

chapter, there is a wide array of very good introductory as well as advanced textbooks and surveys available for each of the (sub-)fields concerned.<sup>1</sup>

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## 2.2 Geography in regional and urban economics

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According to Peter Nijkamp and Edwin Mills (1986), the editors of the *Handbook of Regional and Urban Economics*, regional economics analyzes the “spatial dispersion and coherence of economic activity.” When this is compared to the definition of economic geography used in the textbook of Peter Dicken and Peter Lloyd (1990) as the study of “the spatial organization of economic systems,” one would be inclined to think that regional economics and economic geography are two different labels for the same field of research. This is not the case, however. Or, more accurately, it is no longer the case. Although both fields have their roots in the German-based tradition of Johann von Thünen, Walter Christaller, Alfred Weber, and August Lösch (see below) and still basically address the same research question, regional economics and economic geography now differ quite considerably.

Regional economics (also known as regional science) is based on neo-classical economic theory and is, in effect, “the formalized successor to the German ‘location economics’ tradition” (Martin, 1999: 61). Economic geography, on the other hand, is more eclectic and empirically oriented. It gets its inspiration from heterodox economic theories and, increasingly, from outside economics, areas such as sociology, political science, and regulation theory (see Storper, 1997, Scott, 2000, or Peck, 2000). We return to this division in chapter 12. Despite their differences, our main observations in subsection 2.2.2 apply to a large extent to both fields. We start, however, in subsection 2.2.1 with an overview of a younger field of study, namely urban economics, which studies the spatial structure of urban areas. Like regional economics, urban economics is based heavily on the tools of neoclassical analysis, such that the division between regional and urban economics is not always clear. Our objective is simply to show that the concepts and ideas used in geographical economics have been studied

<sup>1</sup> Some suggestions at the introductory as well as the advanced level are as follows: for urban and regional economics, McCann (2002) and Fujita and Thisse (2002); for economic geography, McCann (2002) and Armstrong and Taylor (2000); for international trade, van Marrewijk (2007) and Feenstra (2004); and, for growth theory, Helpman (2004) and Barro and Sala-i-Martin (2004). The major books on geographical economics to date are Fujita, Krugman, and Venables (1999), Fujita and Thisse (2002), Baldwin *et al.* (2003), and Combes, Mayer, and Thisse (2008).

before. In addition, we propose that geographical economics has something to add to these analyses. The “proof” of this suggestion starts in chapter 3.

### **2.2.1 Urban economics**

The uneven distribution of economic activity within every country is the starting point for urban economics. The modern analysis of the agglomeration of firms and people in cities or metropolitan areas relies strongly on “the economics of agglomeration, a term which refers to the decline in average costs as more production occurs within a specified geographical area” (Anas, Arnott, and Small, 1998: 1427). In other words, it relies on increasing returns to scale.<sup>2</sup> Before we go into the relevance of scale economies for cities and other forms of agglomeration, we first discuss a model in which there are no increasing returns to scale whatsoever. This model, the *monocentric city* model, originates with von Thünen (1826) and remains a benchmark model for urban (and regional) economics to this day. A brief discussion is justified if only to be able to note the differences with the geographical economics approach and to make clear that, in the end the analysis of cities will remain rather limited so long as there are no increasing returns to scale.

#### **The monocentric city model**

The monocentric city model assumes the existence of a featureless plane, perfectly flat and homogeneous in all respects. In the midst of this plane there is a single city. Outside the city farmers grow crops, which they must sell in the city. There are positive transportation costs associated with getting the farming products to the city, which differ for the various crops, as do the prices for these crops. Von Thünen analyzes how the farmers locate themselves across the plane. Each farmer wants to be as close to the city as possible to minimize his or her transport costs. This incentive to be close to the city results in higher land rents near the city than at the edge of the plane. Each farmer thus faces a trade-off between land rents and transport costs.

Von Thünen showed that competition for locations ensures that the resulting equilibrium allocation of land among the farmers will be efficient. For every type of crop there is a bid–rent curve that indicates, depending on

<sup>2</sup> This formulation of increasing returns to scale does not say how the decline in a firm’s average costs comes about. See box 2.1 for a discussion of external and internal economies of scale.