

# Preface

The processes that accompany the shift from industrial economics to a knowledge-based economy are currently the object of interest of both scientists and economic politicians, as well as entrepreneurs. In many countries, the traditional sources of socioeconomic development are waning. These sources used to be as follows: low labor costs, availability of inexpensive raw materials, or favorable geographic location. These economies are searching for new sources of competitive advantage that will allow for maintaining growth, among other things by boosting participation in international trade. Theoretical studies show that competitive factors alter their impact on the economy of a given country in line with the changing level of economic development and the developments in institutional environmental conditions in which business entities operate (cf., e.g., Porter 1990; Bieńkowski et al. 2010; Misala 2011). The theory also confirms that there has been a change in the significance of many competitiveness factors resulting from technological progress, globalization, and economic integration. A number of processes occurring in the global economy and particular countries increased the importance of nontraditional competitiveness factors that once were of lesser importance, i.e., human capital, innovativeness level, capability to create and employ newest technologies, level of infrastructure development and quality, and industry clusters. Moreover, the changing structure of global demand enlarges the significance of higher-quality and cutting-edge technology in international trade. Only those countries that are capable of rapidly accumulating and using knowledge resources can meet this demand. This, in turn, strengthens the role of nontraditional competitive advantages connected with knowledge, innovation, quality of production and management processes, and institutions.

This monograph focuses on the evaluation of the significance of two factors that are currently gaining importance in the international competitiveness of economies. These factors are: human capital and innovation. In this book, the international competitiveness of economies is considered in the narrow sense and understood as maintaining long-term competitive advantages in international trade. In this work, these advantages are analyzed by means of export competitiveness indexes (trade structure, revealed relative advantage, etc.). The process of developing

competitiveness on foreign markets has been evaluated in three cross sections by means of quality-based industry taxonomies that refer to such criteria as:

- Technological level of processing industries—this taxonomy was developed for the Organisation for Economic Co-operation and Development (OECD) (Hatzichronoglou 1997) to enable the evaluation of technological innovativeness;
- Utilization level of input factors—this classification is used to perform European Union (EU) competitiveness analyses (Peneder 1999) and allows for portraying not only technological innovation but also organizational and marketing innovations;
- Skills of the labor force that constitutes the basis of the given industry—this classification allows for determining the significance of human capital in foreign trade competitiveness (Peneder 1999).<sup>1</sup>

In the following chapters of this monograph, we have shown how human capital is accumulated and how changes in innovativeness influence the development of competitive advantages in international trade in terms of both theory and practice. The following two hypotheses have been subjected to verification:

- For highly developed countries to maintain a competitive position and the share in international trade, it is necessary to ensure human capital development and a high level of technological and organizational innovativeness. Accumulation and absorption of knowledge and the innovative use of technology are the main factors influencing the development of new competitive advantages in trade in relation to countries and regions with low unit labor costs.
- Relatively highest advantages in international goods and services trading were developed by those states that succeeded in employing human capital accumulation and technological and organizational innovations to create competitive advantages.

The national innovation system (NIS) concept was employed to analyze the interrelations between innovation and human capital. Thanks to adopting such a common framework that encompasses innovativeness-related issues and the characteristic features of human capital, it was possible to determine whether and to what extent the operation of the NIS determines the competitive advantages of particular countries in the domain of trading.

This book is divided into two parts. The first part (Chaps. 1–4) focuses on theoretical issues and the methodology of the study on international competitiveness, human capital, and innovativeness and presents the interrelations between these phenomena.

Chapter 1 presents controversial issues connected with the concept of competitiveness and the means of its measurement by referring to the achievements of the appropriate orthodox and heterodox theory of normative nature. Special attention was dedicated to the methods of evaluating comparative advantages and the poli-

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<sup>1</sup> These classifications have been discussed in greater detail in the Annex.

cy of influencing such advantages (so-called competitive advantages) in foreign trade of particular countries and their groups in modern global economy. Chapter 2 focuses on the theoretical discussion of human capital and innovativeness and the methods of measuring these phenomena.

As a result, common analysis frameworks for both issues were established for particular countries—the concept of the NIS.

Its more detailed characteristics and connection with competitiveness were described in Chap. 3 of the monograph. The interrelations between the NIS and competitiveness of economies are analyzed by means of Porter's concept of competitive advantages of countries, expanded by aspects of international dependencies indicated on the basis of the theory of, among others, Dunning. What is new about the discussion presented in this chapter is that the approach to innovativeness adopted herein is systemic and attempts to describe the most important features of the two-way link between the innovation system and competitiveness in foreign trade. On this basis, three dimensions of interrelations between innovation and competitiveness systems are recognized: technological, institutional, and international. The chapter concludes with a taxonomy of NISs in the global economy that is based on the criteria related to innovativeness and development level of human capital in particular countries. Six main types of NISs were discerned. Taking into account their characteristic features, in the next—fourth chapter—we verify the hypothesis concerning the diverse influence of competitiveness' determinants in particular groups of countries (including especially human capital and innovation) on competitive advantages in international trade.

The second part of the monograph (Chaps. 5–8) is of empirical nature. This section contains case studies of selected countries that represent models of various NISs. The objective of this part of the monograph is to illustrate the theoretical assumption that, in a nutshell, accumulation and absorption of knowledge and innovative applied technologies can be a factor that enables effective competition between states and regions with low unit labor costs. In this empirical part of the monograph, 12 countries representing various types of NISs were analyzed. Two types of NIS were selected from the group of developed innovation systems: dynamic and stably functioning. The dynamic NIS and the manner in which its functioning influences competitive advantages in international trading are illustrated by the case studies of three countries: Finland, Ireland, and Switzerland, discussed in Chap. 5. International competitiveness and changes in this area in states with stably functioning NISs were evaluated in Chap. 6, where the experiences of Germany, Austria, Spain, and the USA were presented. Another group of countries was discerned, namely the so-called “catching-up” innovation system states. This type is represented by Poland and Hungary, whose competitive advantages in trading were analyzed in terms of human resources development and innovativeness in Chap. 7. The most varied group of states has been discussed in Chap. 8. What these countries have in common is that they are characterized by an unbalanced NIS. In the case studies drafted for these three states, i.e., Russia, China, and Mexico, the authors attempt to detect the connection between human capital, innovativeness, and competitiveness

in foreign trade in these states that until now compete mainly by means of low labor costs.

Both parts of the monograph—the theoretical and the empirical—are summed up by final conclusions and recommendations concerning the economic policy, especially including economic policy tools that support the competitive position of economies in the medium- and long-term. These conclusions refer to countries with varied types of innovation systems, but they are of special and key importance for countries such as Poland. In Poland (similarly, as in other developed countries), possibilities of competing on the basis of traditional factors, such as low labor costs are already waning. Therefore, the recommendations presented in the summary concerning economic policy tools that stimulate human capital accumulation and innovativeness might prove useful when implementing a growth strategy enabling sustainable improvement of international competitiveness in the long term.

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How Are They Connected and Why Do They Matter?

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