

Migration and earnings among university graduates: heterogeneity in effects by origin-destination population size and ability

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Extended abstract

Recent trends of continued spatial concentration of national populations into larger and more population-dense regional labour markets have spurred increased interest among social scientists and policy makers. Economic and social polarization between large urban and more sparsely populated regions is also a major issue in the public debate. Increased knowledge on current magnitudes, trends and underlying mechanisms for concentration is vital for design of policy. Migration is an important mechanism for reducing regional labour market imbalances and for an efficient allocation of the work force. Economic incentives are not the only but important drivers of location choices favouring larger and more densely populated local labour markets. Empirical research generally confirms theories of positive economic effects of geographical concentration of populations and firms (agglomeration economies). Workers in regional labour markets with large populations have relatively higher incomes from employment than other workers, presumably an essential pull factor for working age people considering relocation.

In this study we use a large sample of Swedish university graduates and estimate the earnings effects of migration upward and downward in the regional hierarchy. The study relates most closely to previous research on income effects of internal migration and studies using internal migration for estimation of the urban wage premium (UWP). It also relates to the literature on spatial sorting of skills.

Research on internal labour migration generally indicate migrations flows to respond to regional labour market imbalances and show positive effects of mobility on income from employment. Most studies in this field estimate the average effect of non-directional moves, i.e., the average effect of all moves over regional borders or over certain distances¹. Exceptions include some studies primarily aimed at studying economic effects of agglomeration using directional moves by size of destinations to identify labour productivity differences between labour markets of different size, i.e. the UWP. Information on directional moves by size of regions is also used to identify human capital/learning effects from employment in larger regions. Findings generally indicate increasing effects of migration on earnings by increasing size of the new location (positive UWP) and positive portable learning effects from working in larger labour markets.

¹ This is mostly the case even if the average effect is based on e.g. aggregated and pooled data on all in- and outmigration flows between each unit in the regional system.

Higher incomes in large cities/densely populated regions may reflect agglomeration effects, but also effects of systematic residential sorting of workers by their innate productivity. Therefore, it is important to control for selectivity into migration and to consider heterogeneity in effects by origin and destination labour market size. Also, the selectivity into locations and potential heterogeneity in effects underlines the importance of common support in data when comparing the earnings outcomes of migrants and stayers. We use longitudinal population register data on Swedish university graduates and propensity score matching methods to estimate the earnings effects of migration between functional labour markets. Special attention is on how effects differ by origin-destination population size and individuals ability. Thus, we estimate the urban wage premium from relocation between regional labour markets of difference size, and we consider spatial sorting and heterogeneous effects on earnings by ability. To adjust for differences in nature and nurture factors affecting productive skills we use information on parents socioeconomic status, the individual's high-school grades and university rank. The analysis is confined to university graduates because of the important role of human capital for economic growth and regional development in other dimension, the relatively high mobility of the highly educated, and because theory and empirical evidence indicate an especially high urban wage premium for this group.

We contribute to previous research in four major aspects. First, we use nationwide longitudinal data and examine heterogeneity in initial and dynamic effects on earnings across the urban hierarchy by focusing on origin-destination specific moves upward as well as downward migration across a discrete classification of the full set of functional labour market regions. We argue that the applied classification captures important differences between the regions in terms of attributes affecting the probability and quality of job matching, as well as the potential for human capital accumulation. Second, we follow the approach in recent literature using migration between local labour markets to identify agglomeration effects on earnings. However, the parameter of our primary interest is the treatment effect of migration on earnings among the treated (not the average treatment effect) and we provide explicit assessment whether there exists comparable migrants and stayers for each origin and destination combination. Third, we define place of origin not as place of university graduation, but as place of residence at age 19 which generally coincides with graduation from high school and nest leaving. In our judgement, this provide better information on exposure of place-specific factors affecting productive skills than using place of residence at graduation as the definition of origin. For example, it is reasonable to believe that university students who graduated from high-schools in larger university towns have on average accumulated more of agglomeration advantages than students coming from smaller places. Fourth, we deviate from comparable studies by not conditioning estimates of the UWP on post-migration events, such as characteristics of jobs and workplaces in future locations. We instead consider these as potential drivers of the matching and learning effects of agglomeration and thus likely mediators of the estimated effect of migration on earnings. We show how estimates of UWP may change when conditioning on these types of potentially endogenous events. Moreover, given the population register data at hand, we

do not have to restrict our sample by post-treatment labour market outcomes such as employment and earnings.

We find strong evidence of residential sorting. Our results indicate consistent positive self-selection on ability-related variables in upward migration in the regional labour market (size) hierarchy, and negative or insignificant self-selection in downward migration. We estimate the treatment effect on the treated by comparing the earnings of comparable migrants and stayers and find positive effects of upward migration at all levels of the urban hierarchy. The estimated UWP of upward migration to the largest labour market region (Stockholm) is particularly high and ranges from 17–21 percent in the first year after migration (initial UWP) to about 23–26 percent in the fifth year after migration (dynamic UWP). The estimated effect on earnings of upward migration to the Göteborg and Malmö labour market regions (number two and three in the urban hierarchy) is much smaller (around 7 percent initially and with a tendency to decrease over time). We also find that the estimated effects on earnings of upward and downward migration are far from symmetric (upward migrants to Stockholm gain more than downward migrants from Stockholm lose). When focusing on differences in the UWP across the ability distribution, we find that high-ability graduates receive a particularly large initial and dynamic premium of upward migration to the Stockholm region (about 22 percent and 32 percent, respectively). In all, our estimates of the effects of migration on earnings, indicate that the Stockholm region offers unique productive advantages that are distinct from other large urban areas and smaller regions in the Swedish urban hierarchy.

In a supplementary analysis, we re-estimate the UWP using a specification that adds a set of post-treatment attributes frequently appearing as explanatory variables in the literature. The results indicate substantial reductions in the estimated gains/losses of migration to/from the Stockholm region, particularly so in the case of migration exchange between small regions and the Stockholm region. Our interpretation of these findings is that the introduction of post-treatment controls partly obscures underlying differences in the productive environment between regions, and as a result can generate bias in the estimates of the effects of migration on earnings.