8 Skill Mismatch and Regional Unemployment in Poland

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8.1 Introduction

This chapter reports estimates of the impact of structural features of local labour markets on the geographical distribution of unemployment in Poland. Here structure is defined primarily in terms of industry and education. The education structure of the potential labour force is taken to reflect the skill mix of labour supply. The industrial and sometimes occupational structures of employment are taken to reflect, as least in part, the skill structure of labour demand.

Why choose education as a key structural feature? There are three outstanding a priori reasons. First, most of the formerly centrally planned economies featured a much larger industrial sector, and correspondingly smaller service sector than their Western counterparts. Industry generally employs a much greater share of manual workers with vocational and primary education than services. A shift towards services was one of the most predictable changes to occur through transition. Second, on the supply side, there was a massive rise in completed education levels among Poland’s population of working age, through the 1990s. This is documented below. Thirdly, there is a universal and reliable inverse relationship between broad educational rankings and unemployment rates. By and large, lower educated or less-skilled workers have higher unemployment rates. There are several reasons for this inverse relationship, which are briefly discussed in what follows. This inverse relationship holds for Poland and again this is documented below.

These three facts fairly naturally combine to suggest the hypothesis tested in this chapter, which can be restated as follows. If the regions of Poland differ markedly in their skill structures and experienced different sized shifts in these structures, then these changes should account for some of the regional unemployment picture over the 1990s.

The study covers 1994–1998 inclusive. It was a time of rapid economic growth in Poland. Over this period the data source, the Polish Labour Force Survey, categorised industries, occupations and regions in a consistent way. After 1998 the 49 administrative regions of Poland, the wojewodstwa, were reduced to 17, with many new boundaries. The regions will be referred to by the anglicised expression voivodship. Because of this administrative change, researchers of Poland’s regional evolution have concentrated on this period.
Let us briefly summarise some relevant findings from three fairly recent papers. Newell and Pastore (2000) demonstrate that unemployment rates and indices of industrial and occupational change are positively and significantly correlated across voivodships. They also show that inflow rates to unemployment are also correlated with these indices of change. The indices that Newell and Pastore use reflect only the volume of structural change, rather than the skill content. Newell and Pastore also show that for individuals, the probability of inflow to unemployment from employment is strongly inversely related to completed education levels. Lastly, Newell and Pastore document that there is strong persistence in regional unemployment patterns.

Faggio and Konings (2003) demonstrate the wide diversity across voivodships in the nature and timing of industrial restructuring. Deichmann and Henderson (2000) study regional evolutions from the economic geographer's perspective. They find that Poland experienced little internal migration over the period, much less than they would have expected from the study of other countries. They argue plausibly that housing market imperfections are at the heart of this lack of mobility. Deichmann and Henderson also study the regional concentration of industries. They find that manufacturing and agriculture were initially quite highly concentrated, but that after the initial contraction of manufacturing following the 'Big Bang' reforms, manufacturing began to become regionally less concentrated. Also, they find no evidence of more rapid manufacturing growth in regions of high unemployment. Lastly, Deichmann and Henderson find growing concentration in services, in the large urban centres.

There is now quite a long list of facts. Let us summarise. Firstly, there is little migration and a fair amount of persistence in relative unemployment rates. Secondly, there is wide diversity in industrial and skill structure and across voivodships. Also, these structures changed markedly over the period.

The next section reviews the data, documenting the large shift in skills, the regional diversity of skills and industrial structures and the changes in these structures across voivodships. Section 8.3 discusses theoretical issues in order to give foundations to the interpretation of the empirical work. Section 8.4 discusses the econometric results and Section 8.5 concludes. We find, plausibly, that higher skilled populations tend to generate lower unemployment rates and that controlling for population skill levels, lower levels of relative demand for unskilled workers raises a region's unemployment rate. These equilibrium and disequilibrium phenomena can explain about half of the regional variance in Polish unemployment rates.

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1 The typical index used by Newell and Pastore (2000) was of the form:

\[ I_t = \frac{1}{2} \sum \Delta s_i \]

Here \( s_i \) is sector \( i \)'s share of employment and \( \Delta \) is the change over a period ending at \( t \).