Labor and Health Economics in the Mediterranean Region: Migration and Mobility of Medical Doctors

Ahmed Driouchi
Al Akhawayn University, Morocco
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#### Section 1

**Skilled Labor Migration and Human Resources in Health**

*This first section of this book gives the background to medical human resources, migration of skilled labor, including that of students, and an introduction to the models that have been devoted to skilled labor mobility. This section is composed of four chapters.*

**Chapter 1**

Introduction to Labor and Health Economics: Mobility of Medical Doctors in the Mediterranean Region

*Ahmed Driouchi, Al Akhawayn University, Morocco*

This chapter introduces the main components of the book and focuses on the shortage in medical doctors, its causes, and its consequences. The implications on migration of medical doctors is also introduced. The role of the new economics of migration is identified as a promising research angle. A series of issues need to be analyzed in order to better understand the global health system and feed economic and social policies. These elements are discussed in relation to the outcomes of the new economics of migration of medical doctors in the context of the Middle East and North Africa (MENA), Eastern and Central Europe (ECE), and the European Union (EU).

**Chapter 2**

Skilled Human Resources in the Health Sectors and Impacts of New Health Technologies on Health Workforce in Developing Economies

*Ahmed Driouchi, Al Akhawayn University, Morocco*

This chapter focuses on the importance of human health resources in relation to current and future trends in health. It is based on a syntheses of reports, publications, and economic development processes related to the increasing needs for skilled human resources in health systems that are under both high demand and also under the requirements of new health technologies. A special emphasis is placed on developing countries where a series of constraints could lead to limits in providing access to health care and a shortage of skilled labor. The human resources related risks at both levels of developed and developing economies are also discussed even though emergent and developed countries have generated new instruments to limit the negative effects of these constraints. Finally, if the expansion of access to new health technologies could be achieved within the world global health system framework, requirements of increasingly needed human resources and skills are shown.
Chapter 3
Economic Models of Migration of Skilled Labor and Preliminary Empirical Evidence

Nada Zouag, Al Akhawayn University, Morocco
Ahmed Driouchi, Al Akhawayn University, Morocco
Cristina Boboc, University of Bucharest, Romania

This chapter introduces the major trends that have affected the perception of the migrations of skilled labor. Different models are introduced to capture the impacts of the decisions of skilled emigrants. The last and the more up to date models are the ones related to the new economics of skilled labor migration and its likely positive spillovers into education and research. Attempts to compare the best known models are also pursued in this chapter with preliminary empirical assessments based on some available data. The results attained confirm the promising role of these models of the new economics of skilled labor migration.

Chapter 4
Potential Skilled Labor Migration, Internationalization of Education with Focus on Medical Education: The Case of Arab Countries

Amale Achehboune, Al Akhawayn University, Morocco
Ahmed Driouchi, Al Akhawayn University, Morocco

This chapter is a contribution to the new economics of skilled labor emigration that focuses on the mobility of students with application to the Arab countries with a special focus on medical education in these economies. With limited data on the emigration of students, descriptive statistics besides regression analysis are pursued to support the empirical investigations. The findings show statistically significant trends in emigration of students from Arab countries. They also indicate that the relative expected benefits and the emigration rate have major effects on the net relative human capital who leave for international destinations. The effects of the relative expected benefits in the destination and sending countries besides the yield of education are found to likely affect the emigration patterns. The empirical results based on the available data mainly from UNESCO (1990-2010) and OECD (2005-2009) allow further use of the model to understand the current trends in the emigration of students. These trends confirm the magnitude of relative wages besides the level of education and the attitude toward risk as determinants of the international movements of students. The complexities taking place in the education systems in different countries with the internationalization and delocalization of universities and schools are likely to introduce more options for students but also new possibilities to understand the outcomes of migration decisions.

Section 2
Migration of Medical Doctors to EU from MENA and ECE

The second section is devoted to the characterization of the major trends and patterns related to the overall regions of MENA and ECE. It then focuses on the description of the mobility of medical doctors in the EU, ECE, and MENA, respectively, before the introduction of the theoretical model of the new economics of skilled labor mobility. This latter model is then applied to ECE and MENA economies. The section is composed of seven chapters.

Chapter 5
Patterns of Migration of Medical Doctors from MENA and ECE to EU Economies with Descriptive Analysis of Relatives Wages

Nada Zouag, Al Akhawayn University, Morocco
This chapter introduces the main features that characterize the health systems and mobility of medical doctors in both MENA and ECE countries taken together. The observed trends and patterns are confronted to the relative wages of medical doctors in each country. A descriptive analysis is conducted on relative wages of medical doctors as they prevail in MENA and ECE relative to EU besides the relative wages between MENA and ECE.

Chapter 6
Understanding the Migration of Medical Doctors in the Context of Europe

Antonio Rodríguez Andrés, Independent Scholar, Morocco

The objective of this chapter is to analyze the mobility of health professionals, in particular medical doctors within the context of the European Union (EU) to address some major policies and strategies to Immigration. This chapter provides the major characteristics of the health systems in relation to availability of medical doctors and to their Immigration. In this process, both the qualitative and quantitative components of the migration of medical doctors are addressed. Annual data and information are gathered from national reports and from several international organizations such as the Organization for the Economic Cooperation and Development (OECD) and World Health Organization (WHO). The results show that Immigration of medical doctors occurs within and outside the EU. Moreover, there is a great variation in the proportion of foreign doctors across European countries. In some European countries, the reliance of foreign medical doctors is high: Switzerland, Ireland, United Kingdom (UK), and Slovenia. The largest inflows of medical doctors are reported in UK, Germany, and Spain. Outflows of medical doctors have increased in Germany, UK, Italy, and Austria. However, the net balance between emigration and immigration matters. Germany loses more doctors every year than it gains through immigration.

Chapter 7
Migration of Medical Doctors, Health, Medical Education, and Employment in Eastern and Central Europe

Cristina Boboc, Bucharest Academy of Economic Studies, Romania
Emilia Titan, Bucharest Academy of Economic Studies, Romania

This chapter is mainly descriptive and deals with current issues including economic and legal matters besides the prevailing wages and other benefits for medical doctors by country. The focus is on ECE countries, members of EU: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. A key factor in providing medical care is the availability of qualified and motivated health care professionals. The emigration of physicians is an important constraint that limits the satisfaction of the local needs in health care in the origin countries, with poorer performing healthcare systems. The empirical evidence suggests that medical doctor emigration in the European Union happens because of poor distribution of physicians, low internal mobility, and inappropriate skill mix. In the case of migration from ECE countries to Western EU countries, the main reasons are differences in working conditions, remuneration level, and career opportunities. Substantial improvements in health and the conversion of the brain drain in brain gain in ECE countries should be obtained by some not very expensive measures: motivation of doctors, increase of competences, and convergence between needs and physician specialization.

Chapter 8
A Descriptive Overview of the Emigration of Medical Doctors from MENA to EU

Ahmad Baijou, Al Akhawayn University, Morocco

This chapter focuses on a descriptive analysis of physician’s migrants from MENA to the European Union (EU). It assesses the determinants of this migration with its effects on sending and receiving economies. The relationship of the migration of medical doctors to health, medical education, and employment in MENA and EU is also discussed. Both descriptive and analytical approaches are used. The attained results show that the main factors for migration are income, work, and living conditions.
Chapter 9
The Theoretical Model of the New Economics of Migration of Medical Doctors

Cristina Boboc, Bucharest Academy of Economic Studies, Romania
Nada Zouag, Al Akhawayn University, Morocco
Ahmed Driouchi, Al Akhawayn University, Morocco

The focus of this chapter is on the selection of the theoretical model to be used to capture the main features related to the migration decisions of medical doctors in the selected groups of countries (ECE, MENA, and EU). The selected model is consequently submitted to empirical tests, and this is shown in the following chapters of this section.

Chapter 10
Inputs from the New Economics of Migration of Medical Doctors in Eastern and Central Europe

Cristina Boboc, Bucharest Academy of Economic Studies, Romania
Emilia Titan, Bucharest Academy of Economic Studies, Romania

This is a contribution to the new economics of skilled labor emigration that focuses on the mobility of physicians inside European Union from ECE countries. Economic models under risk neutrality and aversion are used. The findings show that the education could change significantly the results on the emigration benefits. Comparisons of theoretical and observed relative human capital per country averages are conducted and ensured the statistical validity of the model used. The empirical results based on the available data on emigration by Docquier and Marfouk (2008) but also by Bhargava, Docquier, and Moullan (2010) allowed further use of the model to understand the current trends in the emigration of physicians and the border between brain gain and brain drain. The countries included in the study all exhibited brain gain between 1991-2004. Each country is encouraged to anticipate the likely effects of this emigration on the economy with the increase of health demand, the domestic wages, and the increase in education capacity for medical doctors.

Chapter 11
The New Economics of Skilled Labor Migration: The Case of Medical Doctors in MENA

Molk Kadiri, Al Akhawayn University, Morocco
Nada Zouag, Al Akhawayn University, Morocco

This is a contribution to the new economics of skilled labor emigration that focuses on the mobility of medical doctors from Middle East and North African countries. The theoretical model under risk neutrality and aversion as suggested in chapter 9 is applied. The findings show that the relative expected benefits and the emigration rate have major effects on the net relative human medical capital that remains in the source country. The effects of relative wages in the destination and sending countries besides the yield of education are likely to change the emigration patterns. Comparisons of theoretical and observed relative human capital per country averages are conducted and the statistical validity of the model is ensured. The empirical results based on the available data by Docquier and Marfouk (2006) and Bhargava, Docquier, and Moullan (2010) allow further use of the model to understand the current trends in the emigration of medical doctors. These trends confirm the magnitude of relative wages besides the level of education and the attitude towards risk as determinants of the emigration of skilled labor. The countries included in the study all exhibited brain gain from 1991-2004, but two distinct groups of countries are identified. Each country is encouraged to anticipate the likely effects of this emigration on the economy with the increase of health demand, domestic wages, and the increase in education capacity for medical doctors.
Section 3
Global Health Systems and Cooperation

This is the last section of the book. It discusses the benefits from circular migration of medical doctors and develops win-win policies related to further cooperation between North and South. The case of Morocco as an example from the MENA countries is then discussed in relation to the supply and needs of medical doctors. This prepares for the analysis of the perceptions of medical doctors from Morocco where the gains from further cooperation are submitted for discussion by the participants to the survey. These views are then consolidated with the introduction of the existing and potential mechanisms to strengthen cooperation between sending and receiving countries. This section is composed of four chapters.

Chapter 12
Beyond Brain Drain: A Case Study of the Benefits of Cooperation on Medical Immigration ........... 294
Ahlam Fakhar, Al Akhawayn University, Morocco

The past decades have witnessed an increase in the pace and a consolidation of immigration of medical doctors and the globalization of the health system. If properly managed, globalization of the health workforce could lead to perceptible gains in health status for all parties involved. In a world economy shaped by strong institutions, globalization could benefit those countries with a strong and human and physical capital. This chapter reviews the importance of immigration and aims at presenting different views on immigration of medical doctors. While the traditional view has been dominated by the rhetoric on “brain-drain,” a new and more promising thread of research has centered on the relatively new concept of “brain-circulation.” Mobility for medical workers and health workers, in general, can be a significant contributor to the formation of scientific and technical human capital, which has been an important driver in economic expansion and social development in many regions of the world. To illustrate the point, the authors use a cooperative framework to elucidate the relationship between immigration of medical doctors and economic development in the long-run using the potential agreement between North Africa and the European Union as an example. The finding could have implications for the capacity of developing countries to turn around and use “circular immigration” as a means to integrate into the emerging knowledge economy.

Chapter 13
Trends and Prospects of the Moroccan Health System: 2010-2030 ........................................... 314
Nada Zouag, Al Akhawayn University, Morocco
Ahmed Driouchi, Al Akhawayn University, Morocco

This chapter looks at the current situation of health deficits and shortages in Morocco with a focus on the role of medical education. The trends and prospects in health care, medical staffing, and medical education are analyzed. The attained results from both trend description and simulations of patterns show major shortages relative to the needs. The existence of these trends appeals for further cooperation in the areas of health care through emphasis on medical education and research. These outcomes appear to be promising for the pursuit of satisfying the needs of a growing population and demand for healthcare. Further cooperation can lead to the acceleration of a mutual win-win collaborative process between Northern and Southern economies with no room for brain drain in the case of medical doctors. This chapter introduces the health system of Morocco to the reader and helps in better perceiving the survey conducted with medical doctors in Morocco and that is analyzed in the following chapter.
Chapter 14
Perception by Moroccan Physicians of Factors Affecting their Migration Decisions .......................... 337
Youssef Chetioui, Al Akhawayn University, Morocco

The variety of factors affecting migration decisions of medical doctors are confronted with the opinions of medical doctors operating in Morocco. The major objective of this exercise is to see how individual and environmental factors are perceived by each medical doctor who has selected to stay or to return to the country of origin after his or her medical studies. The method used in this research is based on the analysis of the information and data from a survey of physicians. This survey is based on the inputs from 117 medical doctors operating in different cities of Morocco. The results reveal that those with lower age and higher difficulties in medical practice constitute most of the medical doctors to relocate overseas. The migration conditions are also found to have a significant negative effect on respondents' intention to migrate. The study reveals as well that labor wages, gender, the status of the hospital (private or public), and the situations prevailing in hospitals do not significantly affect the attitude of respondents about migration. These results confirm that the surveyed doctors have selected to not migrate but to operate in Morocco while those that migrate could have opposite assessments for the same factors. All the surveyed doctors have confirmed the importance of intensifying cooperation between hospitals and medical schools on both sides of the Mediterranean region. This cooperative framework creates new incentives for the promotion of exchanges of medical doctors, knowledge, and experiences between the South and the North. The intensification of this collaboration allows medical doctors to be more mobile, creating a new win-win process that is far from the brain-drain type of vision.

Chapter 15
Medical Knowledge, North-South Cooperation, and Mobility of Medical Doctors ............................. 376
Ahmed Driouchi, Al Akhawayn University, Morocco

This chapter introduces the overall context of the Millennium Development Goals (MDGs), the on-going cooperative frameworks and the triple helix approach with the support of Information and Communication Technologies (ICTs). These are devoted to accelerate the implementation of further collaboration between medical schools in both North and South of the Mediterranean area. Three important players are identified in each region. These include the medical school, the public authority, and the business related to healthcare. These players from North and South can engage in specific areas that are education, research, and development, before the identification of means and incentives to be further devoted to attract medical doctors. These collaborations follow the trends developed by international organizations, mainly the WHO. The most important conclusions attained in the previous chapters of the present book are also summarized in the present chapter.

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