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Putting new economic geography to the test: Free-ness of trade and agglomeration in the EU regions ☆

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Abstract

For the NUTS II EU regions we estimate the wage equation that is central to the new economic geography literature. Our first main finding is that a spatial wage structure exists for the EU regions. Next, we analyze what our estimations imply for the link between the free-ness of trade and agglomeration for the EU regions. Based on multi-region simulations we find that the implied free-ness of trade is such that the degree of agglomeration is still limited. This conclusion is supported by evidence based on bilateral industry trade data. Our analysis also illustrates the current limitations of empirical research in new economic geography.

JEL classification: R2
Keywords: New economic geography; Spatial wages; Free-ness of trade; Agglomeration

1. Introduction

In his review of Fujita et al. (1999) but in fact of the whole New Economic Geography (NEG) literature, Neary (2001) reminds us that the real test for the NEG is to go beyond mere theory and to bring out its empirical and policy relevance. This paper addresses the empirical relevance of the NEG. In doing so, we take the basic message of Leamer and Levinsohn (1995, p. 1341), "estimate don't test" seriously. We will show the usefulness of the NEG, but we will not really test it against

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alternative theories, though we will control for fixed or 1st nature geography. We also take the second message of Leamer and Levinsohn seriously, and that is "don't treat theory too casually". For this paper their advice means that our empirical analysis is well grounded in NEG theory and that, in turn, we will explicitly address the theoretical implications of the empirical findings. In doing so, we will have to face the difficulties that arise in NEG models when empirical findings are confronted with the underlying model. In this sense our paper is also about the (current) limitations of empirical research in NEG.

Assessing the empirical relevance of NEG is not easy. It is well known that agglomeration patterns can be found at all levels of aggregation (country, region, or city). But this does not necessarily imply that neo-classical theories of location are without merit. Geographical concentration of factor endowments or pure technological externalities could lead to agglomeration in neo-classical models. In the same vein, the absence of agglomeration does not imply that the NEG models are not relevant. NEG models are characterized by multiple equilibria, of which the symmetric or spreading equilibrium is one. In addition, one could point out that the application of these models to different economies with different (labour market) institutions (like the USA or the EU countries), or to different geographical scales (country versus city level) sits uneasy with the tendency in empirical NEG applications of a 'one size fits all' approach. Finally, from a more methodological angle, there are important questions about the (spatial) econometrics involved as well as about data measurement (see Combes and Overman, 2004). The conclusion is that the same empirical facts about agglomeration can be explained using different theoretical approaches, see also the introduction to this special issue. On the one hand this is good news, because it means that the facts are not in search of a theory. On the other hand it leaves unanswered the question as to the relevance of NEG and, within NEG, as to the relevance of specific NEG models. In recent theoretical work by Robert-Nicoud (2004) and Ottaviano and Robert-Nicoud (2004) this last issue is also stressed.

In this paper we will address some of the above issues. More in particular, based on a seminal NEG model (Puga, 1999) that encapsulates the core NEG models, we estimate the equilibrium wage equation. This gives estimates for two key structural model parameters for our sample of the NUTS II EU regions, and it enables us to derive empirically based estimates for the so-called *free-ness of trade parameter*. In doing so we follow the suggestion by Head and Mayer (2004, p. 2663), who state that for future NEG empirics to progress "it is critical to identify the free-ness of trade". In our view the estimation of the wage equation and the implications for the free-ness of trade parameter for the sample of EU regions is already very useful. So far, similar estimations have been carried out for single European countries but not for the EU at large. One of the 5 key predictions of NEG (Head and Mayer, 2004) is that agglomeration raises factor prices and this is precisely what the estimation of the wage equation sets out to establish. Our first main finding is that such a spatial wage structure exists for the EU regions.

In our view the estimation of the wage equation, although important in its own right, is to some extent only a means to an end. It is for this reason that in the present paper we are less concerned with alternative explanations for a spatial wage structure, such as the existence of local human capital or (pure) technological externalities with or without spatial spillovers between regions (Combes and Overman, 2004; Ciccone and Hall, 1996 or Ciccone, 2002 – see also the contribution by Head and Mayer, 2006 to this special issue and Section 2). Our conclusion is that the estimation of a NEG wage equation gives a satisfactory explanation of spatial wage patterns, but the literature shows that the same can be said for alternative theories on spatial interactions. In fact, it is quite hard to discriminate between NEG and these alternative theories. In this paper we are also not concerned to test the NEG wage equation against simple "theory-less" alternatives like a market potential function or a related concept a gravity equation (see Brakman et al., 2004). *Our main interest is thus not to confront the*