Chapter 18

Transport Costs in a Shrinking World: The Spatial Approach of Geographers

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ABSTRACT

Logistics is about reducing costs in freight transport and removing virtual (rather than physical) obstacles in the event. Reports dwell on the quest for efficiency and show ways to remove bottlenecks and costs. The reduction of these costs was instrumental to an ever increasing exchange notably of finished goods between the countries of the World. The cost elements of transportation depend on the nature of the goods to be transported as well as the topography, the distance to overcome and the modal choice. But day-to-day reality seems to paint a totally different picture to the economic analyst. Does it still make sense to apply or even study the theories of the classical and neo-classical transportation geography which allocate the spheres of production and of consumption according to costs in space. This paper dwells on two diverging opinions. The combination of two sets of models, one coming out of the classic methodologies and one from modern marketing concepts, leads to an explanatory approach which reconciles both model builders and empirical analysts.

1. INTRODUCTION: THE CONTRADICTIONS BETWEEN THEORIES AND REALITY

Logistics is about reducing costs in freight transport and removing virtual (rather than physical) obstacles in the event. The reports edited by Arvis et al. (most recently 2014) on behalf of the World Bank especially dwell on the quest for efficiency and show ways to remove bottlenecks and inherent costs. At several occasions, for instance summarized in the World Development Reports 1995 and 2009, World Bank studies have explained the facts of decreasing transportation costs and the technological, political and economic reasons behind.

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The reduction of these costs was instrumental to an ever increasing exchange notably of finished goods between the countries of the World. The amount of exports multiplied by 3.7 from 1990 to reach a value of 1,145 billion $ in 2012. But what are the elements and driving forces behind such a development and what is the role of transportation costs in it?

Transportation as such needs investments in infrastructure and rolling stock, from where fixed costs do arise, and it generates variable costs from maintenance, fuel and manpower. These cost elements depend on the nature of the goods to be transported as well as the topography, the distance to overcome and the modal choice. But day-to-day reality seems to paint a totally different picture to the economic analyst. He wonders whether it still makes any sense to apply or even study the theories of the classical and neo-classical transportation geography which allocate the spheres of production and of consumption according to costs in space. The question has been posed notably by Krugman (for instance in 1991), without any ready answer. It remains wide open, as empirical findings contradict the “iron rules” of classical economic modelling. The following paper tries to reconcile two diverging opinions with quotations notably taken from historic and current European publications.

It starts with a presentation of data on shrinking transportation costs (the “time-space collapse”) and expanding World trade. Graphs showing the interdependence between costs of production + transport, resulting in delimitations of markets, are put in a space and time context, as shown by figures 4 & 5.

Such presentations may be irritating: They seem to be correct in their model equilibrium, but obviously do not depict today’s reality. In a volatile world of fragmented markets with an unknown number of producers, a continuous change in behavior of an infinite number of (potential) consumers in space obviously becomes too complex to be explained by models. Do even scientists then have to restrain themselves to “best practice” and trial-and-error approaches?

The combination of two sets of models, one coming out of the classic methodologies and one from modern marketing concepts, may lead to an explanatory approach which reconciles both modelists and empirical analysts. This approach can start with the model of a given industrial production process where production costs per unit decrease with growing use of capacity. The marginal cost concept, where the “last unit” is always the cheapest, is an everyday reality. But how can industrialists find their markets in a world full of competitors where transportation costs nevertheless play a – relative – role?

The concept of segmented markets as presented by micro-economists (see Wöhe & Döring 2014) helps to continue with the analysis. Marketing strategists know that the sectorial and spatial markets for a given product are not homogeneous but consist of a – possibly unlimited – number of segments. In each segment the product can fetch a certain price in dependence of the position of competitors, the image/market penetration of the product (or brand), and the purchasing power and/or the behavior of the consumers respectively.

Figure 8 includes the transportation costs but these no longer play a role in the model. Although they still present variables depending on distances, their perception and notably their importance is greatly reduced. They are “hidden” in the cost calculation for each of the market segments, but they are not decisive for the selection of spaces of distribution and, therefore, the spatial definition of markets. On the contrary, distant markets can be supplied at lower marginal costs and these will still guarantee the necessary profits for the producer. Transportation costs have disappeared from the surface and are wiped out from the memory of consumers and outside analysts. However, they are well taken into account by market analysts looking for outlets of their products.