Resisting economic integration when industry location is uncertain

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A R T I C L E   I N F O

A B S T R A C T

This paper analyses the political determination of transportation costs in a new economic geography model. In a benchmark case with certainty about where agglomeration takes place, a majority of voters favour economic integration and the resulting equilibrium is an industrialised core and a de-industrialised periphery. Allowing for uncertainty, a high level of trade costs may win the election and maintain the initial distribution of industry. The reason is that a coalition of risk-averse immobile factors of production votes for the status quo due to uncertainty about which region will attract industry if economic integration is pursued. Finally, the standard view that agglomeration is unambiguously beneficial to residents in the industrial centre is challenged by introducing costs of undertaking economic integration.

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1. Introduction and previous studies

Negotiations on trade policy have always been at the top of the political agenda of many countries. This has been manifested by the birth of numerous free trade areas, customs unions, and international organisations governing and monitoring common rules of world trade. Furthermore, many countries devote large amounts of money to improve their domestic infrastructure to make it easier and cheaper to transport goods, promote trade and increase the mobility of people. For instance, in 2001, the European Commission published a White Paper stating that an inadequate common transportation system and inconsistent technical regulations, especially regarding the railway system, were still major obstacles to European economic integration and the implementation of the common transport policy established in the Rome treaty.[1] The White Paper contains some 60 specific measures, under 12 policy packages[2] to be taken at Community level, addressing these issues. Some of the proposed measures are investments aimed at improving infrastructure, like implementing the Trans-European Transport Network (TEN-T) and completing the remaining special projects selected by

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[1] See COM (2001) 370. For a discussion of European regional policies and their effects on production structures and income inequalities among member states, see Puga (2002).

[2] The 12 policy packages are: (1) Improving quality in the road transport sector; (2) Revitalising the railways; (3) Controlling growth in air transport; (4) Promoting transport by sea and inland waterway; (5) Turning intermodality into reality; (6) Building the trans-European transport network; (7) Improving road safety; (8) Effective charging for transport; (9) Recognising the rights and obligations of users; (10) Developing high-quality urban transport; (11) Putting research and technology at the service of clean, efficient transport; and (12) Managing the effects of globalisation.

the Essen European Council in 1994.[3] Others deal with the harmonisation of national safety and technical standards, while some are concerned with enforcing existing Community competition rules ensuring that regulatory and technical barriers to entry in the transport sector are eliminated.

Four years later, an assessment of the progression towards the White Paper's goals was published (De Ceuster et al., 2005).[4] While the overall level of progress of legislative activities at the EU level is considered to have advanced well (legislation covering about 50% of the measures has been adopted by the European Parliament and the Council, while another 15% are pending approval), the measures considered the most effective (like pricing measures and effective transport charging) have not yet been implemented. Furthermore, the report states that the failure to implement infrastructure charging has meant that a potential key source of finance for the TEN-T has not become available.[5] The assessment also notes that (De Ceuster et al., 2005, p. 15): "There is a need to reassure industry that it will not be made less competitive by the move and to buy off opposition from peripheral countries." and that focus should be on creating incentives "to overcome local political or financial barriers" to implementation (De Ceuster et al., 2005).[6]

The effects of trade and transportation policies on industrial structure have been analysed in the *new economic geography* (henceforth *NEG*),[7] in which economic integration triggers agglomeration processes that change the geographical distribution of firms. Indeed, the level of trade costs is one of the key parameters determining the location of industrial production. The trade costs are thought of as capturing all potential impediments to trade including tariffs, transportation costs (gasoline bills, insurance costs, road tolls, and delays due to congestion), differing national legislation and technical standards, language differences and red tape at borders. All of these are lumped together into a single measure of trade barriers, which is determined outside the models. An unsatisfactory feature, perhaps, given all the political effort and non-negligible sums of money that are invested in shaping the trade and transport policies of many countries.

The aim of this paper is to endogenously determine the level of trade costs within a *NEG* framework, using a simple political economy approach. In standard *NEG* models industry relocates as economic integration is undertaken, affecting various factors of production differently. The winners are firms and consumers in the region that attracts industry, whereas the losers are the inhabitants in the deindustrialised region. We empower these different groups politically and determine how far economic integration is pursued. This means that government in some form has to be introduced. This has been done by others in different *NEG* settings in order to analyse tax competition (Andersson and Forslid, 2003; Baldwin and Krugman, 2004; Kind et al., 2000; Ludema and Wooton, 2000), and regional and industrial policy (Dupont and Martin, 2006; Forslid and Midelfart, 2005; Martin, 1999; Martin and Rogers, 1995; Robert-Nicoud and Sbergami, 2004; Ulltveit-Moe, 2007). Baldwin et al. (2003) analyse, apart from the policies mentioned above, unilateral trade policy and preferential trade agreements, introducing a gallery of analytically solvable *NEG* models. They also categorise various welfare effects, analyse whether agglomeration is desirable or not, and investigate market outcomes from efficiency and equity perspectives.

In Behrens and Gaigne (2006) and Behrens et al. (2006), the level of transportation costs is (partly) endogenous in a *NEG* setting. The common denominator is that a part of transportation costs is made dependent on the total volume of trade between trading partners. Specifically, density diseconomies are introduced. As firms agglomerate in a location the volume of trade decreases, increasing unit shipping costs. This renders moving less attractive for remaining firms and agglomeration becomes self-defeating and gradual in nature. An equilibrium level of trade costs is hence determined by the spatial distribution of firms.

Our study takes a different route, introducing a majority voting game in the *footloose entrepreneur* model developed by Forslid and Ottaviano (2003). Industry is geographically dispersed between two regions forming a unified political jurisdiction. Pursuing economic integration is initially costless and voter groups with competing interests struggle to get as much industry as possible located in their own region. Two political candidates announce their positions on the level of transportation costs. The policy proposal gaining a majority of votes will then be implemented and, depending on the winning level of transport costs, industry will either relocate or stay put. Due to uncertainty about which region will attract industrial activity (an inherent feature of all *NEG* models with symmetric locations), a coalition of risk-averse agents may resist economic integration.

The basic idea is the same as in Fernandez and Rodrik (1991), where uncertainty about the distribution of the gains and losses of trade reform gives rise to a bias against the reforms. In our paper, immobile factors of production do not know

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[3] A revision of the TEN-T guidelines in 2004 added new projects to the original 14. The TEN-T now includes 30 priority axes and projects, of which only three have been completed: the railway axis Cork-Dublin-Belfast-Stranraer, the Malpensa Airport and the Öresund fixed link. See the European Commission (2008) for an overview of the projects and their implementation progress.

[4] This is the main study of four that forms the basis for the midterm review that appeared in 2006. A new study, evaluating the progress in reaching the objectives laid down in the 2001 transport White Paper and in its 2006 mid-term review, is under way in 2009. At the time of writing, it has not been published.

[5] In 2008, the Member States estimated that the completion of the 30 priority projects by 2020 would require more than EUR 250 billion. Including projects not on the priority list, implementing the trans-European transport networks is expected to require nearly EUR 500 billion (see the European Commission, 2008).

[6] Annex XX of De Ceuster et al. (2005) is devoted to identifying how various socio-economic groups are affected by the policies, and analyses conflicts among them.

[7] Pioneered by Krugman (1991), Krugman and Venables (1995) and Venables (1996). Fujita et al. (1999) provide a synthesis of the early contributions in the field. A second generation of models can be found in Baldwin et al. (2003).