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EMPLOYMENT AND EARNINGS MOBILITY AMONG INCOME SUPPORT RECIPIENTS, 2005–2015

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Abstract

Using longitudinal administrative data, this study followed a cohort of recipients of the Income Support Benefit (ISB) in 2005, tracking their annual employment rate and earnings mobility throughout 2005–15. These trends were compared to those of two other cohorts—low-wage workers and mid-high wage workers.

Our findings show that the rate of transitions between employment statuses among ISB recipients over the whole period are generally low, despite the low starting point. Also, ISB recipients showed little upward earnings mobility. Among unemployed ISB recipients in 2005, less than a third were employed in 2015, and employed ISB recipients in 2005 showed a larger decline in their employment compared to other low-wage workers. Wage mobility was also found to be lower for ISB recipients than that of low-wage workers who do not receive this benefit, in almost all indicators considered. Most ISB recipients in 2005 (employed and unemployed), who worked in 2015, had worked continuously in low-wage jobs with little or no prospects for economic progress, and only a small share of ISB recipients made the transition to mid-high wage jobs. Our results highlight that the heterogeneous groups of recipients in the Israeli ISB-system require policies that go beyond activation and work-first policies.

1. INTRODUCTION

Almost all OECD and EU countries operate comprehensive means-tested benefit programs for working age individuals and their families. These benefits have a major role as social protection floors (Immervoll, Jenkins, Stephen & Königs, 2015). Patterns and duration of social assistance benefit receipt and the recipients' transition to employment are of significant social policy concerns and have become more so in recent years.

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Over the past two decades, many countries, including Israel, have introduced welfare reforms reflecting a work-based policy regime. A central goal of these reforms was to reduce means-tested benefit dependence and increase self-sufficiency by implementing measures encouraging (or requiring) means-tested benefit recipients (also referred to as welfare recipients) to seek employment (OECD, 2013; Taulbut, Mackay and McCartney, 2018). The most prominent changes under this new policy included reducing the level of benefits, introducing contractual obligation, formulating work-oriented measures, and introducing sanctions and incentives (Immervoll and Scarpetta, 2012). The US introduced radical policy changes including a high degree of mandatory measures, while the European approach was more moderate and less comprehensive (Millar, 2005; Werding, 2005).

The literature on work and welfare receipt following these welfare reforms has documented the caseload dynamics, welfare use dynamics, labor outcomes, and the economic wellbeing of current and former welfare recipients. These studies suggest that employment and earnings rose, while welfare use declined, particularly in the US (e.g., Acs and Loprest, 2007; Danziger et al., 2016; Blank, 2006; Finn and Gloster, 2010; Königs, 2018; Meyer and Sullivan, 2004; Shannon, 2009). However, much of the literature suggests that many welfare recipients and welfare leavers, those recipients who exited the benefit system, experience job instability and multiple spells of unemployment, have low earnings, and endure material hardship and poverty even when working (Acs and Loprest, 2007; Danziger et al., 2016; Feldman, 2011; Haskins and Ellwood, 2010; Immervoll, Jenkins, Stephen & Königs, 2015; Ziliak, 2015). Moreover, the proportion of families disconnected from both work and welfare has risen (e.g., Blank and Kovak, 2009; Loprest and Nichols, 2011; Moore, Wood, and Rangarajan, 2012).

Most studies on the employment and earnings of welfare stayers and leavers followed them up for a relatively short time. Thus, little is known about their long-term employment patterns and earnings mobility. The current study is therefore a long-term study, focusing on Israeli working-age individuals (25–65) who received Income Support Benefits (ISB) in 2005, following the implementation of far-reaching changes in the Israeli welfare policy in 2002–03. Our goal was to identify the long-term employment and earnings progress of ISB recipients during the years 2005–15. The annual employment rate, absolute earning mobility and relative earning mobility were examined. We further compared their trends to those of low-wage workers who did not receive ISB in 2005, and to those of mid-high wage workers.

While making no attempt to evaluate the effect of the policy change on the labor supply of welfare recipients, by analyzing monthly and annual data over 2005–15, the study provides a unique account of employment and earnings trends following the shift in Israeli policy which included substantial reduction in ISB level and other measures aimed at strengthening the incentive to work (for review of policy changes implemented see National Insurance Institute, 2002–03). This knowledge is essential for designing adequate policy relating to the role of the transfers and tax system in supplementing low earnings, as well as for work programs to increase self-sufficiency, to support a sustainable transition from receiving benefits to employment, and to increase the employability of welfare recipients.

2. CONTEMPORARY WELFARE POLICY

During the last two decades, the governments of many OECD members have sought to activate their safety-net programs for the working age population (i.e., social assistance programs in the EU and welfare payment in the US) (Immervoll, Jenkins, Stephen & Königs, 2015). There is no common definition of 'activation' but the core objective of 'activation' is to bring more people into the effective labor force. This should counteract the potentially negative effects of unemployment and social assistance schemes on work incentives by enforcing the schemes' conditionality on active job search and participation in measures to improve employability (OECD, 2013). However, policy measures taken under the 'activation' policy vary considerably across countries, ranging from a human capital development approach to labor force attachment strategies, also called the "work-first" model, and involving different degrees of mandatory measures (for further discussion see Kim, 2010; Kluve, 2010; Ziliak, 2015). Having said that, the key assumption of contemporary welfare policy, particularly in liberal market economies, is the "work-first" notion. That is, that the best way to succeed in the labor market is to take any job. If recipients spend more time in the labor force, they acquire work experience and job skills, which could lead to better jobs and higher wages (Grogger, 2009; Feldman, 2011). Accordingly, "work-first" policies or programs use immediate job-search, or short-term training followed by job search, rather than longer term education or training. Their goal is to move individuals quickly into employment (Feldman, 2011). However, recent reviews indicate that the assumption that wages among welfare recipients would grow with work experience as they acquire additional skills and seniority was much too optimistic (Danziger, 2016; Feldman, 2011; Haskins and Ellwood, 2010; Ziliak, 2015).

The income support benefit in Israel

The Income Support Program (ISP) administered by the National Insurance Institute (NII) in Israel is a selective program aimed at guaranteeing a minimum income for families with limited means. The level of the Income Support Benefit (ISB) depends on the household type (single, couple, couple with children and single parent), the number of dependent children and the results of an income test. Eligibility for ISB in Israel is also contingent on a work test. Welfare recipients are required to report regularly to the local employment service and to accept any job offered to them. Work-test exemption is given to certain groups of recipients, among them mothers of young children and recipients defined as 'unplaceable' (temporarily or permanently) due to their own or their children's health limitations.

These public assistance programs were restructured in Israel in 2003 to increase employment and decrease welfare dependence. ISB and the disregarded income level (the amount of earnings that been disregarded when determining eligibility to ISB) were reduced and the previous exemption from the work test for mothers of pre-school-age children

(younger than seven years) was limited to mothers of children younger than two years (NII, 2002–03).

3. PREVIOUS STUDIES

There is substantial literature on welfare recipients' employment and earnings in the post-welfare reform era. Most of these studies indicate that many welfare leavers were employed but suffered from unstable employment and low earnings, returned to welfare, or became disconnected from both work and welfare (e.g., Bäckman and Bergmark, 2011; Blank, 2007; Cooke, 2009; Danziger, 2011; Königs, 2018; Lightman, Mitchell and Herd, 2010; Loprest and Nichols, 2011; Ziliak, 2015). However, there are only limited empirical data on welfare stayers' and leavers' long-term experience in the labor market (more than five years). Tracking the employment and earnings of the same individuals over time contributes to our understanding of the prospects of welfare recipients and other low-wage workers in the labor market. Such an understanding can contribute to the long-lasting debate on the optimal mixture of passive and active policy measures to increase self-sufficiency and promote decent economic wellbeing among this group.

Long-term employment and earnings outcomes of welfare recipients

A study of job quality and job transition patterns among welfare recipients in Michigan (Johnson and Corcoran, 2003) found that although employment and earnings increased over time, only 16 percent of the women worked continuously over the five-year period of the study, and about a third were continuously unemployed or endured long or recurrent unemployment spells. Danziger and Johnson (2004), in their six-year monthly follow-up study found that Michigan welfare recipients worked about two-thirds of the time and about one-third worked continuously (90 percent or more); about 12 percent worked for less than a third of the time. The average period of employment spell was ten months, followed by a month of non-employment. Median earnings among those working increased by 25 percent. However, at the end of the six years, about half the working mothers had jobs whose pay was insufficient to keep a family of three out of poverty, and more than a third had no job.

Using three benchmarks—welfare exit, employment, poverty exit—Wood et al. (2008) documented the uneven economic progress experienced by New Jersey welfare recipients in the five to six years after they entered the TANF program. Most sample members (88 percent) were employed at some point during the study period. However, they experienced multiple spells of employment interspersed with long periods of unemployment, which had a median duration of eight months. Most of the respondents went back and forth between work and welfare, with only 10 percent achieving the three "benchmarks" within three years and maintaining them up to the end of the follow-up period. At that time 40 percent were employed, off welfare, and out of poverty.

Few studies have explicitly categorized and explained welfare recipients' long-term employment and earnings patterns. Wu, Cancian and Meyer's (2008) study, which identified seven employment and earnings patterns of Wisconsin welfare recipients over six years, showed that less than half the women (46 percent) succeeded in gaining long-term employment. The most common earnings pattern was continuously low earnings (28 percent), followed by an unstable pattern that ended in low earnings (23 percent). Only 22 percent of the women advanced in earnings. Some achieved consistent or improved employment trajectories without increasing their earnings, indicating that employment success did not necessarily translate into earnings success. Another study examined the long-term (60 months) work hours and trajectories of low-income single mothers and found that more than 80 percent received means tested benefit at the baseline, in a national US sample (Wu et al., 2020). The authors indicate that only approximately two-fifths of the participants in the sample had stable employment and only about 11 percent experienced an increase in work hours throughout the study period, while others were characterized by continuous unemployment or unstable pattern. Further, examining the earnings level of each of these groups, the authors conclude that although women with stable nonemployment or decreasing hours were more likely to experience deep poverty (below 50 percent of the federal poverty line), those with a stable full-time employment pattern experienced only slight increases in income over time, and poverty rates remained extremely high among the study population (about 58 percent), indicating little earnings mobility (Wu at al., 2020).

Based on German administrative data, Bruckmeier, Lietzman and Saile (2020) observed the employment and benefit trajectories among three yearly entry cohorts (ages 25–60) into BI-receipt (Basic Income program for unemployed which is equivalent to ISB in Israel, to Social Assistance Program in other European countries, and to the TANF program in the US) over a period of 36 months. They found 10 clusters of benefit receipt/employment patterns, indicating that less than a quarter (23 percent) of their entry cohorts succeed in overcoming BI and take up regular full-time employment. Approximately one in three recipients (33 percent) remained in BI during the entire follow-up period—three years—showing almost no labor market activity. An additional 10 percent exited the BI program and worked part time, other recipients combined benefit receipt with employment, or exited the BI with no employment or participated in activation programs. Heterogeneity in individual and household characteristics was observed between the different clusters, with individuals in the cluster of long-term inactive recipients tending to be older, which is often correlated with other factors that adversely affect labor market success, e.g., poor health, do not have a vocational qualification or have foreign citizenship. In addition, single parent households are more prevalent among inactive long-term recipients (Bruckmeier, Lietzman & Saile, 2020). Other related studies also provide detailed examination of BI receipt and unemployment duration among recipients and yielded a somewhat similar picture (e.g., Hohmeyer & Lietzman, 2020).

Only little is known about the experience of former and current welfare recipients in the Israeli labor market. National data indicate a 20 percent caseload decline in the years following the reform from a peak of around 150,000 in 2002 to 120,000 in 2007. Caseload declined further to around 100,000 in 2012 (33 percent), remaining unchanged until 2015 (NII, 2002–03, 2008, 2013, 2016). Studies examining welfare and labor outcomes among ISB recipients at the time of the legislation change focused on a cohort of single mothers receiving ISB in 2003. Similar to the experience of other advanced economies, welfare use declined among single mothers receiving ISB, and employment and earnings increased. In 2007, half of these mothers were no longer on welfare, and the employment rate had grown by 13.9 percent (from 43.8 percent in 2002 to 57.7 percent in 2007). Average monthly earnings at constant prices grew considerably, from NIS 2,293 in 2003 to NIS 3,201 in 2007, a real growth of 39.5 percent (from 66 percent to 89.3 percent of the monthly minimum wage). However, despite a significant growth in earnings, the figures still indicate the high incidence of part-time and low-wage jobs among these mothers (Achdut, 2011).

Two recent welfare studies among a cohort of single mothers in Israel tracked their long-term welfare usage (Achdut and Stier, 2020) and their long-term employment and earnings patterns (Achdut and Stier, 2016). Both were based on longitudinal administrative data of the NII. Achdut and Stier (2020) classified welfare use trajectories over 51 months; about 55 percent of those receiving ISB in 2003 were long-term users (22 percent received ISB for 37–49 months of the 51-month follow-up) or chronic users (33 percent never left the ISB system). This intense use indicates that, although many of these mothers were employed and even continuously employed (around 50 percent), they worked only little and for very low earnings, and therefore remained dependent. The second study (Achdut and Stier, 2016), based on a 72-month follow-up of the same cohort, (2002–07), found an employment rate steadily increasing from about 40 percent in January 2002 to nearly 50 percent by January 2005, and then to 56 percent by the end of 2007. However, 16 percent did not work at all throughout the period, and only 39 percent averaged worked 10 months or more per year. Thus, there were still substantial levels of unemployment.

Median monthly earnings were NIS 1,968 (at 2007 prices), 54 percent of the monthly minimum wage (MMW) in 2002. By 2007, the median monthly earnings had risen to NIS 2,376 (66 percent of the MMW that year). Although this overall trend was positive, many mothers showed very low earnings during the six-year follow-up (40 percent or less of the MMW). The proportion of those earning between 41 percent and 85 percent of the MMW remained similar over the years (about a quarter), while the proportion earning above 85 percent of the MMW rose steeply from 15 percent in the starting year to 28 percent in the final year.

This study was able to discern specific patterns in the long-term labor outcomes of ISB recipients. The most common was unstable employment (40 percent of mothers), while only 17.7 percent continuously increased their employment. About a fifth of the mothers had a stable pattern of low employment (three months or less each year), while only 13.6 percent had a stable high pattern (worked 10–12 months each year).

The most common pattern of earnings was stable low earnings; the wages of 29 percent of the mothers did not exceed 40 percent of the MMW for each year throughout the follow-up period, showing the high incidence of continuous, extremely low earnings of welfare recipients. Earnings improved over the six years for about 36 percent, and 26 percent decreased their earnings or ended with no advancement. Only 8.3 percent conformed to the stable high pattern, these mothers stably earning above 70 percent of the MMW each year. Since most of what we know about the labor market success of Israeli ISB recipients comes from studies focusing on single mothers only a decade ago, there is a clear need to further examine their long-term progress based on updated longitudinal data.

4. METHOD

a. Research population and data sources

The research population comprised all individuals of working age (25–65) in Israel in 2005. This population was divided into three groups: (1) individuals who received ISB in 2005 for at least one month; (2) low-wage workers, defined according to the OECD international standard (OECD, 2019) as those earning two thirds or less of the monthly median wage in 2005 and who did not receive ISB in that year; and (3) middle and high wage workers who did not receive ISB in 2005 (see Table 1).

The study is based on two sources of administrative panel data of the National Insurance Institute (NII): the income support file and the salary file for the years 2005–15. The former contained individual socio-demographic and economic characteristics, including gender, nationality, length of residence in Israel, marital status, number of children, and district of residence. The latter file provided information on annual earnings, monthly employment status and economic branch. Those of working age, who received ISB for at least one month in 2005, were included in the sample (approximately 47,000 cases, see Table 1). Note that about 90 percent of ISB recipients in 2005 received the benefit for three or more months. The second group, which was the main comparison group, consisted of a random sample of low-wage workers who **did not** receive ISB in 2005 (30,026 cases), and the third group included a random sample of middle and high wage workers (64,528 cases) (see Table 1).

The sample was constructed so that the ratio of low wage recipients (including ISB recipients) to those who were not low wage reflected the existing proportions in the whole population. These groups were followed until 2015. We emphasize that the sample was based on the stock of each group in 2005 and not on the flow—for example, new entries for ISB from 2006 onward were not included in the study population.

Table 1 presents the distribution of the study population by their status in 2005. ISB recipients were divided into two groups: unemployed (status 0) and employed (status 1). Note that status number 4, “others”, in 2005 included an insignificant minority (2,644 cases) of individuals who had income from work even though they did not actually work (in cases of receiving wage differentials on previous period of work, late payment of wages, early

retirement etc.). In the later years, people who retired, received benefits other than ISB, became unemployed or received income support for any other reason, also joined to this sub-group. The number of elderly steadily increased in this group over the years, from about 700 in 2005 to approximately 15,000 in 2015. Most of the calculations do not relate to this group.

Table 1
Sample by status, 2005

Status in 2005	Num. of cases in 2005	%
0- unemployed ISB recipients	28,307	19.6
1- employed ISB recipients	18,930	13.1
2 –low-wage workers	30,026	20.8
3 – mid-high wage workers	64,528	44.7
4 – others	2,664	1.8
Total	**144,455**	**100.0**

b. Data analysis

Most of the analyses were conducted according to the original status variable in 2005, which included the five groups in Table 1. We compared the first two statuses (0 and 1) with status 2. Groups 1 and 2 consisted of low-wage workers, the first having received ISB and the second not. In addition, we compared these groups to medium-high wages workers.

In the first step we examined the rate of transition among the five statuses during 2005–15. We then present descriptive statistics for each of the four statuses (0–3) relating to the employment rate throughout 2005–15 (0 = did not work at all during a given year; 1= worked at least one month in a given year). The second step was to examine the earnings mobility of statuses 1–3 (the three groups employed in 2005) throughout 2005–15. Among the measures used were absolute mobility, which is the change in real wages over time, and measures of relative mobility—according to two main indices:

1. *Pearson correlation coefficient* - the higher the correlation coefficient, the stronger the link between the two income rankings or the two levels of income. In an extreme situation, in which both rankings are identical, each individual remains in his/her position, i.e., there was no mobility between the two individuals. In this situation the correlation coefficient is 1 (on the assumption that there is a full positive link). In the other extreme situation, in which nobody remains in place, the correlation coefficient is 0. The closer the correlation to 0, the higher the level of mobility. We employed this estimation for the years 2005, 2007, 2010, and 2015.
2. Widely employed indices that examine the level of income mobility use *transition matrices*, which estimate the transition of individuals from one income percentile to another at two points in time (in the case of quintiles, the matrix is 5x5). Each cell of the matrix gives the ratio of individuals who changed their income distribution ranking

between the two periods. The diagonal gives the ratios of individuals who did not change their income distribution ranking between the two periods, i.e., remained in the same quintiles. The higher the ratio of individuals who shifted, the higher the level of mobility, and vice versa. We employed this estimation for the years 2005–10 and then for 2005–15.

The last step of our analysis was to estimate panel logistic regression models (random effect)—to estimate the probability of: (1) downward earning mobility measured by decrease in decile. This included three models for each of the groups that were employed in 2005, i.e., status 1, 2, and 3 (models A-C, Table 4); (2) changing status from 1 (employed ISB recipients in 2005) to 2 (low-wage worker) or 3 (mid-high wage worker); (2) changing status from 0, 1, or 2 to 3 (mid-high wage worker) (Table 5, models D-E).

The independent variables in all models were age, gender (woman =1), marital status (married=1, single parent=1) with the base category single, immigrant (=1), Arab (=1), ultra-Orthodox (=1), number of children, having young children (child under 2 years old=1)[3], receiving disability benefit (DB), living in the center vs. periphery based on districts distribution (periphery = 1), and economic industry (traditional industries, public sector; high tech, education and health, finance and professional, with the base category 'other services'). We also included a measure of employment experience, the number of months worked in each of the years of the follow up.

Additionally, in the models examining upward mobility on the relative wage scale (Table 5, models D-E), we incorporated two dummy variables indicating status in 2005 (1=status1; 1=status2), with the base category status number 3, mid-high wage workers. The panel regression models included all the above listed independent variables (person-year structure) of our follow-up (2005–15). Detailed descriptive statistics of our main explanatory variables by origin status in 2005 are given in Appendix A, Table 1.

5. FINDINGS

a. Employment outcomes

Table 2 shows the transitions between the five statuses according to which the samples were drawn. Status 0 and 1 were ISB recipients in 2005, employed and unemployed respectively; status 2 were low wage workers, status 3 mid-high wage workers. Status 4 refers to wages recipients who did not work in practice or to those who aged out of work during the period (see data analysis section), their share naturally increasing over the years to 21.1 percent of the sample in 2015.

In the other groups, the diagonal generally indicates the highest rates, i.e., 6.1 percent of 7.9 percent (77 percent), with status 0 in 2005 remained in the same status from 2005 to 2015.

[3] This indicator was chosen since mothers of young children (under two years old) are automatically exempt from the work test under the ISB scheme (=1)

Almost half of those with status 1 (2 percent of 4.4 percent) remained in this condition, 6.3 percent of 15.6 percent (about 40 percent) remained in status 2, and 35 percent of 51 percent (nearly 70 percent) of status 3 remained in the same position. Generally, in all groups the majority stayed in the same status. However, there were also transitions. Among those receiving ISB and working (status 1), more than a third (4.9 percent of 13.1 percent) enjoyed upward mobility and moved to status 3 (mid-high wage workers), compared to about 10 percent (2.1 percent out of 19.7 percent) among status 0 (unemployed ISB recipients). Furthermore, among unemployed ISB recipients, who did not move to status 4, half remained in the same position and the other half were distributed equally among the other three statuses (1 to 3).

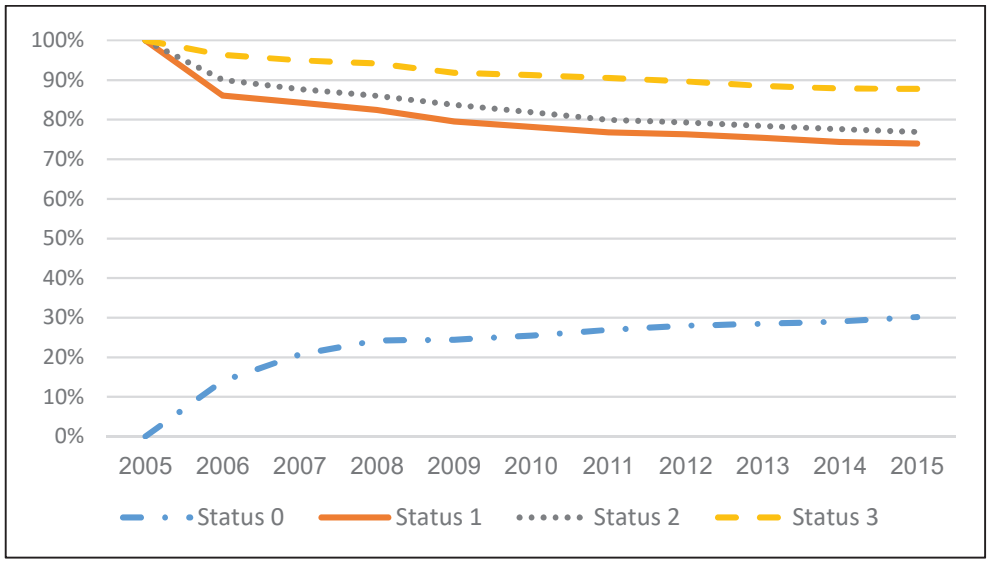
Table 2
Transition matrix between statuses, 2005 and 2015

	2015					
2005	0	1	2	3	4	
0	6.1%	1.7%	2.2%	2.1%	7.7%	19.7%
1	1.2%	2.0%	2.8%	4.9%	2.2%	13.1%
2	0.3%	0.3%	6.3%	9.3%	4.5%	20.7%
3	0.3%	0.3%	4.3%	34.6%	5.1%	44.7%
4	0.0%	0.0%	0.1%	0.1%	1.6%	1.9%
Total	**7.9%**	**4.4%**	**15.6%**	**50.9%**	**21.1%**	**100.0%**

Figure 1 shows the employment rates over the years with respect to 2005 status (for annual figures by status see Appendix A, Table 1). There was a relatively high rise among unemployed ISB recipients in 2005 (status 0) in the first three years, with about a quarter joining the labor market. The employment rate then stabilized slightly, reaching 30 percent toward the end of the decade. Almost one-third of the working-age income-support recipients joined the labor market, while a high rate of about 50 percent remained unemployed in 2015, excluding those reaching the official retirement age.

Among those employed in 2005, ISB recipients (status 1), low wage workers (status 2) and mid-high wage workers (status 3) showed a gradual decline in employment rate, with ISB recipients declining the most (to 74 percent, vs. low-wage workers at 77 percent). These findings indicate a trend of convergence between the two types of ISB recipients, although by the end of the decade the chances of being employed were three times higher among those ISB recipients who worked at the beginning than among those who did not work.

Figure 1
Employment Rate in 2005–15, by Status in 2005



b. Earnings outcomes

All the analyses presented in this section include only individuals who worked in the two compared years and earned a monthly minimum of 100 NIS (statuses 1-3; 13,000 in status 1, 22,000 in status 2, and 54,000 in status 3, total of 89,000 cases). The only exception is the analysis presented in Figure 3 that also included unemployed ISB recipients who entered the labor market in later years.

Figure 2 shows the absolute mobility or the real changes in earnings between 2005 and 2010 and in the period 2005–15. The three groups experienced a real increase in wages from 2005 to 2015, although to a varying degree. Among ISB recipients employed in 2005, real wages rose 1.8 times during the decade compared to a x2.8 increase in the low wage worker group that did not receive ISB. The real increase in wages in the third group was lower, x1.25 from 2005 to 2015 (the so-called "lost decade" in terms of wage increases). The earnings growth of low-wage workers who did not receive ISB was much higher than that of employed ISB recipients.[4]

[4] Note that the monthly wage is the annual wage divided by the number of months worked, so that the number of months worked does not affect the wage level.

Figure 2
Absolute Wage Mobility
Real Changes in Wages from 2005 to 2010 and 2015, by Status in 2005

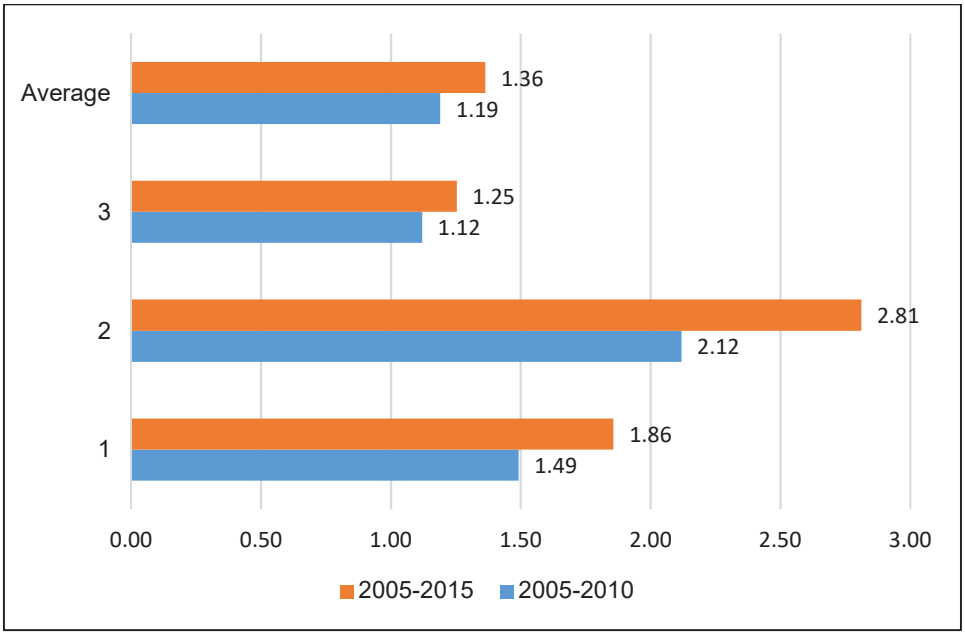


Table 3 presents the Pearson index showing the correlation between wages in 2005 vs. three points in time—2007, 2010 and 2015—to provide a simple estimate of relative mobility. The higher the correlation coefficient, the lower the mobility. As expected, the correlation decreased over the years, indicating greater mobility over time. However, not only was the absolute mobility of employed ISB recipients (status 1) lower than those of low-wage workers (status 2), but also the relative mobility of employed ISB recipients was lower at *each point in time* than that of low-wage workers. The data also indicate that the mobility of mid-high wage earners was generally lower than that of both other groups. Note that this index does not show the direction of mobility but only its magnitude.

Table 3
Pearson Correlation - Wages in 2005, 2007, 2010, 2015

	wage2005	wage2007	wage2010	wage2015
Status 1				
wage2005	1.0			
wage2007	0.53	1.0		
wage2010	0.41	0.65	1.0	
wage2015	0.33	0.53	0.68	1.0
Status 2				
wage2005	1.0			
wage2007	0.33	1.0		
wage2010	0.22	0.61	1.0	
wage2015	0.17	0.48	0.67	1.0
Status 3				
wage2005	1.0			
wage2007	0.68	1		
wage2010	0.49	0.63	1.0	
wage2015	0.47	0.50	0.49	1.0

Figure 3 shows the changes in wage quintiles for each status. Mid-high wage workers (status 3) showed a decrease in relative mobility over the years, in part, since those who were in the fifth quintile can only stay or decline. The earnings mobility of unemployed ISB recipients in 2005 was much more moderate than that of employed ISB recipients in 2005, and both were lower than that of low-wage workers (status 2). The ISB recipients who entered the labor market later (status 0) entered a low-income quintile (between 1 and 2) and stayed there throughout the decade, remaining at the bottom of the wage distribution. That is, their first job was a dead end in terms of wages and not a stepping stone for more lucrative jobs (annual figures by statuses appear in Appendix A, Table 1).

Figure 3
Average Quantile in 2005–15, by Status in 2005 (Workers Only)

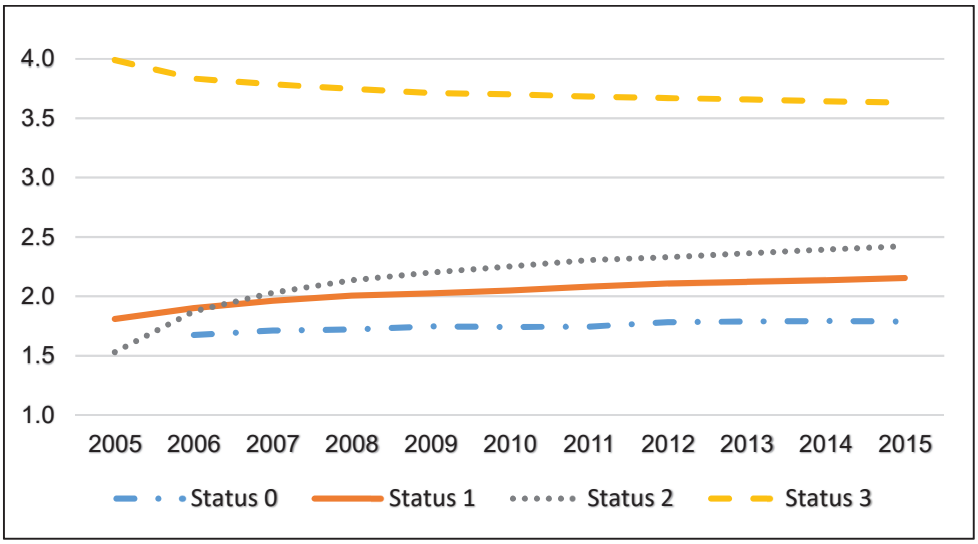


Table 4 presents the odds ratio of three panel logistic regression models for status 1, 2 and 3, (A–C, respectively) to examine the probability of workers falling on the wage scale (i.e., decrease in wage deciles) in the investigated period (2005–15). These models included only the working population at each year. Among all groups the probability of falling in the wage scale is higher for younger workers. While this finding indicates, as expected, that among older low-wage workers and mid-high wage workers the probability of experiencing a decrease in wage deciles is lower, compared to younger workers who tend to be more mobile—in both directions—it unexpectedly indicates that younger employed ISB recipients in 2005 were more likely to experience deterioration in their position on the relative wage scale during the years, compared to older workers receiving ISB in 2005. It might that older employed ISB recipients, as other older workers, have relatively stable jobs that provide them to a great extent the same level of income, although low, over the years. The likelihood of a women to fall in the wage scale was lower among employed ISB recipients in 2005, but higher among the two other groups—low and mid-high wage workers. Married individuals were less likely to experience a decrease in wage deciles (compared to single with no children), with the exception of ISB recipients where no such effect was found. Among all groups, immigrants were less likely to fall on the relative wage scale, and Arabs and those receiving disability benefit were more likely to experience that. Also, living in the geographical periphery (southern or northern of Israel) increases the probability of falling in the relative wage scale among both low-wage workers and mid-high wage workers, but had no such effect on ISB recipients. Labor force attachment as measured by number of working months is, as expected, a clear determinant of a decline in the wage scale, as the higher the

work stability and employment experience gained, the lower the probability of experiencing a decline, all things being equal.

The probability of falling on the wage scale was lower among those working in the traditional industries (construction, agriculture and low tech industry), public sector, high-tech, infrastructures, and finance and professionals, all compared to the non-professional services sector.

Table 4
Panel Logistic Regression Models Predicting Decrease in Wage Deciles, 2005–15, Odds Ratio

	Model A	**Model B**	**Model C**
	Status 1 in 2005	Status 2 in 2005	Status 3 in 2005
Demographic			
Women (=1)	0.44***	1.32***	1.78***
Age (ref=55-retiermnet age)			
age 25-35	1.33***	1.96***	2.26***
age 35-45	1.46***	1.49***	1.89***
age 45-54	1.24***	1.13**	1.18***
Marital status (ref=single)			
Married (=1)	1.01	0.89***	0.72***
Single parent (=1)	1.12	0.89	1.58
Number of children	1.06***	1.07***	1.13***
Children up to 2 years old (=1)	0.99	0.96	1.05***
Immigrants (=1)	0.70***	0.93	1.40***
Arabs (=1)	1.22**	1.40***	3.76***
Ultra-Orthodox (=1)	0.95	1.1	1.64***
Live in periphery (=1)	0.98	1.21***	1.29***
Received disability benefit (=1)	3.45***	1.90***	7.90***
Employment experience			
Number of working months (1-12)	0.88***	0.84***	0.83***
Economic branches (2005) (ref= other services)			
Traditional branches	0.64***	0.47***	0.51***
Public sector	0.50***	0.38***	0.34***
High-tech	0.40***	0.43***	0.23***
Infrastructures	0.32***	0.22***	0.13***
Education and health	0.99	0.93**	0.61***
Finance and professional	0.77***	0.60***	0.51***
Constant	0.03***	0.02***	0.02***
N	160055	261731	633926

p<.05* p<.01** p<.001***

Table 5 presents the odds ratio of two panel logistic regression models (models D-E) that predict the probability that: 1) employed ISB recipients (status 1 in 2005) exit the benefit system and became low-wage workers (status 2) or mid-high wage workers (status 3) (Model D); 2) Changed status from 0,1 or 2 in 2005 to 3. This model included the three statuses, 0–2, among the independent variables with status 0 as the base category. We excluded from this model the measure of employment experience since those in status 0 did not work in 2005. Note that individuals who were initially in status 3 (2005) were omitted from this model.

According to the two models, the probability of achieving status improvement, i.e., earnings improvement, was lower for women, those with young children, immigrants and those living in the geographical periphery. In contrast, younger workers and married workers were more likely to improve their status. Arabs who combined employment with benefit receipt in 2005 (status 1) were more likely to exit the ISB system and to turn to low wage or mid-high wage workers (Model D), but were less likely to move from status 0,1,2 to 3, i.e., and become mid-high wage workers, all compared to Jewish individuals (Model E). The same is applied for those receiving disability benefit – they were more likely to exit the ISB system in cases where they worked in 2005 (Model D), but less likely to reach mid-high wage level (Model E). Both models indicate that being employed in the traditional, public sector, high-tech, and infrastructures industries is associated with greater probability of status improvement, all compared to being employed in the non-professional services sector. However, being employed in the education and health sector is associated with decreased probability to experience status improvement from any kind.

An important finding in this model is that, when all other factors were constant, the chances of upward mobility, i.e., to make the transition from any status (0, 1, or 2) to the mid-high wage threshold were higher among employed ISB recipients in 2005 (odds ratio=1.67) and far higher among low-wage workers (odds ratio=3.01), both compared to unemployed ISB recipients.

Table 5
Panel Logistic Regression Models Predicting Transition from Status 1 to 2 or 3, and from Status 0, 1, or 2 to 3, 2005–15, Odds Ratio

	Model D	**Model E**
	Changed status from 1 in 2005 to 2 or 3	Changed status from 0,1 or 2 in 2005 to 3
Demographic		
Women (=1)	0.63***	0.28***
Age (ref=55-retiermnet age)		
age 25-35	4.54***	0.67***
age 35-45	6.30***	1.42***
age 45-54	4.33***	1.62***
Marital status (ref=single)		
Married (=1)	3.48***	1.49***
Single parent (=1)	1.36	0.86
Number of children	1.03**	1.00
Children up to 2 years old (=1)	0.61***	0.93***
Immigrants (=1)	0.14***	0.76***
Arabs (=1)	2.28***	0.87**
Ultra-Orthodox (=1)	0.86	0.59***
Live in periphery (=1)	0.85**	0.86***
Received disability benefit (=1)	4.46***	0.17***
Employment experience		
Number of working months (1-12)	1.26***	
Economic branches (2005) (ref= other services)		
Traditional branches	1.26***	2.29***
Public sector	2.99***	5.46***
High-tech	2.15***	4.77***
Infrastructures	1.50**	3.40***
Education and health	0.62***	0.80***
Finance and professional	0.92**	1.57***
Status in 2005 (ref=status 0)		
Status 1		1.67***
Status 2		3.01***
Constant	0.00***	0.00***
N	160055	490334

p<.05* p<.01** p<.001***

6. SUMMARY AND CONCLUSIONS

It is well accepted that to gain a full picture of employment stability and earnings mobility it is necessary to follow an individual's employment and income across several years (Theodos and Bednarzik, 2006). Using longitudinal administrative data, this study followed a cohort of ISB recipients in 2005, tracking their annual employment rate and earnings mobility throughout the decade 2005–15. These trends were compared to those of two other cohorts: low-wage workers and mid-high wage workers.

a. Summary of the main findings

Employment outcomes and transition between statuses

During the study follow up, almost one-third of the working-age ISB recipients joined the labor market, while about 50 percent remained unemployed in 2015, excluding those reaching the official retirement age. Among unemployed ISB recipients in 2005, almost a third (31 percent) showed no improvement in their position in the labor market by 2015, even though they might have worked occasionally during the decade. About 9 percent remained on ISB but worked in 2015. About 11 percent became low-wage workers and 11 percent mid-high wage workers in 2015 (39 percent reached the official retirement age, moved to another benefit or became disconnected from both benefit receipt and employment). Overall, these figures indicated that 40 percent of ISB recipients remained on benefits even after a decade, and only a small proportion experienced a varying extent of labor market success (22 percent). Further, about 9 percent of ISB recipients employed in 2005 left the labor market and stayed on ISB, 15 percent remained in their initial position, and 21 percent became low-wage workers. Here also there was little improvement over time for many ISB recipients, with about 45 percent experiencing deterioration, stagnation, or moderate improvement in their labor market position. However, there is also 'good news'- more than a third (37 percent) of ISB recipients employed in 2005 experienced labor market success as they crossed the low-wage workers' threshold and became mid-high wage workers.

With respect to low wage workers in 2005, the picture was more positive. Although 30 percent remained in their position in 2015, 45 percent became mid-high wage earners, escaping the low-paid labor market. Mid-high wage earners typically kept their position, 77 percent remained in their position, while only a small share experienced a negative outcome.

Earnings mobility

Our findings indicate that earnings growth of low-wage workers who did not receive ISB was much higher than that of employed ISB recipients; real wages among low-wage workers rose x2.8 during the decade, compared to a 1.8 times increase among employed ISB recipients in 2005. Similarly, relative earnings mobility of ISB recipients, measured by average quantile during 2005–15, was much more moderate than that of the low-wage group

at each point in time. Moreover, ISB recipients who entered the labor market in later years entered a low-income quintile (between 1 and 2) and stayed there throughout the decade, i.e., they not only entered a low quintile, but also failed to move up.

Our multivariate analysis suggests that some groups did better than others, as the probability of achieving labor market improvement varied according to individuals' characteristics. For example, among employed ISB recipients in 2005, women, immigrants, those who gained greater employment experience during the measurement period, and those working in non-professional services were more likely to increase their wages and to move to higher wage deciles; while younger workers, those with more children, Arabs, and those receiving a disability benefit were less likely to do so. Having said that, the findings indicate some variability in the predictors of upward earnings mobility across the statuses (1, 2, and 3) with, for instance, women being less likely (compared to men) to achieve relative upward mobility if they were low wage workers or mid-high wage workers in 2005; the same is applied to individuals who live in the periphery. Moreover, ISB recipients (either employed or not in 2005) and low wage workers were more likely to reach the mid-high wage workers threshold if they were men, at mid-life ages, married with no young children, Israeli born or veteran immigrants, Jewish, and live in the geographical center of Israel. Having worked in the non-professional service sector, compared to any other economic industries (exceptions were health and education), decreases the probability to both exit the ISB system and to escape the low wage labor market. Finally, and importantly, ISB recipients were far less likely than low wage workers to become mid-high wage workers, all other things being equal.

b. Limitations

There are several limitations to this study. First, due to lack of information on working hours, we were unable to determine whether increased earnings were due to increased working hours or to an increased hourly wage, i.e., whether ISB recipients were working in higher paying jobs. We were also unable to determine if the low level of earnings observed was due to recipients holding part-time or low-wage jobs. Therefore, we could not determine which group of recipients was most likely to work at a "good job" in terms of working hours and hourly wage.

Second, another missing variable in our dataset was formal education. Although previous studies have produced mixed evidence on the role of formal education in explaining welfare recipients' employment outcomes (see Achdut 2016 for a review), evidence relating to earnings consistently indicates the importance of education for welfare recipients (e.g., Cancian et al. 2003; Johnson and Corcoran 2003; Dworsky and Courtney 2007; Wu et al. 2008). However, in order to estimate the size of this limitation, we computed data from the national Expenditure Survey (ICBS, 2017). The findings show that, on average, the number of working hours of low-wage workers receiving low-income benefits is 25 percent less than other low-wage employees. In addition, the difference in number of schooling years between the two groups is small (about six months on average, for the benefit of non-beneficiaries)

Third, it is desirable to include workers who alternate between employment and non-employment in any mobility study. Most studies fail to do so, however, because it is difficult to determine whether workers have become discouraged and left the labor force due to the absence of opportunities for mobility or due to another, unrelated factor, such as childbirth. Yet, excluding workers who leave the workforce, as we did in the earning mobility analysis, likely biases earnings mobility estimates upwards (Theodos and Bednarzik, 2006).

c. Conclusions and policy recommendations

Many advanced economies have reformed their safety net programs, implementing active measures to encourage employment and self-sufficiency. The key assumption and hope of such "work-first" regimes is that, if recipients spend more time in the labor force, they acquire work experience and job skills, which could then lead to better jobs and higher wages and provide them and their families more economical security (Grogger, 2009; Haskins and Ellwood, 2010). The current study found little evidence for long-term labor market success for most current and former ISB recipients. Rather, more than a decade after far reaching changes in the Israeli safety net program were implemented, many ISB recipients suffered from unemployment and low earnings, even though many of them worked substantially. Other low-wage workers performed much better in almost any aspect examined. These findings are in line with recent reviews conducted in the US among welfare recipients (Danziger et al., 2016; Ziliak, 2015). Furthermore, 40 percent of unemployed ISB recipients and about a quarter of employed ISB recipients remained on welfare, indicating a high incidence of long-term and chronic welfare use. These findings fit the previous evidence on welfare use accumulation in Israel (Achdut and Stier, 2020).

Our findings lead to two main conclusions. First, many ISB recipients cannot work or can work very little and then for very low wages. They thus combine work and welfare for long periods, not as a transitional state on their way to fuller employment but as a permanent state. According to most indicators in our research, these workers are a much more vulnerable population than other low-wage workers and therefore cannot be supported under a work-based regime with public assistance at an extremely low level; they require a decent cash benefit system. This group may also be increasingly affected by social and health problems, to begin with, requiring non-classical labor market policies. That is, our results highlight that the heterogeneous groups of recipients in the Israeli ISB-system require policies that go beyond activation and work-first policies.

Second, most ISB recipients in 2005 (employed and unemployed), who worked in 2015, worked continuously in low-wage jobs with little or no prospects for economic progress. Note that the upper threshold of “low wage” (2\3 of the median wage) was approximately the monthly minimum wage in 2015 (NIS 4,471 and NIS 4,650, respectively). That is, those now working full time for the minimum wage are no longer considered low wage workers. Only a small share of ISB recipients made the transition to mid-high wage jobs. Perhaps the most important question for the future is how to enhance the odds of welfare recipients and other

low-wage workers of achieving upward mobility. This requires additional policy measures. Previous studies have pointed out the benefit of training programs designed to encourage job retention and advancement (Bloom et al. 2009; Holzer and Martinson 2005; Johnson 2007; Ziliak, 2015). Training, especially for jobs available in the domestic economy, could give welfare recipients the skills leading to better jobs, higher earnings, and even lower poverty rates (e.g., Dyke et al., 2006; Kim 2012; Ochel 2005). However, as indicated by evaluation studies and several systematic reviews of welfare-to-work initiatives (e.g., Greenberg et al., 2003; Kim, 2012; Ochel, 2005), human capital intervention should focus on vocational training rather than general education, and be accompanied by further job search assistance. It may even combine some employment with training. A mixture of both approaches proved key in achieving better results (Blank, 2003). There is now a large and growing literature on how skilled jobs that require a certificate, a license, or a two-year degree can help, particularly young people, qualify for good jobs with higher incomes. Such intervention includes intensive sector-based approaches and career pathways that prepare workers for specific occupations (Haskins, 2015).

Aside from these measures, an 'in-work-benefit', mainly in the form of tax credit, is essential for increasing the disposable income of low-wage workers. To be effective both in terms of preventing and reducing poverty and in promoting the material wellbeing of the near poor and other low-income households, the entry point should be adapted to the lowest wage quintile, and a higher subsidy is required, particularly at the beginning of the function/scheme.

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Appendix

Table 1
Descriptive statistics: Distribution (%) and Means of Main Variables by Origin Status (status in 2005), 2005–15

Year	Earning Quantile	Old age	Monthly wage	Low wage	Disability benefit recipient	ISB recipient	Employee	Immigrant	Arabs	Women	Age
Status 0											
2005	1.12	0.00	0.00	0.00	0.04	1.00	0.00	0.20	0.46	0.62	43.6
2006	1.40	0.00	305.35	0.10	0.06	0.86	0.14	0.20	0.46	0.62	44.6
2007	1.50	0.03	520.93	0.14	0.07	0.75	0.21	0.20	0.46	0.62	45.5
2008	1.55	0.05	662.10	0.17	0.08	0.67	0.24	0.20	0.46	0.62	46.5
2009	1.61	0.08	689.48	0.16	0.09	0.61	0.24	0.20	0.47	0.62	47.5
2010	1.63	0.10	768.68	0.17	0.10	0.58	0.26	0.19	0.47	0.62	48.5
2011	1.66	0.13	877.76	0.17	0.11	0.52	0.27	0.19	0.47	0.62	49.5
2012	1.69	0.15	978.21	0.17	0.12	0.48	0.28	0.19	0.47	0.62	50.5
2013	1.71	0.18	1049.04	0.17	0.12	0.46	0.28	0.19	0.47	0.62	51.5
2014	1.74	0.21	1098.92	0.18	0.12	0.42	0.29	0.19	0.47	0.62	52.5
2015	1.76	0.23	1190.95	0.19	0.12	0.39	0.30	0.19	0.47	0.62	53.4
Total	**1.58**	**0.11**	**736.39**	**0.15**	**0.10**	**0.61**	**0.23**	**0.19**	**0.47**	**0.62**	**48.5**
Status 1											
2005	2.59	0.00	2153.72	0.75	0.01	1.00	1.00	0.44	0.15	0.66	41.1
2006	2.51	0.00	2247.03	0.57	0.02	0.69	0.86	0.44	0.16	0.66	42.1
2007	2.52	0.01	2526.10	0.51	0.03	0.55	0.84	0.44	0.16	0.66	43.1
2008	2.52	0.03	2747.56	0.47	0.04	0.46	0.82	0.44	0.16	0.66	44.1
2009	2.56	0.05	2745.46	0.44	0.05	0.42	0.80	0.43	0.16	0.66	45.1
2010	2.56	0.07	2941.52	0.41	0.06	0.39	0.78	0.43	0.16	0.66	46.1
2011	2.58	0.09	3148.84	0.39	0.06	0.34	0.77	0.43	0.16	0.66	47.1
2012	2.60	0.10	3343.30	0.37	0.07	0.31	0.76	0.43	0.16	0.66	48.1
2013	2.61	0.12	3473.91	0.36	0.08	0.29	0.75	0.43	0.16	0.66	49.0
2014	2.62	0.14	3555.69	0.35	0.08	0.27	0.74	0.43	0.16	0.66	50.0
2015	2.62	0.16	3738.03	0.35	0.09	0.25	0.74	0.43	0.16	0.66	51.0
Total	**2.57**	**0.07**	**2957.79**	**0.45**	**0.05**	**0.46**	**0.81**	**0.43**	**0.16**	**0.66**	**46.0**
Status 2											
2005	2.41	0.03	1802.55	1.00	0.05	0.00	1.00	0.18	0.13	0.64	40.0
2006	2.55	0.03	2363.62	0.64	0.05	0.02	0.90	0.18	0.13	0.64	41.1
2007	2.62	0.05	2833.08	0.54	0.06	0.02	0.88	0.18	0.13	0.64	42.1
2008	2.66	0.06	3237.44	0.48	0.06	0.02	0.86	0.18	0.13	0.64	43.1
2009	2.72	0.08	3365.75	0.43	0.06	0.02	0.84	0.18	0.13	0.64	44.1
2010	2.75	0.09	3683.93	0.40	0.07	0.03	0.82	0.18	0.13	0.64	45.1

2011	2.78	0.11	4029.92	0.37	0.07	0.03	0.80	0.18	0.13	0.64	46.1
2012	2.79	0.12	4282.50	0.35	0.07	0.03	0.79	0.18	0.13	0.64	47.2
2013	2.81	0.14	4515.86	0.33	0.07	0.03	0.78	0.18	0.13	0.64	48.2
2014	2.83	0.16	4748.95	0.32	0.07	0.03	0.78	0.18	0.13	0.64	49.2
2015	2.83	0.18	4989.90	0.32	0.07	0.03	0.77	0.17	0.13	0.64	50.1
Total	**2.70**	**0.09**	**3608.09**	**0.47**	**0.06**	**0.02**	**0.84**	**0.18**	**0.13**	**0.64**	**45.1**
Status 3											
2005	4.30	0.01	9037.43	0.00	0.00	0.00	1.00	0.18	0.10	0.43	40.6
2006	4.12	0.01	9352.91	0.07	0.01	0.01	0.96	0.18	0.10	0.43	41.6
2007	4.05	0.02	9733.70	0.08	0.01	0.01	0.95	0.17	0.10	0.43	42.7
2008	4.00	0.03	10251.36	0.08	0.01	0.01	0.94	0.17	0.10	0.43	43.7
2009	3.94	0.04	9953.17	0.09	0.01	0.01	0.92	0.17	0.10	0.43	44.7
2010	3.92	0.05	10517.37	0.09	0.01	0.01	0.91	0.17	0.10	0.43	45.7
2011	3.89	0.06	10947.11	0.09	0.02	0.01	0.91	0.17	0.10	0.43	46.7
2012	3.86	0.08	11104.97	0.09	0.02	0.01	0.90	0.17	0.10	0.43	47.7
2013	3.83	0.09	11340.43	0.09	0.02	0.01	0.89	0.17	0.10	0.43	48.7
2014	3.81	0.12	11649.59	0.10	0.02	0.01	0.88	0.17	0.10	0.43	49.7
2015	3.80	0.13	12081.31	0.10	0.03	0.01	0.88	0.17	0.10	0.44	50.7
Total	**3.96**	**0.06**	**10530.19**	**0.08**	**0.01**	**0.01**	**0.92**	**0.17**	**0.10**	**0.43**	**45.6**
All											
2005	1.13	0.24	0.00	0.00	0.19	0.00	0.00	0.02	0.04	0.60	58.2
2006	1.38	0.30	427.12	0.11	0.18	0.00	0.13	0.02	0.04	0.60	59.2
2007	1.35	0.37	365.56	0.07	0.18	0.00	0.10	0.02	0.04	0.60	60.2
2008	1.56	0.43	860.89	0.09	0.17	0.00	0.18	0.02	0.04	0.60	61.2
2009	1.43	0.50	414.38	0.07	0.16	0.00	0.11	0.02	0.04	0.60	62.2
2010	1.46	0.56	540.48	0.07	0.16	0.00	0.11	0.02	0.04	0.60	63.2
2011	1.46	0.61	508.71	0.06	0.14	0.00	0.11	0.02	0.04	0.60	64.2
2012	1.46	0.66	492.81	0.07	0.13	0.00	0.11	0.02	0.04	0.60	65.2
2013	1.50	0.70	540.38	0.07	0.12	0.00	0.12	0.02	0.05	0.60	66.2
2014	1.51	0.74	527.45	0.07	0.11	0.00	0.11	0.02	0.05	0.60	67.2
2015	1.48	0.77	534.76	0.06	0.10	0.00	0.11	0.02	0.04	0.60	68.2
Total	**1.43**	**0.53**	**473.16**	**0.07**	**0.15**	**0.00**	**0.11**	**0.02**	**0.04**	**0.60**	**63.1**