

Does Health Reform Lead to Increased Job Mobility? Evidence from Massachusetts

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February, 2014

Abstract. This paper estimates the impact of the implementation of the 2006 Massachusetts health reform on the prevalence of job-lock. Utilizing data from tax returns that span 2002-2010, in which job changes are identified using employer information reported on W-2 forms, we identify the impact of the Massachusetts reform using a difference-in-differences approach, comparing the prevalence of job changes in Massachusetts to those of a comparison group, while controlling for individual fixed effects. The estimates suggest the Massachusetts reform led to an overall decrease in job separations of between 1.5 and 3.8 percentage points (or between 5% and 16%), depending on marital status, gender, and type of job separation, with the decline driven by decreases in job-to-job transitions. However, among married young and low income taxpayers, job mobility increased.

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The views expressed are those of the authors and are not necessarily those of the U.S. Department of the Treasury.

1. Introduction

Job lock refers to the reluctance of a worker to leave a job for another job, self-employment, or retirement due to a difference in the availability or cost of health insurance between their current position and the alternative. To the extent that job lock exists, it serves as a drag on economic efficiency, as workers are not able to switch to alternative positions for which they may be better suited or more productive. As a result, policy changes that lead to a decline in the extent of job-lock may have beneficial impacts for the overall economy. In this paper, we use a 9 year panel of tax returns from 2002 - 2010 to estimate the effect of the 2006 Massachusetts health reform on job mobility.

In 2006, Massachusetts passed An Act Providing Access to Affordable, Quality, Accountable Health Care, which became a model of the federal Patient Protection and Affordable Care Act (PPACA) of 2010. Since the main features of PPACA have only recently been implemented, it is not possible to examine the impact of this law on job lock. However, the Massachusetts reform happened sufficiently long ago that data is available to ascertain the effects of such a change in policy, and so it is this state level change which is the focus of our study.

In the 1990's, prior to this reform, Massachusetts had implemented several changes in their individual and small group health insurance markets, including modified community rating regulations (which limit the extent to which insurance companies may charge different premiums based on health status), guaranteed issue regulations (which prevent insurance companies from excluding anyone because of pre-existing conditions), and guaranteed renewability regulations (which requires that the insurer continue coverage as long as premiums are paid on the policy), among others.

On top of these existing regulations, the 2006 Massachusetts reform established the “Connector,” a clearing house for insurance plans and payments, and implemented a sliding scale subsidy for those with income up to 300% of the federal poverty line (FPL). An individual mandate required all individuals 18 and older to obtain “credible health insurance,” and an employer mandate required firms with eleven or more full-time equivalents to offer health insurance. Medicaid was expanded for children from families with income up to 300% of FPL and for adults with income up to 150% of FPL. Finally, the non-group and small-group health insurance markets were merged, which was expected to reduce non-group premiums and somewhat increase small group premiums. The Massachusetts reform was fully implemented by mid-2007.¹

Though the policy change in Massachusetts was recently implemented, the literature examining the impacts of this health reform law is rapidly growing. Studies of the effect of the reform on coverage suggest that the number and percent of uninsured dropped dramatically (Kolstad and Kowalski (2010), Long and Stockley (2010)), and that access to health care improved. The effect of the Massachusetts reform on premiums is somewhat mixed, however.²

Turning to the labor market effects of the reform, Kolstad and Kowalski (2012) estimate that the employer mandate to offer health insurance led to an offsetting decline

¹ For a detailed description of the Massachusetts reform, see McDonough et al. (2008).

² Lischko and Manzoillo (2010) use America’s Health Insurance Plans data from 2004, 2006/7 and 2009 to show that the average premiums in the Massachusetts non-group market increased between 2004 and 2006/7, and then dropped between 2006/7 and 2009, bringing single coverage back to 2004 levels with somewhat higher levels for families. The 2006/7 observation is during the implementation years, which makes the use of the 2006/7 data in a pre and post comparison difficult. Nonetheless, the 2004 to 2009 average premium changes suggest that Massachusetts experienced a decline in average premiums. Cogan, Hubbard and Kessler (2010) use data from the Medical Expenditure Panel Survey’s Insurance Component, and find that insurance premiums for firms with less than 50 employees in Massachusetts increased relative to other states. However, Graves and Gruber (2012) reexamine both sets of data, and argue that there was no statistically significant change in group premiums, while non-group premiums declined relative to the national average.

in wages. Studying self-employment, Heim and Lurie (2014) find some evidence that the reform led to a decline in the rate of taxpayers earning a majority of income from self-employment, though there is suggestive evidence of a positive impact on earning some self-employment income among joint filers and earning the majority of income from self-employment among older taxpayers. On the other hand, using Current Population Survey data, Niu (2011) finds no statistically significant long-run impact of the Massachusetts reform on self-employment.

Several papers have attempted to detect the prevalence of job lock. The older literature found that health insurance considerations impact the decision to retire, but evidence of an impact on job turnover and self-employment was mixed.³ However, more recent studies generally find evidence suggestive of the existence of job-lock.⁴ A smaller number of papers have tried to examine whether health insurance policy changes have lessened the amount of job lock, with mixed results.⁵

³ See Gruber and Madrian (2002) for a survey of the impacts on retirement and job turnover, and Holt-Eakin et al. (1996) and Madrian and Lefgren (1998) for conflicting results on self-employment.

⁴ See Gilleskie and Lutz (2002), Okunade and Wunnava (2002), Borjas (2003), Adams (2004), and Kim and Philips (2010) and Garthwaite, et al. (2013) on job turnover or employment lock, and Fairlie et al. (2011) on self-employment. Conversely, Dey and Flinn (2005) estimate a structural model of job search and matching, and find that employer-provided health insurance does not lead to a significant amount of job-lock.

⁵ Gruber and Madrian (1994) find that continuation of coverage mandates in the 1970's and 1980's led to significant increases in job mobility among prime age males. Kapur (2003) finds that state non-group market reforms in the 1990's had insignificant effects on mobility among subgroups with high expected health costs was generally insignificant, though mobility may have increased among the sick. Sanz-DeGaldeano (2006) finds that the implementation of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) did not lead to a reduction in job lock. Bansak and Raphael (2008) find that the introduction of the State Children's Health Insurance Program (SCHIP) led to increases in job mobility among fathers with SCHIP eligible children whose spouses did not have employer-provided health insurance. DeCicca (2010) found that the implementation of community rating and guaranteed issue regulations in New Jersey increased self-employment levels by 15% to 25%. However, Heim and Lurie (Forthcoming) examined the passage of these regulations throughout the country, and found no significant effect on the level of self-employment, though they did find that the composition of the self-employed changed from younger to older taxpayers.

In this paper, we estimate whether the Massachusetts health reform affected the decision of taxpayers to change jobs. Using a panel of tax returns from over 470,000 taxpayers that spans 2002-2010, we estimate difference-in-differences models for job separation, in which Massachusetts taxpayers form our treatment group, and taxpayers from other states form our comparison groups. Further, we are able to account for the unobserved propensity of individuals to change jobs using individual level fixed effects.

The estimates suggest the Massachusetts reform led to an overall decrease in job separations of between 1.5 and 3.8 percentage points (or between 5% and 16%), depending on marital status, gender, and type of job separation, with this decline driven by a decrease in job-to-job transitions. However, among married young and low income taxpayers, job mobility increased.

The paper proceeds as follows. Section 2 describes the Massachusetts health reform and explores the potential impact these reforms could have on job mobility. Section 3 describes the data and Section 4 presents the estimation strategy. Section 5 presents the estimation results, and Section 6 concludes.

2. Potential Impacts of the Massachusetts Reform on Job Mobility

As noted above, the Massachusetts reform contained a large number of provisions, each of which may have a different effect on the propensity of a worker to leave their current job for a different job, for self-employment, or retirement.

First, the employer mandate is likely to induce firms that previously did not offer health insurance to offer insurance. This increase in plan offering may make employment

at an alternative firm more attractive, if the alternative firm previously did not offer an employer-sponsored plan. Thus, one might expect an increase in mobility from firm to firm.

Second, as noted by Krueger and Reinhardt (1994), there may be employment effects of the reform that alter the number and composition of outside options for the worker. For example, the employer mandate may lead to a decline in employment in firms that previously did not offer health insurance. In addition, to the extent that the cost of mandated health insurance is not passed on to employees, an increase in some firms' labor costs may lead them to cease operations, either within Massachusetts or altogether. As a result, a worker's set of outside options may shrink, resulting in less mobility. On the other hand, if the reform also lowers health insurance prices for firms that already offered health insurance, their demand for labor might increase. Further, potential entrants that had stayed out of the Massachusetts market may now decide to enter once their competitors' labor costs have increased. Together, these might increase the set of outside options for a worker and hence increase job mobility.

Third, the public health insurance expansion and the subsidized Connector arrangement may, among lower income individuals, reduce the health insurance-related advantage of working for a firm that currently provides health insurance relative to a firm that does not offer health insurance, to self-employment, or to retirement. This may increase mobility to either a different firm or to self-employment, or may induce an individual to retire.

Finally, the reform could impact mobility through its impact on the price of health insurance at an individual's current job and at an alternative. To see this, suppose that

mobility is a function both of the price of insurance at the current job and at the alternative, and is given by $M(\text{Price}_{Cur}^{HI}, \text{Price}_{Alt}^{HI})$, where Price_{Cur}^{HI} denotes the price of health insurance at the worker's current job, Price_{Alt}^{HI} denotes the price of health insurance at an alternate job. The effect of regulation implementation on mobility, then, would be

$$(1) \quad \frac{dM}{dREG} = \frac{dM}{d\text{Price}_{Cur}^{HI}} \times \frac{d\text{Price}_{Cur}^{HI}}{dREG} + \frac{dM}{d\text{Price}_{Alt}^{HI}} \times \frac{d\text{Price}_{Alt}^{HI}}{dREG},$$

One would expect that $M_1 > 0$ and $M_2 < 0$. Hence, if the health reform reduced the price of health insurance at an individual's current job, then one would expect mobility to decrease, and vice versa, while if the health reform reduced the price of health insurance at an alternative job, in self-employment, or in retirement, one would expect mobility to increase. As noted above, however, evidence on the price impact of the reform is inconclusive.

Taken together, the impact of the Massachusetts reform on mobility is theoretically ambiguous. Hence, we turn to a difference-in-differences estimation method to examine empirically whether and to what extent the Massachusetts health reform affected the level of self-employment.

3. Data

The data used in this study come from a nine year panel of tax returns that spans 2002-2010. Importantly, this sample includes a number of years before Massachusetts passed their reform, so that we can control for pre-existing differences in job mobility

between Massachusetts and comparison states. In addition, the sample includes a number of years after the regulations were passed, so that we can observe any effects of the policies that may have occurred with a lag.

The panels were created by combining data from a number of cross-sectional files collected by the Statistics of Income (SOI) division of the IRS. Each year, SOI draws a stratified sample of tax returns, where a subset of the sample (known as the Continuous Work History Subsample, or CWHS) consists of a random sample of taxpayers for which the primary filer's social security number ended in one of a set of four-digit combinations (where the identical set of four digit endings is used in each year). Between 1999 and 2004 the CWHS draw consisted of five endings, and since 2005 the CWHS draw consists of ten endings (which includes the earlier five). To create our sample, we combined the CWHS returns from 2002 to 2010.

This dataset includes information from Form 1040, including information on filing status (including single, married filing jointly, married filing separately, and head of household), income, the presence and number of children that are claimed as dependents, and the state of residence. In addition, information on the age and gender of the primary filer (and secondary filer, if applicable) have been merged in from Social Security records. Finally, the dataset includes information from the taxpayers' W-2 forms.

Since we are interested in studying the impact of the Massachusetts reform on job mobility, it is necessary for us to create a measure of mobility using the tax data. Unfortunately, taxpayers are not asked on tax forms whether they changed jobs or left a job during the past years. However, information from W-2 forms can be used to infer job changes and separations.

Each W-2 form includes a box in which an individual's employer enters an employer identification number (EIN), which is a unique number that the IRS uses to identify a business entity. If an individual leaves a job at a particular employer in year t , then, they will have a W-2 form from attached to their Form 1040 from that employer in year t , but not in year $t+1$. Thus, the presence of a W-2 from a particular firm in one year followed by the absence of a W-2 form from that firm in the next year is indicative of a job separation on the part of the individual.⁶

Note, however, that an individual may work for more than one employer in a particular year, and so in any given year may have multiple W-2 forms. As a result, it is also possible for an individual to separate from more than one job in a particular year, or to separate from one or more jobs, while continuing to work at one or more other jobs.

To identify job separations in our sample, then, we do the following. We create a panel of W-2 forms from 2002-2010, where the unit of observation is an individual-employer combination. We then identify job separations through the presence of a W-2 form for an individual followed by that form being missing in the following year.

We then summarize this job-specific separation information in two ways. In the first, we create a variable that denotes whether an individual separated from at least one of their jobs in a particular year. We denote this variable as "Separation from Any Job." Although this variable has the advantage of being the most comprehensive measure of job mobility, it has the disadvantage of including separations from minor side jobs that are unlikely to have been caused by health insurance concerns. As an alternative measure,

⁶ It should be noted that firms sometimes change EIN's. When this happens, our method of identifying separations would wrongly ascribe a separation to workers at that firm. However, the numbers of firms that change EINs each year is likely to be small and uncorrelated with the passage of the Massachusetts reform, and so should not bias our results.

we create a variable that reflects separation from the individual's primary job, as measured by their wages. For this measure, denoted "Separation from Primary Job," we identify in each year the job with the largest amount of wages reported on a W-2 form, and examine whether the individual separated from this job at any point during the sample period. If they did separate, then we consider them to have separated from a primary job in the year in which they separated.

Once created, we merged these separation variables to the main dataset. The sample was then cut to include only returns where both taxpayers (primary and secondary) are aged 25 to 64, to focus on individuals in their prime working years. We also cut those who were married filing separately, or who do not reside in the 50 states or DC. We also excluded taxpayers from Vermont because that state implemented a reform similar to that in Massachusetts during the same period. Finally, we excluded observations from 2010, since we do not observe information from 2011 to infer whether a separation occurred in that year. After these cuts, we were left with 470,801 returns over our eight year sample period.

The main advantage of using tax data in this study is the large sample size. Since we are examining a reform that only occurred in Massachusetts, it is important for the data set to have a sufficient number of individuals from that state in order to be able to identify the effect of those policies. The main disadvantage is that tax data does not contain many of the demographic characteristics that are common in survey data like education and perceived health status. However, because we are using a panel, it is possible to include fixed effects to account for these unobserved characteristics.

Sample statistics are presented in Table 1. In the full sample over the sample

period, 26.6 percent of males and 27.9 percent of females separated from any job in a particular year, while 20.2 percent of males and 20.6 percent of females separated from a primary job.

As noted below, for our base specification, we cut the sample to include residents of states in the northeast (including Connecticut, Maine, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island⁷). In this subsample, separation rates are slightly lower, with separations rates from any job at 24.7 percent among males and 24.8 percent among females, while separation rates from primary jobs are 18.5 percent and 18.0 percent, respectively. In this sample, 12.6 percent of the observations come from Massachusetts, and 56.3 percent come from some state (other than Massachusetts) in which the individual health insurance market had community rating and guaranteed issue regulations.

The mean income in the Northeast sample is \$78,429 the mean age is 44.2, and the average number of children is less than one. Taxpayers filing singly comprise 38.9 percent of the sample, 44.4 percent are married taxpayers filing jointly, and 16.7 percent are taxpayers who file as a head of household.

4. Empirical Strategy

In our difference-in-differences estimation, we define the treatment group as those residing in Massachusetts, with the control group containing those residing in a subset of other states. In our base specification, we include residents of Northeastern states in the

⁷ Recall that Vermont was excluded from our sample

control group. To examine the robustness of the results to the specification of the control group, we also estimate specifications in which the control group includes all states with community rating and guaranteed issue regulations in the individual health insurance market, only New York and New Jersey, and only New York.

We define the post period in our base specification as being 2007-2009, since the implementation of the reform was completed in the middle of 2007. We omit 2006 from the analysis, since the law was signed during that year and so it is a transition year, and treat 2002-2005 as the pre-reform period.^{8,9}

In our most basic specification, we estimate a linear probability model by regressing an indicator for separating from a job (either any or a primary job) on state and time indicator variables, and an indicator variable for the observation coming from Massachusetts in the post period. Thus, our initial estimation specification is

$$(2) \quad \text{JobSep}_{it} = \alpha_1 + \alpha_2^{MA} \text{MAPost}_{it} + \gamma_s + \delta_t + \varepsilon_{it}$$

where JobSep_{it} equals one if taxpayer i separated from a job in year t , and zero otherwise, MAPost_{it} denotes residence in Massachusetts during the post period, γ_s is a state fixed effect, and δ_t is a year fixed effect.¹⁰

Implicit in this specification, however, is the assumption that there are no observed or unobserved individual characteristics that affect the decision to separate from a job. In our more comprehensive specification, we account for these factors, and estimate equations of the form

⁸ Omitting observations from 2006 and cutting the sample further to include only Northeastern states resulted in a sample size of 65,910 tax units.

⁹ We tried a specification in which 2007 is omitted from the sample as a transition year, and a specification in which 2006 is included as a pre-reform year. The results from these specifications are presented below.

¹⁰ Massachusetts and post-period indicator variable are collinear with the set of state and time fixed effects, and so are omitted from the regression.

$$(3) \text{JobSep}_{it} = \alpha_1 + \alpha_2^{MA} \text{MAPost}_{it} + \beta X_{it} + \gamma_s + \delta_t + v_i + \varepsilon_{it}$$

where X_{it} includes the age squared of the primary filer, the number of children, and a ten piece spline in the inverse hyperbolic sine (IHS) transformation of total income,¹¹ and v_i is an individual fixed effect.¹²

Because changes in filing status, the presence of children, or state of residence may be correlated with both changes in a job and changes in regulatory regime, we include fixed effects at the taxpayer-filing status-presence of children-state of residence level.¹³ When this is done, individuals who change marital status, who transition between not having and having children at home, or who move from state to state are treated as different units of observation before and after the change. As a result, identification comes from differences in job separation between those who live in Massachusetts and who did not change marital status or presence of children, and those who are continuously in some other state who also did not change marital status or presence of children.

Finally, because identification of the coefficient of interest comes from state to state variation, we cluster standard errors at the state level.

¹¹ This is done because there are a large number of extreme outliers for the total income variables, and because total income may be either positive or negative. The IHS transformation takes the form $\text{IHS}(y) = \log(y + \sqrt{y^2 + 1})$. See Burbidge, Magee and Robb (1988).

¹² We also tried a specification that included the contemporaneous state-level unemployment rate, along with a one year lag in this rate. The results were very similar to those presented here.

¹³ When individual fixed effects are included in specifications below, observations for which taxpayers were only observed once with a given filing status-presence of children-state of residence combination are dropped from the sample.

5. Results

5.1 Base Specification Results

Table 2 presents the estimation results, using other Northeastern states as the control group. The four columns on the left present results from regressions in which the dependent variable denotes separation from any job among married males, married females, single males, and single females, while the four columns on the right present results from regressions in which the dependent variable denotes separation from a primary job.

In the top panel, we present results from the difference-in-differences specification in (2) above. In Column 1, the Massachusetts health reform is estimated to have increased separation from any job by 1.1 percentage points (or 5.0%) among married males. On the other hand, job separation is estimated to have decreased 3.4 percentage points (13.1%) among married females, and 3.0 percentage points (9.4%) among single females in Columns 2 and 4. In Column 3, no statistically significant effects are found for single males. Similar results are found in Columns 5 through 8, though the impact among single males is now negative and statistically significant. The Massachusetts reform is estimated to have increased separations from primary jobs by 1.6 percentage points (10.8%) among married men, but decreased separations by 1.6 percentage points (8.6%) among married women, and by 3.6 and 2.5 percentage points (17.6% and 12.1%) among single men and women. All four coefficients are highly statistically significant.

As noted above, however, these coefficients are partially identified by job changes that may be due to moves out of state, changes in marital status, or changes in whether the taxpayer has children. In addition, no demographic characteristics of the individuals are accounted for.

In the bottom panel of Table 2, then, we present estimates of the more comprehensive specification in (3). When individual fixed effects are included and individual characteristics are controlled for, the results for women (both married and single) do not change qualitatively, though the coefficients are slightly smaller in some specifications, while the effect on separations from any job among single males is now statistically significant, with the estimate implying that the Massachusetts reform led to a 3.8 percentage point (12.8%) decline in job separations. However, for married males, the results change qualitatively. The Massachusetts reform is now estimated to have led to marginally significant declines of 2.3 percentage points (10.5%) for separation from any job and 1.5 percentage points (9.4%) for separation from primary jobs.

Taken together, the results from this table appear to suggest that the Massachusetts reform led to a decline in job mobility across marital statuses and genders.

5.2 Specification Checks

To examine whether the results above are sensitive to the choice of the comparison group, in Table 3, we reran the specifications that included individual fixed effects and demographic characteristics in the bottom panel of Table 2 using three different comparison groups. The top panel repeats the results from the Northeast comparison group specification above.

In the second panel, we included in the estimation sample all other states which, like Massachusetts, have community rating and guaranteed issue regulations in their individual markets. The results here are similar to those from the base specification, with the Massachusetts reform estimated to have decrease job separations among all groups, albeit insignificantly among married males for both any separation and married females for separation from a primary job.

In the third panel, to focus on states with community rating and guaranteed issue regulations that are located in the northeast and contain large metropolitan areas, we include in the control group only New York and New Jersey. When this is done, all coefficients are again negative, though they are statistically significant only among single males. Finally, in the bottom panel we include only New York in the control group. When this is done, the estimated coefficients on Massachusetts in the post period are again similar to those in the base specification, with negative coefficients that are at least marginally statistically significant in all specifications.

Overall, the results from the base specification appear to be quite robust to the choice of comparison group.

We ran two additional specification checks, the results of which are presented in Table 4. Because Massachusetts passed their reform in 2006 and implemented the reform in 2006 and 2007, it is unclear exactly what the pre and post periods should contain. In Column 1 of Table 4, we rerun the specification from the bottom panel of Table 2, but now 2006 is treated as a pre-reform year and included in the sample, while in Column 2, both 2006 and 2007 are treated as transition years and excluded from the sample. Across these columns, negative effects of the Massachusetts reform on job separations are found,

though including 2006 as a pre-reform year appears to magnify the estimated effect among single males, while excluding 2007 as a post year appears to magnify the estimated effect among married females.

5.3 Results by Demographic Group

To ascertain whether the generally negative effect overall is driven by taxpayers with particular characteristics, Table 5 presents results when the sample is divided according to income level and age.

In Columns 1 and 2, the sample was split by income level. The Massachusetts reform provides subsidies for those with income below 300% FPL, and expanded public insurance coverage to children from families with income below 300% FPL and adults with income below 150% FPL. As noted above, these changes would reduce the health insurance-related advantage of working for a firm that currently provides health insurance relative to a firm that does not offer health insurance, to self-employment, or to retirement which may increase mobility to either a different firm or to self-employment. Since taxpayers with income above 300% FPL are not eligible for these subsidies and expansions, they would only be impacted by the Massachusetts reform through the other possible channels.¹⁴ Because income in the post years might be affected by the policy if it leads to employment or compensation changes, we split the sample according to whether the tax unit reported income in 2005 that was above or below 300% of the federal poverty line.

Looking at these columns, the reform appears to have significantly different effects on job separations in the two income groups. Among those with income below

¹⁴ Though some may choose to work less to become eligible for the subsidies.

300% FPL, the Massachusetts reform is generally estimated to increase job separations. In addition, among married men and women, separations from primary jobs increased by 9.6 percentage points (44.7%) and 5.2 percentage points (18.3%), and both of these increases are statistically significant. In contrast, separations among those with income above 300% FPL are estimated to have decreased among all types of filers for both types of separations.

In Columns 3 through 5 we split the sample according to the age of the individual. When this is done, positive effects on separation are found among married men and women in the youngest group (ages 25-34), with separations from any job increasing by a statistically significant 17.4 percentage points (70.4%) for men and 10.4 percentage points (29.3%) for women, while separations from primary jobs increased by 12.4 percentage points (70.4%) for men and 7.2 percentage points (28.1%) for women. However, separations among single males are estimated to have decreased by 6.8 percentage points (19.3%) from any job and 10.9 percentage points (46.8%) from primary jobs. Those in the middle group (ages 35-49) appear to exhibit the most consistently negative effects, while effects among the oldest group (ages 50-64) are generally smallest in magnitude and insignificant.

Taken together, these results suggest that the reductions in job separations found in the base specification appears to be driven by those with higher income levels and those in their late 30s and 40s. Conversely, among married individuals who were young or were eligible for health insurance subsidies, the reform appears to have increased job mobility.

5.4 Results by Employment Status after Separation

The estimates above group all separations together, regardless of whether the individual left a job for another job, self-employment, retirement, or unemployment. As a result, the declines in separations found above could be reflecting declines in any of these types of separation. However, prior literature has documented that not all separations have equivalent impacts. For example, Topel and Ward (1992) find that a third of early wage growth for men results from job-to-job transitions. However, several papers (including Light and Ureta (1995), Bratsberg and Terrell (1998) and Gladden and Taber (2009)) find that job-to-nonemployment transitions lead to lower lifetime wage profiles. Thus, if the results above reflect a decline in job-to-nonemployment separations, then this impact of the policy is not necessarily a negative outcome.

In Table 6, then, we further classify separations according to the employment status of the individual in the year after the separation. If the individual reports earnings on a W-2 form from a different employer after separation, we consider the separation to be a job to another job separation. If the individual reports self-employment income on Schedule SE in the year after the transition, we consider the separation a job to self-employment transition. We also lump these two types of transitions together, looking at job to another job or self-employment transitions.

Looking across these columns, separations from any job to another job declined by 1.1 to 2.7 percentage points, depending on filing status, with all coefficients statistically significant except that for single females, while separations from primary jobs to another job declined by 0.8 to 2.0 percentage points (with the declines among all but married males being statistically significant). Any job to self-employment transitions

increased by statistically insignificant amounts among married filers and single males, but decreased among single women by a statistically significant 0.7 percentage points, while primary job to self-employment transitions increased by a statistically significant 0.3 percentage points among married men and women, but decreased among single men and women by 0.5 percentage points. Taking these two types of transitions together, job to some other form of employment transitions decreased among all groups, with magnitudes similar to the decline in job to another job transitions. Thus, it appears that the overall estimates were largely reflecting declines in job-to-job transitions.

6. Conclusion

In this paper, we estimate whether the Massachusetts health reform affected the decision of taxpayers to change jobs, retire, or become self-employed. Using a panel of tax returns that spans 2002-2010, we estimate difference-in-differences models for job separation, in which Massachusetts taxpayers form our treatment group, and taxpayers from other states form our comparison groups. Further, we are able to account for the unobserved propensity of individuals to change jobs using individual level fixed effects.

Our estimates suggest the Massachusetts reform led to an overall decrease in job separations of between 1.5 and 3.8 percentage points (or between 5% and 16%), depending on marital status, gender, and type of job separation, with the decline driven by decreases in job-to-job transitions. However, job mobility increased among married young and low income taxpayers, while the negative impacts were centered among higher income taxpayers and taxpayers in their late-30s and 40s.

These results, then, imply though the Massachusetts reform appears decreased job mobility overall, though job mobility did increase among some subgroups. Whether this outcome was positive or negative depends on the relative importance of mobility among the young versus older individuals, and among lower versus higher income individuals.

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Tables

Table 1. Sample Statistics

	Full Sample		Northeast	
	Mean	Standard Deviation	Mean	Standard Deviation
Male Separation from Any Job	0.266	0.442	0.247	0.431
Male Separation from Primary Job	0.202	0.401	0.185	0.389
Female Separation from Any Job	0.279	0.449	0.248	0.432
Female Separation from Primary Job	0.206	0.405	0.180	0.384
Massachusetts Resident	0.024	0.153	0.126	0.331
Northeast Resident	0.190	0.392	0.563	0.496
Resident of State with Community Rating and Guaranteed Issue Regulations	0.144	0.351	1.000	0.000
Total Income	66,693	326,367	78,429	351,913
Age - Males	43.925	10.552	44.207	10.405
Age - Females	43.184	10.738	43.458	10.194
Number of Children	0.855	1.106	0.799	1.072
Filing Status: Single	0.355	0.479	0.389	0.487
Filing Status: Married Filing Jointly	0.464	0.499	0.444	0.497
Filing Status: Head of Household	0.180	0.384	0.167	0.373
Year=2002	0.072	0.259	0.074	0.261
Year=2003	0.074	0.261	0.074	0.262
Year=2004	0.077	0.266	0.077	0.267
Year=2005	0.153	0.360	0.155	0.362
Year=2006	0.155	0.362	0.156	0.363
Year=2007	0.156	0.363	0.155	0.362
Year=2008	0.157	0.364	0.156	0.363
Year=2009	0.156	0.363	0.154	0.361
N	470,801		89,539	

Note: Data from the 2002-2010 Panel of CWSHS tax returns.

Table 2: Massachusetts Reform Difference-in-Differences Regression Results for the Probability of Separation from a Job: Comparison Group Consisting of Northeastern States+

Dependent Variable	Separation from Any Job				Separation from Primary Job			
	Married Males	Married Females	Single Males	Single Females	Married Males	Married Females	Single Males	Single Females
Sample								
Mean of Dependent Variable	0.220	0.260	0.298	0.318	0.148	0.186	0.204	0.206
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post X Massachusetts	0.011** (0.004)	-0.034*** (0.005)	-0.002 (0.004)	-0.030*** (0.006)	0.016*** (0.002)	-0.016*** (0.003)	-0.036*** (0.004)	-0.025*** (0.006)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income Spline	--	--	--	--	--	--	--	--
Individual Fixed Effects	--	--	--	--	--	--	--	--
Age Squared /100	--	--	--	--	--	--	--	--
Number of Children	--	--	--	--	--	--	--	--
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	28,042	23,958	17,169	20,168	28,042	23,958	17,169	20,168
Post X Massachusetts	-0.023* (0.010)	-0.034*** (0.009)	-0.038*** (0.006)	-0.017** (0.007)	-0.015* (0.008)	-0.015* (0.007)	-0.033*** (0.006)	-0.020*** (0.005)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income Spline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age Squared /100	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Children	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	28,042	23,958	17,169	20,168	28,042	23,958	17,169	20,168

Notes: Data from the 2002-2010 Panel of CWSHS tax returns. Table presents coefficients from a linear probability model. Mean of Dependent Variable is mean within Massachusetts during pre-reform years (2002-2005). Standard errors are clustered at the state level, and are in parentheses.

* implies significant at 10%; ** implies significant at 5%; *** implies significant at 1%

+ These states include Connecticut, Maine, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island

Table 3. Massachusetts Reform Difference-in-Differences Regression Results for the Probability of Separation from a Job: Different Comparison Groups

Coefficient on Post X Massachusetts:								
Dependent Variable	Separation from Any Job				Separation from Primary Job			
	Married Males (1)	Married Females (2)	Single Males (3)	Single Females (4)	Married Males (5)	Married Females (6)	Single Males (7)	Single Females (8)
Comparison Group: Other Northeastern States	-0.023* (0.010)	-0.034*** (0.009)	-0.038*** (0.006)	-0.017** (0.007)	-0.015* (0.008)	-0.015* (0.007)	-0.033*** (0.006)	-0.020*** (0.005)
Number of Observations	28,042	23,958	17,169	20,168	28,042	23,958	17,169	20,168
Comparison Group: Other Community Rating and Guaranteed Issue States	-0.009 (0.006)	-0.027** (0.009)	-0.035*** (0.007)	-0.023** (0.007)	-0.008* (0.004)	-0.008 (0.004)	-0.041*** (0.006)	-0.028*** (0.007)
Number of Observations	24,478	20,725	14,804	17,937	24,478	20,725	14,804	17,937
Comparison Group: NY and NJ	-0.011 (0.008)	-0.023 (0.014)	-0.033** (0.004)	-0.015 (0.008)	-0.004 (0.002)	-0.004 (0.005)	-0.037*** (0.002)	-0.019* (0.006)
Number of Observations	16,799	14,191	11,016	13,798	16,799	14,191	11,016	13,798
Comparison Group: NY	-0.020** (0.000)	-0.036*** (0.000)	-0.036** (0.001)	-0.021* (0.002)	-0.007* (0.001)	-0.009** (0.001)	-0.038** (0.003)	-0.023* (0.002)
Number of Observations	12,061	10,377	8,542	10,609	12,061	10,377	8,542	10,609

Notes: Data from the 2002-2010 Panel of CWS tax returns. Table presents coefficients from a linear probability model. All specifications include individual fixed effects, year dummies, an income spline, age squared, the number of children, and a constant. Standard errors are clustered at the state level, and are in parentheses.

* implies significant at 10%; ** implies significant at 5%; *** implies significant at 1%

Table 4. Massachusetts Reform Difference-in-Differences Regression Results for the Probability of Separation from a Job: Robustness Checks

	Coefficient on Post X Massachusetts:	
	2006 Included (1)	2007 Excluded (2)
Separation from Any Job: Married Males	-0.018* (0.008)	-0.017 (0.011)
Number of Observations	33,191	22,939
Separation from Any Job: Married Females	-0.013 (0.009)	-0.048** (0.015)
Number of Observations	28,411	19,585
Separation from Any Job: Single Males	-0.047*** (0.006)	-0.016* (0.007)
Number of Observations	20,342	13,939
Separation from Any Job: Single Females	-0.008 (0.006)	-0.007 (0.007)
Number of Observations	23,934	16,395
Separation from Primary Job: Married Males	-0.017** (0.005)	-0.016 (0.010)
Number of Observations	33,191	22,939
Separation from Primary Job: Married Females	-0.002 (0.007)	-0.029** (0.012)
Number of Observations	28,411	19,585
Separation from Primary Job: Single Males	-0.033*** (0.006)	-0.005 (0.006)
Number of Observations	20,342	13,939
Separation from Primary Job: Single Females	-0.029*** (0.003)	-0.011 (0.006)
Number of Observations	23,934	16,395

Notes: Data from the 2002-2010 Panel of CWS tax returns. Comparison group consists of Northeastern states. Table presents coefficients from a linear probability model. All specifications

include individual fixed effects, year dummies, an income spline, age squared, the number of children, and a constant. Standard errors are clustered at the state level, and are in parentheses.
* implies significant at 10%; ** implies significant at 5%; *** implies significant at 1%

Table 5. Massachusetts Reform Difference-in-Differences Regression Results for the Probability of Separation from a Job: Subsample Analyses

	Under 300% FPL in 2005 (1)	Over 300% FPL in 2005 (2)	Ages 25- 34 (3)	Ages 35- 49 (4)	Ages 50- 64 (5)
Separation from Any Job: Married Males	0.018 (0.020)	-0.030** (0.009)	0.174*** (0.022)	-0.053*** (0.013)	-0.018* (0.008)
Mean of Dependent Variable	0.311	0.196	0.247	0.233	0.188
Number of Observations	4,615	17,982	3,802	13,685	10,555
Separation from Any Job: Married Females	0.002 (0.010)	-0.035*** (0.010)	0.104*** (0.029)	-0.029*** (0.007)	-0.069*** (0.014)
Mean of Dependent Variable	0.387	0.235	0.355	0.268	0.210
Number of Observations	3,645	15,551	4,177	12,119	7,662
Separation from Any Job: Single Males	0.013* (0.007)	-0.038*** (0.007)	-0.068*** (0.016)	-0.023** (0.007)	0.005 (0.017)
Mean of Dependent Variable	0.364	0.220	0.352	0.272	0.233
Number of Observations	4,910	7,167	6,544	6,820	3,805
Separation from Any Job: Single Females	0.010 (0.012)	-0.033*** (0.008)	-0.039 (0.028)	-0.015* (0.008)	-0.017 (0.016)
Mean of Dependent Variable	0.370	0.250	0.403	0.308	0.211
Number of Observations	7,319	7,154	6,491	8,025	5,652
Separation from Primary Job: Married Males	0.096*** (0.018)	-0.033*** (0.006)	0.124*** (0.008)	-0.031*** (0.008)	-0.022* (0.010)
Mean of Dependent Variable	0.215	0.131	0.176	0.159	0.119
Number of Observations	4,615	17,982	3,802	13,685	10,555
Separation from Primary Job: Married Females	0.052*** (0.011)	-0.021* (0.009)	0.072** (0.023)	-0.008 (0.007)	-0.011 (0.012)
Mean of Dependent Variable	0.284	0.166	0.256	0.190	0.153
Number of Observations	3,645	15,551	4,177	12,119	7,662
Separation from Primary Job: Single Males	-0.036*** (0.006)	-0.015** (0.005)	-0.109*** (0.014)	0.005 (0.007)	0.036* (0.019)
Mean of Dependent Variable	0.264	0.140	0.233	0.186	0.178

Number of Observations	4,910	7,167	6,544	6,820	3,805
Separation from Primary Job: Single Females	0.009 (0.008)	-0.030*** (0.007)	-0.022 (0.023)	-0.014 (0.009)	-0.033** (0.014)
Mean of Dependent Variable	0.255	0.151	0.237	0.214	0.148
Number of Observations	7,319	7,154	6,491	8,025	5,652

Notes: Data from the 2002-2010 Panel of CWS tax returns. Comparison group consists of Northeastern states. Table presents coefficients from a linear probability model. All specifications include individual fixed effects, year dummies, an income spline, age squared, the number of children, and a constant. Mean of Dependent Variable is mean within Massachusetts during pre-reform years (2002-2005). Standard errors are clustered at the state level, and are in parentheses. * implies significant at 10%; ** implies significant at 5%; *** implies significant at 1%

Table 6: Massachusetts Reform Difference-in-Differences Regression Results for the Probability of Separation from a Job: By Employment Status after Separation

Dependent Variable	Separation from Any Job				Separation from Primary Job			
	Married Males	Married Females	Single Males	Single Females	Married Males	Married Females	Single Males	Single Females
Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(A) Job to Another Job								
Post X Massachusetts	-0.018* (0.009)	-0.027*** (0.007)	-0.022** (0.008)	-0.011 (0.008)	-0.010 (0.007)	-0.008* (0.003)	-0.020*** (0.006)	-0.013* (0.006)
Mean of Dependent Variable	0.185	0.199	0.268	0.290	0.113	0.126	0.174	0.177
Number of Observations	28,042	23,958	17,169	20,168	28,042	23,958	17,169	20,168
(B) Job to Self-Employment								
Post X Massachusetts	0.000 (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.007*** (0.001)	0.003*** (0.001)	0.003** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
Mean of Dependent Variable	0.011	0.003	0.008	0.010	0.004	0.001	0.007	0.007
Number of Observations	28,042	23,958	17,169	20,168	28,042	23,958	17,169	20,168
(C) Job to Another Job or Self-Employment								
Post X Massachusetts	-0.018* (0.009)	-0.027*** (0.007)	-0.022** (0.008)	-0.011 (0.008)	-0.01 (0.007)	-0.008* (0.003)	-0.020*** (0.006)	-0.013* (0.006)
Mean of Dependent Variable	0.185	0.199	0.268	0.290	0.113	0.126	0.174	0.177
Number of Observations	28,042	23,958	17,169	20,168	28,042	23,958	17,169	20,168

Notes: Data from the 2002-2010 Panel of CWS tax returns. Comparison group consists of Northeastern states. Table presents coefficients from a linear probability model. All specifications include individual fixed effects, year dummies, an income spline, age squared, the number of children, and a constant. Standard errors are clustered at the state level, and are in parentheses.

* implies significant at 10%; ** implies significant at 5%; *** implies significant at 1%