of Economy, and more) show that they totaled several thousand during the first half of the 1990s, multiplied by 4 or 5 during the second half of the 1990s, and reached about 250,000 in the first half of the 2000s, according to conservative estimates (Samyonov and Lerntal, 2004). Foreign workers are not included in the wage databases for employees in Israel, but they have an indirect influence on the wages and employment levels of low-skilled local labor in the market. Another important characteristic of the second half of the 1990s was a dramatic decline of about 60 percent in the rate of organized workers, with the entry into force of a national health insurance law making membership with health care providers independent of membership in the General Organization of Workers (Histadrut). This rate was around 49 percent in the middle of the 1990s (compared with its record high of 83 percent in the 1970s) (Cohen et al., 2007), and continued to decline to 37 percent by the end of the studied period (2006).

The third period, the first half of the 2000s, was characterized by many ups and downs for such a relatively short period. In 2000 the market exhibited impressive growth of around 6 percent in per capita GDP, with a concurrent increase in real wages. Between 2001 and 2003 the market experienced a serious recession. Per capita GDP declined by 2.6 percent in

2001, and 2.5 percent in 2002. Following this drop, real wages and employment declined. In 2004 and 2005 the market recovered and showed improved growth (more than 3 percent increase in per capita GDP in each of these years). The unemployment rate was still high, at close to 10 percent, higher than it was in both halves of the 1990s, but the labor force participation rate increased and employment circles expanded. On average, per capita GDP increased by a lower rate than in both halves of the 1990s (1.2 percent).

This survey of the demographic, economic and social trends that characterized each of the three studied periods is intended to provide a background to the examination of one of the study's sub-questions related to the persistence of the influence of job mobility on wage mobility. Although the three periods are adjacent, they are distinguishable from each other. If the effect of job mobility on the wage growth of different types of employees is found to be similar in all three periods, this would mean that these patterns are persistent and do not change with structural changes, and vice-versa.

Table 3 below presents two measurements for job stability—the average number of transitions (between employers) and the number of "stayers" (persistent employees)—for the three studied periods, with information for different groups. As expected, job stability increased with age. Women were generally more stable (possibly because of their share in the public sector), although gender differences diminished in the third period. Jews were more stable than Arabs. Immigrants and young persons (up to 34 years old) were the least stable of all the groups in the three periods. An examination by occupation (in the base year of each period) showed that stability was highest in the banking and finance industry, followed by the public sector, and after that, traditional sectors such as construction, agriculture and manufacturing. Mobility or job instability was the highest at the wage level extremes—the sector with the highest wages (high-tech) and the sector with the lowest wages (other services)—, with the high-tech sector leading this category in the second and third periods.

Table 3
Measurements of job stability for the three studied periods by population group

	1990–1995		1995–2000		2000–2005	
	Average number of transitions	Rate of stayers	Average number of transitions	Rate of stayers	Average number of transitions	Rate Of stayers
Men	0.81	67%	1.05	54%	0.98	60%
Women	0.72	70%	0.94	63%	0.94	63%
Aged up to 34	1.1	58%	1.46	43%	1.42	48%
Aged 35 – 50	0.65	72%	0.82	63%	0.77	67%
Aged 51 and above	0.49	77%	0.62	72%	0.62	71%
Jews	0.77	68%	1	58%	0.97	61%
Arabs	0.88	68%	1.02	59%	0.84	66%
Seniors	0.77	68%	0.93	60%	0.88	63%
Immigrants	1.43	42%	1.5	43%	1.37	49%
Base year sectors:						
Construction, agriculture and manufacturing	1	59%	1.05	57%	0.84	64%
High-tech	0.84	61%	1.13	48%	1.16	47%
Public sector	0.56	77%	0.77	62%	0.72	71%
Banking and finance	0.28	87%	0.41	81%	0.51	76%
Unskilled services	0.96	61%	1.29	52%	1.26	52%
Average	0.77	68%	1	58%	0.96	61%

A distribution of employees by various characteristics during the three periods, including wage levels, is presented in the appendix to this work. The data in Table 3 show that voluntary job mobility significantly increased between the first and second periods, and moderated slightly during the third period, though it remained much higher than in the first period. Conversely, involuntary mobility increased throughout all three periods.

5. FINDINGS

The short-term effect of job mobility on wages (from year to year) was examined using the fixed effect method. The findings from the two methods presented in Table 4 for the general population showed that when the rest of the explanatory variables were constant, on average, the relation between job mobility and wage changes was negative both for voluntary movers and involuntary movers (the latter two are dichotomous variables). Nevertheless, as expected, the penalty for involuntary movers was much higher, in fact double. The penalty reached wage reductions of 6 percent in the first period, 7 percent in the second period, and 8 percent in the third period for voluntary movers, compared with 14 percent, 15 percent and 16.5 percent respectively for involuntary movers. In general, the penalties for both voluntary and involuntary mobility were slightly higher for women that

for men (except for the third period). In addition, the penalties were similar in all three periods, although with an increasing trend (for both types of mobility).

Table 4
Findings from Fixed Effect (FE) regressions for the general population*

	1990 – 1995			1995 – 2000			2000 – 2005		
	All	Men	Women	All	Men	Women	All	Men	Women
Voluntary movers	-0.062***	-0.057***	-0.071***	-0.071***	-0.063***	-0.08***	-0.08***	-0.078***	-0.083***
	-0.001	-0.002	-0.002	-0.001	-0.001	-0.002	-0.001	-0.001	-0.001
Involuntary movers	-0.143***	-0.125***	-0.169***	-0.150***	-0.140***	-0.16***	-0.165***	-0.169***	-0.160***
	-0.004	-0.006	-0.006	-0.004	-0.005	-0.005	-0.003	-0.004	-0.005
Age**	0.126***	0.127***	0.122***	0.134***	0.136***	0.130***	0.101***	0.106***	0.094***
	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Age squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	0	0	0	0	0	0	0	0	0
Sectors (base: unskilled services)									
Traditional sectors	0.029***	0.027***	0.042***	0.062***	0.066***	0.060***	0.030***	0.031***	0.033***
	-0.002	-0.002	-0.003	-0.002	-0.003	-0.004	-0.002	-0.002	-0.003
High-tech	0.071***	0.072***	0.070***	0.176***	0.192***	0.145***	0.150***	0.161***	0.137***
	-0.003	-0.004	-0.005	-0.003	-0.004	-0.005	-0.003	-0.004	-0.005
Public sector	0.049***	0.057***	0.037***	0.041***	0.057***	0.028***	-0.001	0.019***	-0.014***
	-0.001	-0.002	-0.002	-0.002	-0.003	-0.003	-0.002	-0.003	-0.002
Finance	-0.014***	0.005	-0.035***	0.106***	0.101***	0.109***	0.101***	0.112***	0.094***
	-0.003	-0.005	-0.004	-0.005	-0.008	-0.008	-0.005	-0.007	-0.007
Married	0.015*	0.048***	0.013	0.011	0.017	0.014	0.011	0.040**	0.006
	-0.007	-0.012	-0.008	-0.007	-0.012	-0.008	-0.007	-0.013	-0.009
Bachelors***	-0.021**	-0.023	0.069***	-0.054***	-0.084***	0.040***	-0.030***	-0.027*	0.025**
	-0.007	-0.012	-0.01	-0.007	-0.012	-0.01	-0.008	-0.014	-0.01
Divorced	0.043***	0.052***	0.063***	0.023**	0.008	0.048***	0.020*	0.021	0.040***
	-0.008	-0.013	-0.009	-0.008	-0.013	-0.009	-0.008	-0.014	-0.009
_cons	5.306***	5.556***	4.952***	5.298***	5.511***	5.039***	6.490***	6.648***	6.292***
	-0.018	-0.026	-0.027	-0.018	-0.026	-0.027	-0.018	-0.026	-0.025
N	600,000	349,158	250,842	600,000	333,222	266,778	600,000	319,314	280,686
R^2	0.206	0.179	0.255	0.181	0.18	0.187	0.091	0.094	0.092
adj. R^2	0.048	0.015	0.107	0.018	0.016	0.024	-0.091	-0.087	-0.09

* This table examines the short-term effect of mobility variables on wages ("long panel") in the three studied periods. Dependent variable: wages log. Regressions also include variables from participating years, the coefficients of which are not presented.

** In a version where the interaction variable of age x mobility was added, it was found that mobility reduces the wages of older adults (50–65) more than it does for younger employees.

*** A change to a personal status of "single" is relatively rare and can only occur in a transition from "other" (such as a registered partner) to "single".

The following calculations of cumulative mobility were made in order to find the effect of job mobility on wages over a medium-long term of five years. First the Heckman method was used for calculating the regression of change in percentile between the first and last years, after deducting the effect of the endogeneity of the "voluntary movers" variable It presented the direct effect of the "handled" variable, voluntary movers in this case, on the wage ratio between the end of the period and its beginning (or the wage level ratio in percentiles).

Table 5 presents the results of regression for voluntary movers, with the dependent variable being the change in the percentile number between the first and last years (which may be either positive or negative). For the purpose of comparison, and in order to understand the contribution of the use of this type of regression, the calculation was also made using a regular OLS regression. The second part of the table introduces estimates required with this system for the first stage, the probit regression, where the odds ratio of being a voluntary mover is presented for each period.

The results achieved by this method justified its use: The Wald test for examining the correspondence of the model provided an indication regarding the overall quality of the model and regression coefficients, and was significant in all performed variations (Chi-squared test). Technically, the values of Rho representing unobserved heterogeneity were found to be significant. In addition, Rho in the regressions was positive in the first period and negative in the second and third periods.

The Probit selection equation—the second equation (the first being the wages equation)—is presented at the bottom of Table 5. It allowed us to identify the probability of being included in the mobile employees' group. The odds ratio values of the Probit regression showed that, generally, occupational and demographic characteristics equally anticipate the odds of being mobile in different periods, albeit with a few differences.

For a significant part of the population, the tendency to be mobile between employers was different or inverted in the second period compared to the other two periods. For example, women tended to be less voluntary mobile (deducting the influence of employment in the public sector, which by itself reduces the chances of mobility by dozens of percent compared to service employees). The Probit regression coefficient in their case was -3.1 percent for the first period and -3.6 percent for the third period. However, in the second period, their chances increased, and the regression coefficient became positive (3.2 percent). Among Arabs, the situation was similar: in the first and third periods, their chances of being voluntary mobile were 10 percent lower than among Jews, while in the second periods, their chances were similar to those of Jews. As expected, immigrants and young persons were more mobile in the labor market, with each year of age reducing the chances of being included in the voluntary mobile group by 2 percent in all periods. Being an immigrant increased a person's chances of being mobile by about 30 percent, except in the second period, where this rate reached 50 percent.

Table 5
OLS and Heckman type (HE) regression for voluntary movers

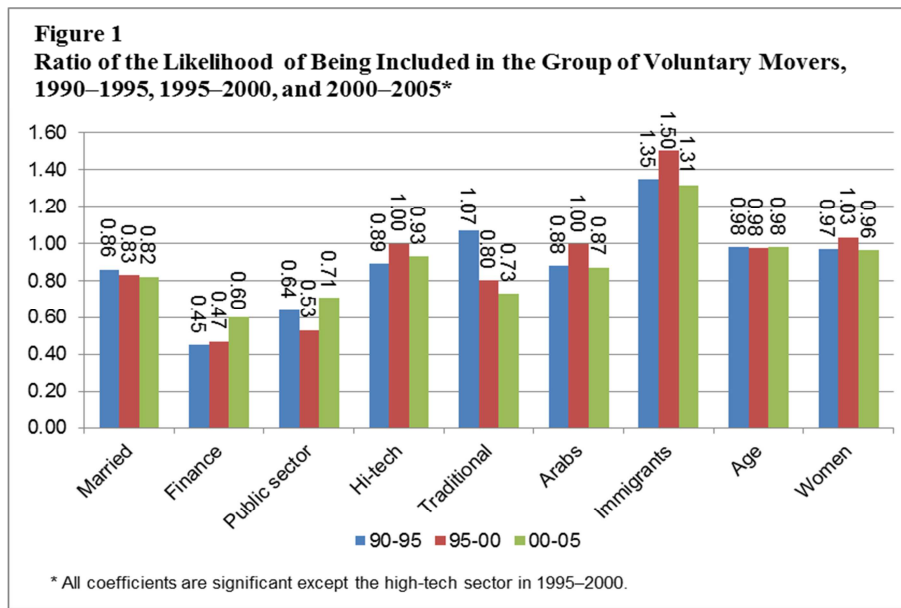|	90–95 OLS	90–95 HE	95–00 OLS	95–00 HE	00–05 OLS	00–05 HE
Main regression						
Voluntary mobile	0.916***	-4.170***	2.342***	5.227***	0.242*	0.892**
	-0.136	-0.39	-0.123	-0.295	-0.115	-0.329
Women	-0.865***	0.014	0.022	0.071	0.09	0.236*
	-0.119	-0.119	-0.11	-0.107	-0.107	-0.102
Age	-1.255***	-1.301***	-1.396***	-1.336***	-1.517***	-1.486***
	-0.055	-0.056	-0.051	-0.052	-0.05	-0.05
Age squared	0.010***	0.010***	0.011***	0.011***	0.013***	0.013***
	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Immigrants	9.125***	9.005***	4.856***	4.235***	0.958***	0.776***
	-0.87	-0.89	-0.169	-0.174	-0.139	-0.142
Values	-0.505*	-0.570**	-3.466***	-3.935***	-2.684***	-2.626***
	-0.217	-0.221	-0.203	-0.203	-0.188	-0.187
Traditional sectors	-2.490***		-2.031***		0.237	
	-0.17		-0.152		-0.141	
High-tech	4.384***		2.247***		0.044	
	-0.248		-0.241		-0.199	
Public sector	5.699***		-1.472***		0.488***	
	-0.136		-0.13		-0.127	
Finance	-2.517***		2.708***		1.975***	
	-0.263		-0.26		-0.258	
_cons	31.221***	35.509***	36.283***	33.400***	37.893***	37.221***
	-1.097	-1.141	-1.018	-1.043	-0.986	-1.016
Probit: movers						
Women		-0.031**		0.032***		-0.036***
		-0.01		-0.009		-0.009
Age		-0.020***		-0.023***		-0.021***
		-0.001		-0.001		0
Immigrants		0.297***		0.406***		0.273***
		-0.064		-0.013		-0.012
Values		-0.127***		-0.005		-0.140***
		-0.017		-0.017		-0.017
Traditional sectors		0.065***		-0.224***		-0.313***
		-0.013		-0.012		-0.012
High-tech		-0.120***		0.003		-0.073***
		-0.019		-0.016		-0.016
Public sector		-0.446***		-0.635***		-0.338***
		-0.011		-0.011		-0.011
Finance		-0.792***		-0.764***		-0.509***
		-0.026		-0.025		-0.024
Married		-0.153***		-0.190***		-0.195***
		-0.012		-0.011		-0.011
_cons		0.412***		0.706***		0.598***
		-0.023		-0.022		-0.021
N	97,914	97,914	97,387	97,387	96,887	96,887
Rho		0.145		-0.101		-0.028
Sigma		18.057		16.461		15.705
R^2 (OLS) / Wald test (Heckman)	0.08	0	0.09	0	0.07	0

[*] Dependent variable: the change in the percentile number between the first and last years, 1990–1995, 1995–2000 and 2000–2005.

The regression coefficients were all significant, except for the high-tech sector in the second period, which had a relatively small number of employees. In addition, there were forces in this sector that may have caused inverse results concerning the effects of mobility. While employees in this sector were not protected—with a negligible rate of organized labor—mobility was mostly voluntary, since voluntary mobility, especially among higher-paid employees, is an integral part of the "culture" in this sector, which is characterized by innovation and continuous change.

In addition to the public sector, the banking and finance sector is also characterized by a relatively high rate of organization. There, the odds of being included in the mobile group were dozens of percent lower than service workers, the most mobile of all the occupation sectors, although an upward trend was observed in the third period compared to the first and second periods. In the traditional sectors of agriculture, construction and manufacturing (excluding high-tech), there were significant changes between the periods: The odds of being included in the mobile group were positive in the first studied period, and significantly negative in the third. It is possible that the cause for this change was foreign workers who joined the construction sector during the second and mostly the third periods. These workers, who were not included in the data, took the places of previous mobile workers in this sector. However, local employees who stayed in these sectors enjoyed greater job stability. In other words, two segments were apparently created within the same sector, with the first segment–citizens–enjoying stability, while the second segment–work migrants–was subject to frequent transitions.

The condition of women was close to the average in both periods. Generally, the variance between the different population groups regarding the chances of being mobile (represented by the height differences between the columns in Figure 1) was much greater in the second period than in the other periods. This shows that job mobility was less focused on specific population groups, and became a characteristic of the entire labor market.

A first calculation, without dealing with the problem of endogeneity—the OLS—produced positive results, although at a low level, for voluntary mobility in each of the three periods. In the first period, voluntary mobile employees raised their relative wages slightly, going up 0.9 wage percentiles (i.e. an average of 0.2 percentiles per year). In the second period, for which previous findings indicated that transitions were more beneficial, the returns increased to 2.3 percentiles, i.e. half a percentile per year. In the third period, the returns fell back to an even lower level than in the first period, at 0.2 percentiles over 5 years. These consistent findings, showing a positive wage return in the long term (although at low levels in two of the three periods), were in line with the projections of job search theories and, to some extent, of the human capital theory—both postulating that mobility is mainly the result of a rational decision made by an individual according to his or her position and status and how beneficial the transition is.

Figure 1
Ratio of the Likelihood of Being Included in the Group of Voluntary Movers, 1990–1995, 1995–2000, and 2000–2005*

* All coefficients are significant except the high-tech sector in 1995–2000.

However, when we examined the results of the regressions that dealt with the endogeneity problem of the mobility variable, the findings were different. On average, voluntary mobility led to a decrease of 4 percentiles in the first period, an increase of 5 percentiles in the second period, and a more or less even result in the third period (the regression coefficients of the variable "movers"). In other words, the returns on voluntary mobility may greatly differ between periods even before examining trends among employees of different groups. For the general population of employees, even before analyzing wage levels, we may conclude that, in our case, a simple regression that does not consider the problem of endogeneity provides results that are more similar to the results expected by the theories than more complex regressions that deduct the endogeneity component of the mobility variable. A test of the differences between the coefficients of the "voluntary mobile" variable showed significant differences between the periods.[10]

Table 6 presents the findings of further analysis of the research question in the long term. The calculation was repeated with short longitudinal data. Each individual had two records—data from the first year and data from the last year. The last year's data included the cumulative number of transitions (both voluntary and involuntary) and the cumulative change in wages (represented by the difference between the wage log for the base and last years of each period), so that the difference between the base year and the last year included the total number of transitions and the total change in wages throughout the entire period. Similar to the examination of the research question in the short term, the regression

---

[10] The results of this test will be provided upon request.

coefficients were calculated using the fixed effects method. Therefore, the results did not include coefficients for constant individual variables over time. In addition to the coefficients of the normal control variables, the findings included estimates of the influence of two mobility variables—the number of voluntary transitions and the number of involuntary transitions—on cumulative wage changes.[11] These variables were different than the mobility variables used in the treatment effect analysis, where they referred to mobility itself, while here they referred to the number of transitions.

The results of an FE regression—this time for two years only, the first and the last—were intended to examine the contribution of long-term job mobility in the three studied periods by gender distribution (Table 6). The resulting impression was different than the one from the analysis of the full longitudinal data that examined the year-to-year influence using the FE method. First, penalties for transitions were much smaller in the long term than in the short term, and in the second period, voluntary transitions even contributed to an increase in wages for both men and women. As expected by the theory, involuntary transitions also had a consistent negative effect on wages in the long term.

In the second period, not only did the return on voluntary transitions become positive, but the penalties for involuntary transitions also significantly declined. As seen earlier, the second period was characterized by the integration of immigrants into the labor market after their entry into the market in the first period, as well as by a drastic decrease in labor organization with the entry into force of a national health insurance law in 1995, and the separation between membership in a professional union and membership with a health care provider. The data in the beginning of the chapter also show a sharp increase in the rate of transitions. These factors may have increased the need for transitions between employers in the labor market in order to achieve a new equilibrium, resulting in compensation to employees who transitioned between employers during this period (women were compensated slightly more than men).

In all cases, the effect of middle-long term voluntary transitions was much more positive than the effect seen in the short-term analyses. The reason for the differences in wage returns between short-term transitions and middle-long term transitions could be that voluntary transitions were seen by the employee, justifiably, as a "long-term investment", similar to the roles played by training or education in the human capital theory. In some cases, it is possible that the experience gained by various types of employers in a global and technological age that requires dynamism and quick adaptability to new situations gives an advantage to mobile employees, who compound their experience from difference types of work places and their knowledge about various forms of work.

---

[11] An attempt to create an additional variable for "the number of voluntary transitions squared" in order to examine the effect of a great number of transitions on wages resulted in multicollinearity in some cases (due to multiple cases with no transitions at all), and was therefore abandoned. In cases where multicollinearity did not occur and the variable was found to be significant, its effect on wages was negative, similar to the findings in other studies.

Table 6
The effect of the accumulated number of transitions over a five-year period on employee position by wage distribution and gender, FE, three periods

	1990–1995			1995–2000			2000–2005		
	All	Men	Women	All	Men	Women	All	Men	Women
No. of voluntary transitions	-0.215***	-0.180*	-0.270**	0.289***	0.244**	0.330***	-0.471***	0.092	-0.587***
	-0.06	-0.075	-0.1	-0.053	-0.075	-0.075	-0.049	-0.061	-0.067
No. of involuntary transitions	-2.349***	-2.600***	-1.908***	-1.244***	-1.303***	-0.978*	-2.684***	-0.163	-2.642***
	-0.305	-0.38	-0.506	-0.26	-0.346	-0.393	-0.232	-0.295	-0.306
Age	3.488***	3.704***	3.105***	3.560***	3.677***	3.393***	3.526***	4.603***	3.878***
	-0.06	-0.077	-0.098	-0.06	-0.081	-0.09	-0.055	-0.11	-0.075
Age squared	-0.042***	-0.045***	-0.037***	-0.043***	-0.045***	-0.040***	-0.041***	-0.039***	-0.046***
	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Sector (base: services)									
Traditional sectors	4.210***	3.846***	5.390***	2.368***	2.892***	1.915***	0.556**	1.660***	0.642**
	-0.254	-0.302	-0.47	-0.233	-0.291	-0.411	-0.2	-0.388	-0.248
High-tech	5.189***	5.070***	5.160***	9.794***	10.99***	7.617***	7.775***	17.09***	8.399***
	-0.447	-0.531	-0.823	-0.427	-0.534	-0.707	-0.395	-1.177	-0.486
Finance	2.250***	2.708***	1.868***	3.064***	4.359***	2.000***	0.526**	1.166**	1.502***
	-0.241	-0.335	-0.348	-0.236	-0.354	-0.315	-0.199	-0.372	-0.297
Public sector	4.806***	6.063***	3.494***	5.131***	5.327***	4.846***	5.817***	10.45***	6.212***
	-0.749	-1.076	-1.025	-0.753	-1.104	-1.025	-0.704	-1.706	-1.091
Married	0.338	1.4	0.219	0.716	0.77	1.083	-0.334	-0.959	2.748*
	-0.606	-0.956	-0.77	-0.571	-1.061	-0.672	-0.647	-1.107	-1.354
Single	-3.726***	-5.104***	3.656***	-4.504***	-6.570***	1.151	-4.605***	-8.931***	-2.922*
	-0.7	-1.034	-1.046	-0.662	-1.131	-0.922	-0.711	-1.256	-1.396
Divorced	1.915**	1.607	3.241***	1.495*	0.043	3.259***	0.37	0.057	2.009
	-0.725	-1.115	-0.945	-0.655	-1.156	-0.806	-0.711	-1.266	-1.417
_cons	-21.094***	-25.473***	-15.023***	-22.506***	-23.971***	-20.934***	-21.316***	-104.9***	-30.385***
	-1.437	-1.922	-2.222	-1.43	-2.087	-2.059	-1.366	-2.673	-2.141
N	200,000	116,386	83,614	200,000	111,074	88,926	200,000	39,898	106,438
R²	0.052	0.071	0.034	0.079	0.101	0.054	0.075	0.295	0.1

* Dependent variable: the change in the number of wage percentiles between the last and first years.

6. DISCUSSION AND CONCLUSIONS

This work examines the effect of job mobility on the development of employees' earnings. This effect was examined in the short term and the medium-long term, as well as in different periods, based on a large sample comprised of all the employees who were persistently employed during each of the periods: 1990–1995, 1995–2000 and 2000–2005. The statistical methods used were intended to overcome structural bias related to the endogeneity of the mobility variables in the examination of the effect of mobility on wages.

(It should be noted that despite the use of these methods, the link found is not necessarily causal.) Because the database was large and extensive, the study was able to include analyses by gender groups and separate wage levels, in order to draw conclusions regarding the different effects of the examined variables on the wages of different groups.

In general, it seems that the effect of job mobility on employees' wage development is inconsistent and changes along two main axes: time perspective (short-term versus long-term), and the studied period. The findings consistently showed that job mobility, including mobility that is commonly defined as involuntary, entailed a negative wage return in the short term (up to a year). The findings showed that employees who stayed with the same employer benefited not only from a beneficial stable flow of earnings but also from a higher wage increase than any type of mobile employee. In the short term, job mobility, both voluntary and involuntary, was accompanied by twice as much penalty, and even more in a case of involuntary mobility. The findings contradict classical theories, such as the theories of job search conception, that consider job mobility as generally beneficial to employees when looking for positions that better suit their skills.

However, when dealing with a long term of around five years, trends were mixed: Sometimes mobility contributed to wages, although in a limited way (an increase of two percentiles per year), and sometimes it decreased wages even in the long term. Another finding was that gender differences existed but were not large, with women mostly on their negative side, i.e. their penalties for transitions were slightly greater than those of men.

Nevertheless, from a cumulative perspective over a period of five years, voluntary mobility may have had moderate positive results. This finding may be interpreted as follows: In the current labor market, employees regard transitions between employers as a kind of investment that carries certain risks but can also be fruitful in the long term, despite of its short-term costs—similar to what the theory of human capital suggests regarding the acquisition of education or any other professional training.

It should be noted that job mobility also carries transition costs. These include not only interim months of unemployment with no earnings (almost entirely absent from this analysis, which refers to persistent employees in the labor market), but also nonmonetary costs such as the need to adjust to a new employer, team and work environment, the stress of a trial period, etc. If these costs are added to the costs incurred by a reduction in wage level, the conclusion is that, except in specific periods, these transitions are generally not beneficial to employees, even if they somehow benefit the economy by increasing the flexibility of the labor market and reducing the frictional unemployment level. It may be that the way to enjoy both worlds passes through the social security system—through adequate legislation to make the terms of entitlement to unemployment benefits and professional training more flexible.

7. BIBLIOGRAPHY

Bernhardt, A., M. Morris, M. S. Handcock, and M. A. Scott (1999), "Trends in Job Instability and Wages for Young Adult Men", *Journal of Labor Economics*, 17(4): S65–S90.

Bird, A. (1996), "Careers as Repositories of Knowledge: Considerations for Boundaryless Careers", in M. B. Arthur & D. M. Rousseau (eds.), The Boundaryless Career: A New Employment Principle for a New Organizational Era (pp. 150–168). New York: Oxford University Press

Blumen, I., M. Kogan and P. J. MacCarthy (1955), "The Industrial Mobility of Labor as a Probability Process", Cornell Studies in Industrial and Labor Relations, vol. VI. Ithaca, New York: Cornell University.

Cohen, Y., Y. Haberfeld, T. Kristal, and G. Mundlak (2007), "The State of Organized Labor in Israel", *Journal of Labor Research*, 28(2): 255–273.

Davia, M. A. (2005), " Job Mobility and Wage Mobility at the Beginning of the Working Career: A Comparative View Across Europe", ISER Working Papers 2005-03.

Ekstein, Z., S. Cohen-Goldiner and T. Larom (2006), "A Decade of Integration of Immigrants from the Former Soviet Union into the Israeli Labor Market" working paper number 5/2006 of The Pinhas Sapir Center for Development, Tel Aviv University (in Hebrew).

Endeweld, M. (2012) "Wage Mobility and Inequality in Israel, 1990–2005", National Insurance Institute working paper number 109(in Hebrew).

Fuller, S. (2008), "Job Mobility and Wage Trajectories for Men and Women in the United States", *American Sociological Review*, Vol. 73, No. 1.

Haberfeld, Y. (2009), "Group-Based Differences in Intra-Generational Earnings Mobility in Israel", *Research in Social Stratification and Mobility*, 27(2): 79–91.

Heckman, J. J. (1979), "Sample Selection Bias as a Specification Error", *Econometrica*, 47: 153–162.

Hodson, R. (1978), "Labor in the Monopoly, Competitive, and State Sectors of Production" *Politics and Society*, 8(3–4): 429–480.

Hudson, K. (2007), "The New Labor Market Segmentation: Labor Market Dualism in the New Economy." *Social Science Research*, 27: 286–312.

Inkson, K. (1995), "Effects of Changing Economic Conditions on Managerial Job Changes and Careers", *British Journal of Management*, 6: 183–194.

Kalleberg, A. (2000), "Nonstandard Employment Relations: Part-time, Temporary and Contract Work", *Annual Review of Sociology*, 26: 341–365.

Kanter, R. M. (1989), "Careers and the Wealth of Nations: A Macro Perspective on the Structure and Implications of Career Forms", in M. B. Arthur, D. T. Hall, & B. S. Lawrence (Eds.), *Handbook of Career Theory* (pp. 506–521). Cambridge: Cambridge University Press.

Keith, K. and A. McWilliams (1995), "Wage Effects of Cumulative Job Mobility" *Industrial and Labor Relations Review*, 49(1): 121–137.

_____ (1999), "The Returns to Mobility and Job Search by Gender", Industrial and Labor Relations Review 52(3): 460-477.

Kopczuk, W., E. Saez, and J. Song (2010), "Earnings Inequality and Mobility in the United States: Evidence from Social Security Data since 1937", *Quarterly Journal of Economics*, 125(1): 1–45.

Lazear, E., (1986), "Raids and Offer Matching", in R. Ehrenberg, ed., *Research in Labour Economics*, vol. 8, London: JAI Press Inc., pp. 141–165.

Le Grand, C. and M. Tåhlin (2002), "Job Mobility and Earnings Growth", *European Sociological Review*, 18(4): 381–400.

Mincer, J. and S. Polachek (1974), "Family Investments in Human Capital: Earnings of Women", *Journal of Political Economy*, 82(2): S76–S108.

Mincer, J. (1986) "Wage Changes in Job Changes," in R. G. Ehrenberg, ed, *Research in Labor Economics*, vol. 8 (Part A) London: JAI Press Inc., pp. 171–97.

Mincer, J. and B. Jovanovic (1979), "Labor Mobility and Wages," NBER Working Paper No. 357.

Monks, J. and S. Pizer (1998), "Trends in Voluntary and Involuntary Job Turnover", *Industrial Relations*, 37(4): 440–459.

OECD (1997), "Earnings Mobility, Taking a Longer Run View", *Employment Outlook*, OECD Paris, pp. 27–61.

Pavlopoulos, D., D. Fouarge, R. Muffels, and J. Vermunt (2007), "Job Mobility and Wage Mobility of High- and Low-paid Workers", Schmollers Jahrbuch, 127(1): 47–58.

Pavlopoulos D., R. Muffels, and Vermunt, J. (2007), "Wage Mobility in Europe. A Comparative Analysis Using Restricted Multinomial Logit Regression", OSA Working Paper WP2005-24.

Perez, J. I. G., and Y. R. Sanz (2005), "Wage Changes Through Job Mobility in Europe: A Multinomial Endogenous Switching Approach", *Labour Economics* 12(4): 531–555.

Semyonov, M. and T. Lerental (2004), "Labor Immigration to Israel – Sources and Results" in IYUNIM BETKUMAT ISRAEL 11, Ben-Gurion University of the Negev (in Hebrew).

Stier, H. and D. B. Grusky (1990) "An Overlapping Persistence Model of Career Mobility", *American Sociological Review*, 55(5): 736–56.

Topel, R. H. and M. P. Ward (1992), "Job Mobility and the Careers of Young Men", *The Quarterly Journal of Economics*, 107(2): 439–479.

Appendix A: Descriptive statistics of participants by demographic, economic and social characteristics and by period

Studied period	1990–1995	1995–2000	2000–2005
Women	41.9	44.4	46.8
Jews and others	92.3	92.4	91.5
Arabs	7.7	7.6	8.5
Distribution by age groups			
25–34	32.9	32	33.8
35–50	52.8	55.4	50.4
51+	14.3	12.6	15.8
Immigrants	0.4	11.5	16.7
Distribution by sector (base year)			
Traditional sectors (construction, agriculture and manufacturing)	16.6	19.7	20.8
High-tech	6.1	5.6	8.2
Broad public sector	37.5	37.5	30.9
Banking and finance	5.4	4.7	4.4
Trade and services	34.4	32.5	35.7
Distribution by job mobility[*]			
Stayers / persistent employees	68.1	57.7	61.1
Voluntary movers	29.1	38.7	34.8
Involuntary movers	2.8	3.6	4.1
Personal status in the base period			
Married	83.8	81.7	78.5
Bachelor	9.6	10.6	12.4
Widowed	1.3	1.1	1
Divorced	3.9	5.1	6.4
Wage levels (NIS per month in 2007 prices)[**]			
Base year	8,664	9,565	10,193
Sixth year	11,488	12,018	11,328
Ratio between first and last year	1.33	1.26	1.11

[*] For more specific definition of the mobility variables see the data and method chapter.
[**] Changes in wages are also influenced by the population composition in each period.

Appendix B: Wage levels (NIS per month in 2007 prices) by gender group and by stayers and movers in each studied period

Studied period	1990–1995	1995–2000	2000–2005
Entire sample			
Base year	8,664	9,565	10,193
Second year	8,961	10,040	10,916
Third year	9,432	10,417	10,564
Fourth year	9,889	10,854	10,580
Fifth year	10,601	11,217	10,964
Sixth year	11,488	12,018	11,328
Last and base year ratio	1.33	1.26	1.11
Women's wages			
Base year	5,991	6,969	7,527
Second year	6,222	7,391	8,167
Third year	6,546	7,641	7,953
Fourth year	6,891	7,993	7,969
Fifth year	7,578	8,259	8,319
Sixth year	8,234	8,821	8,505
Last and base year ratio	1.37	1.27	1.13
Men's wages			
Base year	10,588	11,642	12,535
Second year	10,933	12,159	13,329
Third year	11,510	12,637	12,856
Fourth year	12,048	13,143	12,873
Fifth year	12,787	13,604	13,316
Sixth year	13,830	14,575	13,808
Last and base year ratio	1.31	1.25	1.10
Wages of stayers with the same employer			
Base year	9,093	10,374	10,927
Second year	9,391	10,773	11,587
Third year	9,830	11,077	11,198
Fourth year	10,263	11,498	11,209
Fifth year	10,991	11,786	11,632
Sixth year	11,996	12,488	11,993
Last and base year ratio	1.32	1.20	1.10
Wages of movers between employers			
Base year	7,745	8,462	9,040
Second year	8,041	9,039	9,859
Third year	8,580	9,516	9,566
Fourth year	9,090	9,976	9,591
Fifth year	9,785	10,468	9,953
Sixth year	10,401	11,375	10,283
Last and base year ratio	1.34	1.34	1.14