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Wage inequality between financial hubs and periphery

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ABSTRACT

The observation that large cities pay higher wages for the same skilled work has caught the attention of scholars recently. The urban wage premium thesis suggests that urban sorting, skill matching and learning externalities in large cities result in a spatial wage gap between large and small cities. In this paper, a different spatial lens of wage premium is examined. Specifically, we hypothesize that the wage premium phenomenon may be more prominent between networked and less networked cities than between large and small cities. We test this hypothesis on skilled financial workers and their human capital networks. The results indicate that the financial human capital network is structured spatially around hubs and peripheral cities. Wage inequality is significant between centrally located hubs and peripherally located cities compared to large and small cities. The findings provide evidence for a networked city wage premium, suggesting that information and resource connections structured by skilled individuals contribute to wage differences between cities.

Introduction

Executives and professionals such as financial employees of hedge funds or investment banks are now among the most highly-paid workers. The top 1% of income concentration is predominantly associated with this class of workers (Kaplan & Rauh, 2010) who lead exclusive elite lifestyles (Ley, 2004). Most studies note that big cities offer higher wages and this contributes to wage inequality between large and small cities, and between cities and rural areas. Urban scholars refer to such a phenomenon as the "urban wage premium", and they theorize that wage inequality reflects certain advantages of large and dense cities, particularly their ability to attract human capital (Glaeser & Maré, 2001).

The objective of this paper is to examine the urban wage premium phenomenon but it departs from the prevailing literature in two ways. First, it focuses on financial human capital networks in the United States (US). Wage inequality within industries has become more serious than between industries (Wheeler, 2005), and this is best illustrated in the finance industry where spatial mobility among the skilled is high. Second, it applies network analysis to understand core-periphery patterns of wage inequality among cities. The inequality that earnings of skilled financial workers generate has been a source of criticism with Kratke (2010) questioning the creativity of their skills. In a recent opinion piece, Paul Krugman (2014) shows that CEOs, managers and financial professionals dominate the upper stratum of income distribution with important implications for workers in other occupations and for cities that are less financially-oriented.

According to the urban wage premium literature, big cities like New York City are magnets for skilled and abled workers who move to these cities because they are able to better match their skills in the labor market; there are also more opportunities for learning from knowledge externalities. Studies show that earnings in large cities are between 32% (Baum-Snow & Pavan, 2012) to 36% higher than smaller cities or rural areas (Glaeser & Maré, 2001), and that one-third of the variation in urban inequality may be explained by the distribution of skill level (Glaeser, Resseger, & Tobio, 2009).

In this paper, we consider a different spatial lens that redirects attention from city size to human capital networks as the functional basis to understand urban wage differences. Wage inequality is increasingly traced to cities' relative position in urban networks (Monaghan & Ikeler, 2014; Timberlake et al., 2012). Financial workers are among the most mobile group of workers, and their networks of movements capture knowledge spillovers that are vital to the innovations of a city's firms. We hypothesize that cities that are well-positioned and connected within these networks, that is, financial hubs, are more likely to offer higher wages arising from increased firm productivity and innovation rents. In contrast, cities that occupy the periphery of these networks will experience the

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opposite effect. In the next section, we outline the theoretical argument for wage inequality through the wage premium framework, and the role that human capital networks play in this. This is followed by network analysis that identifies financial hubs and peripheries. Wage premium is examined next between large and small cities, hubs and peripheries. The results are discussed and implications offered in the conclusion.

Wage inequality: Literature review

Urban wage premium

There is consensus among scholars that an upward trend of income inequality has been occurring in the United States (US) since the 1990s (Lemieux, 2008). These studies note that earnings have diverged between the highly-educated and educated, and between college and high school graduates. Wage divergence is explained in part by the growth in demand for higher-skilled workers. Demand for skills is predominantly driven by technological changes in the information and computer industries. Of particular concern is that wage inequality is highly concentrated at the top 10% or even top 1% of the wage distribution. Studies of the concentration of the highest incomes have focused on elite executives and skilled professions with specific attention on the earnings of Wall Street workers in the financial sector (Kaplan & Rauh, 2010). Such a focus has something to do with the high compensation of investment and financial services individuals whose bonuses often reach millions of dollars. According to a report by the Institute for Policy Studies, banks on Wall Street paid nearly $27 billion in bonuses to 165,000 employees in 2013 (Anderson, 2014).

Data obtained from the Bureau of Labor Statistics (BLS) indicate that the mean wages of CEOs and financial managers in 2013 were $178, 400 and $126,660 respectively. This is nearly twice that of financial advisors ($90,730) whose mean wage is in turn twice that of credit counselors ($44,960) (Bureau of Labor Statistics, 2014) indicating significant wage differences within the skilled financial class. Not surprising, a burgeoning literature has focused on the wage gap between skilled financial workers (Lemieux, 2008). This literature finds that the very skilled tend to sort themselves spatially to big cities. Sorting patterns of the less skilled on the other hand favor smaller cities. That is to say, workers move to different cities depending on their skill level. This implies that large cities like New York City, Los Angeles and Detroit disproportionately attract top talents because there are more opportunities to raise earning levels (Eeckhout, Pinheiro, & Schmidheiny, 2010). Concentration of human capital in global cities is accompanied by social polarization that reflects structural shifts in occupational and wage distribution patterns (Hamnett, 1994).

Much of the theorization on spatial sorting may be traced to the work on urban wage premium. More than ten years ago, Glaeser and Maré (2001) raised the question as to why wages are higher in large metropolitan areas than outside of these cities. They found that the aforementioned wage premium is highest among the most skilled workers. Human capital concentration in large cities, they posit, is explained by the relocation and retention of abled workers who move to the cities to benefit from wage gains, and to strengthen learning through interactions with other skilled workers. Moretti (2004) confirmed that cities with a highly educated workforce are underscored by higher ability. He reasoned that a college worker at a software company is likely to be more abled than a college worker at a shoe company. Similarly, a lawyer who works in New York City's Wall Street is more abled than a lawyer in Scranton, Pennsylvania. In both cases, skill differences allow workers to sort themselves into different cities to realize the matching of skills.

Other authors correlate the advantages of cities for the skilled to amenities (Florida, 2002) and urban production logics (Scott, 2010). Firms are said to be more efficient in cities and are therefore able to pay higher wages. But efficiency does not solely explain why firms are willing to pay higher wages in a larger city. Glaeser and Maré (2001) propose that they do so because labor productivity is higher, a point we will return to in the next section. Their proposition bears some merit as studies have shown that wage inequality may be driven by cities' concentration of cognitive skills (Florida, Mellander, Stolarick, & Ross, 2012). Overall, the urban wage premium literature maintains that the spatial distribution of human capital significantly explains inter-urban and urban-rural wage inequality (Glaeser et al., 2009).

Networked city wage premium

The role of skilled labor in generating knowledge spillovers has preoccupied much of the literature on urban and regional innovation. This literature highlights the role of social contacts, collaboration and interactions to the coordination of innovation. Skilled individuals, particularly in the finance industry, are highly mobile, and they are a principal carrier of information and knowledge. Their social interactions and contacts in space are embedded in networks, and information is procured through nodes or links between individuals and groups (Malecki, 2010). Human capital networks function as repositories of knowledge, and, membership in the network increases access to a fund of knowledge that reinforces learning and innovation. That the city is an optimal host for innovation activities may have something to do with the fact that Marshallian externalities arising from human capital networks are better fostered at the urban scale. Moreover, cities are more open to ideas and creativity, and this attracts geographically mobile individuals including skilled immigrants and skilled native movers (Shearmur, 2012). Skilled individuals tend to be endowed with tacit knowledge, and their geographic mobility is an important channel by which knowledge is disseminated and diffused over a larger geographical area. Trippl's (2013) study of star scientists shows that their geographical mobility positively impacts both sending and receiving areas through increased spatial connectivity brought on by greater interregional as well as intraregional knowledge linkages. By generating information leakages from one city to another, human capital networks are responsible for knowledge externalities that underscore much of firm innovation in cities (Rodríguez-Pose & Tselios, 2010).

The financial sector is characterized by no shortage of innovation. One example is the securitization of mortgages. Such innovations depend rather heavily on the creativity of educated individuals who possess a high level of analytical and cognitive skills (Clark, 2008). Monetary returns to such skills are, not surprisingly, quite high: employees in finance on average make 50% more in income than similarly skilled peers in other industries since 2006 (Mukunda, 2014).

Global cities like London and New York City attract a large pool of financial workers (Sassen, 1991) who relocate or migrate to the cities because financial agglomeration ensures that skills are not only better matched, but that earning rewards are also higher. This is because the contacts, knowledge and network resources of geographically mobile individuals bring competencies to financial firms in these cities that augment the innovation capability of the firms. Consequently, a literature has emerged that examines the role of skill in migrants and movers' earning differentials. They find that migrants and movers experience faster income growth when they relocate to urban growth centers (Pekkala, 2002), and earnings are higher among younger movers (Lehmer & Ludsteck, 2011). But they also found that the urban wage premium is likely to kick in