Dynamic decomposition of regional wage differentials in Korea

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ABSTRACT

Using a Juhn–Murphy–Pierce (JMP) decomposition, this study analyses the dynamic changes in regional wage differentials between the Seoul Metropolitan Areas and other regions in South Korea. Data from the Korean Labor and Income Panel Study for three years (2000, 2004, and 2008) is used. JMP decomposition provides information about the components that explain changes in regional wage differentials over time. Between 2000 and 2004, the variations in observed and unobserved components are associated with counteracting effects on regional wage differentials. While changes in observed components contribute more to widen regional wage differentials, those in unobserved components narrow them. However, between 2004 and 2008, both observed and unobserved components move in the same direction to narrow regional wage differentials. Based on our empirical results, we discuss some policy implications.

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1. Introduction

Regional economic concentration may be beneficial to an economy through agglomeration economies and can enhance the accumulation of human capital through information externalities and efficient job search/matching systems that boost economic growth (Glaeser, 1999). It is also possible that excessive concentration causes diseconomies of scale and an inefficient resource allocation. Moreover, such concentration and resulting income inequality generates congestions, pollutions, and socio-political instability, thereby, reducing investment (Alesina & Perotti, 1996).

In these respects, the problems of urban population concentration and regional inequality are an important public policy issue in many countries. In South Korea as well,

concern is voiced over widening regional disparities as population and economic power concentrate in the Seoul Metropolitan Area (SMA).[1] Consequently, the Korean government has implemented various public policies to reduce these problems. For example, a Special Act on Balanced National Development was passed by the Korean National Assembly in 2003 from which the first Five-Year Plan for Balanced National Development was implemented in the period 2004–2008.

However, the SMA with just 11.8% of the nation's total land area accounts for 48.9% of the total population in 2010 compared to 46.2% in 2000. Similarly, the SMA's share of the regional gross domestic product was 47.7% in 2000 and 48.8% in 2010. It seems that population and economic

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[1] The SMA is a region located in northwest South Korea including three different administrative districts: Seoul Special City, Incheon Metropolitan City, and Gyeonggi Province. The SMA is ranked as the second largest metropolitan area in the world (following the Tokyo Metropolitan Area in Japan) with a population of around 23.5 million as of 2010 (Forstall, Greene, & Pick, 2009).

power have continued to become concentrated in the SMA, despite the government's efforts to mitigate this concentration.

Many previous studies have attempted to decompose regional wage differentials, such as Cotton (1993), Eberts and Schweitzer (1994), Oaxaca and Ransom (1994), Carlstrom and Rollow (1998), and Garcia and Molina (2002). These analyses, however, are conducted from a static perspective using the decomposition method developed by Oaxaca (1973) and Blinder (1973). The Oaxaca–Blinder decomposition has its own limitations for investigating the dynamic changes in the wage differentials over time as it only analyses the factors contributing to wage differentials at a given point in time.

Juhn, Murphy, and Pierce (1991, 1993) provide a method to decompose wage differentials from a dynamic perspective (Juhn–Murphy–Pierce dynamic decomposition). This method permits the decomposition of wage differentials into more diverse components than the Oaxaca–Blinder approach and can explain changes in wage differentials over time. Most previous studies employing the dynamic method, however, are concerned with wage differentials between genders (Blackaby, Clark, Leslie, & Murphy, 1997; Blau & Kahn, 1997; Brown, Roberts, & Taylor, 2011; Edin & Richardson, 2002; Fransen, Plantenga, & Vlasblom, 2010; Juhn et al., 1993; Simón, 2012) or races (Darity, Guilkey, & Winfrey, 1996; Juhn, 2003; Juhn et al., 1991). Empirical analyses of the dynamic decomposition of regional wage gaps are relatively scarce, the only exception being Pereira and Galego (2011) using Portuguese data.

Wage differentials are actively debated in Korea, but the discussions primarily concern the wage differentials between full-time and temporary workers (Ahn, 2001; Jung, 2007; Lee & Kim, 2009), the gender wage gap (Cho & Cho, 2009; Cho, Cho, & Song, 2010; Cho, Lim, & Lee, 2010), and inter-industry wage differentials (Shin, 2003).[2] A decomposition of the regional wage gap can be found in Heo (2007) and Lim and Cho (2009), but they use the Oaxaca–Blinder method focusing on the static perspective.

The purpose of this study is to investigate the dynamic changes in wage differentials between the SMA and other regions in Korea by applying the Juhn–Murphy–Pierce (JMP) decomposition method. Our sample data are from the Korea Labor Institute's Korean Labor and Income Panel Study (KLIPS) for three different years (2000, 2004, and 2008). Our approach is not only able to reveal the dynamic changes in wage differentials between the SMA and non-SMA (NSMA) regions, but can also provide clear information regarding the factors affecting these changes. Implementing these analyses allows policy makers to understand which factors – prices or quantities, observed or unobserved – affect the dynamic changes. Thus, our analysis aids in the development of specific policy measures to reduce wage inequalities across regions.

The remainder of this study is organized as follows: Section 2 briefly describes the theoretical background and related literature. Section 3 discusses the empirical methodologies used in this study. Section 4 explains the data we used, and Section 5 reports the results of our analyses. Section 6 concludes.

2. Theoretical considerations and literature review

Neoclassical theories state that if labor and capital move freely and information is perfect, an economic equilibrium results in factor price equalization across regions. Then what can explain the regional wage differentials in reality? Many studies have considered various causes of regional wage differentials among regions. Most directly, differences in the cost of living, such as higher housing prices, may be the cause. Coelho and Ghali (1971) find that differences in the cost of living can explain the majority of wage differentials between the Northern and Southern regions in the US. However, Glaeser and Maré (2001) and many other studies argue that even after adjusting for regional differences in the cost of living, real wage differentials among different regions may exist for the following reasons.

First, Combes, Duranton, and Gobillon (2008) emphasize regional differences in terms of productivity-related worker characteristics such as experience, skills, and educational attainment. Using French panel data, they find that the most important factor in regional wage differentials is the higher human capital of urban workers. Second, regional wage differentials may arise as a result of differences in the return to productivity-related worker characteristics as argued by Borjas, Bronars, and Trejo (1992). Compensation for skills may increase in certain regions to attract more skilled and productive workers. If this is the case, workers with similar observable characteristics may receive different real wages, causing a regional wage gap. Third, the concentration of human capital in a specific region may cause knowledge spillovers that improve productivity. Productivity is increased by the accumulation of human capital through internal technological innovation (Lucas, 1988) and the external effects of knowledge spillovers (Romer, 1986); improved productivity allows higher wages to be paid. If productivity improvements are differently distributed among regions, their wages will vary.

Fourth, based on alternative urban theories, another explanation for wage differentials is agglomeration economies. Cities enhance the accumulation of human capital through information externalities and an efficient job search/matching system (Glaeser, 1999). Proximity through density and concentration results in transportation cost savings, workers easily acquiring ideas from their neighbors, and intellectual spillovers. This efficiency is partially responsible for the urban wage premium.

Generally, empirical studies of wage differentials between urban and non-urban areas show that workers in urban areas earn more than workers in non-urban ones, after controlling for observable characteristics (Addario & Patacchini, 2008; Glaeser & Maré, 2001; Yankow, 2006).

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[2] Other important studies on wage differentials in the Korean labor market include the following: Cho, Cho, et al. (2010) and Cho, Lim, et al. (2010) investigate the dynamics of gender wage differentials in the dual (core and peripheral) labor markets; Cho and Cho (2011) study the different dynamic changes of gender wage gaps in the formal and informal sectors; and Kim and Cho (2009) examine entry dynamics of self-employment and their determinants.