Preface

There is no doubt that abundant extant literature exists in the fields of economics, game theory, and technology. However, the vastly under-researched field of cultural indoctrination appears to represent huge potential development for these three areas as each is related to human psychology – and culture is a reflection of that psychology. Defined as the process of inculcating attitudes, ideas, or methodology, indoctrination should not be confused with the term socialization, which is training a person for a particular social environment. Cultural indoctrination expands well beyond that scope. The purpose of this book is to make an initial connection between the expansive fields of economics and game theory with the cultural indoctrination we all experience from birth. We highly suggest empirical study and theoretical development be conducted on cultural indoctrination to further advance economics and game theory in an era of global hypercompetition, especially as it relates to emerging markets, which are a major focus of this book.

Economies in the early stages of development are usually disturbed by large changes in growth rates more than are the advanced economies, but the effects of contemporary globalism eventually spare no national economy regardless of size; therefore, it is imperative for national governments and business organizations everywhere to prepare as much as possible for the sudden changes following major events such as the financial meltdown of 2008 or the more recent Arab Spring. The fact that the business world of today is in a state of constant and rapid flux is of no surprise to educated or enlightened individuals. Sustainable success in this hectic environment is highly dependent on visionary business and government leaders who can effectively instill a sense of purpose in people to prevent complacency.

The inspiration for this book was born from our collective academic and practical experience in business and economics since 1985, during which time we realized the need for a work fusing game theory with economic behavior and technology. The specific event sparking the action to develop this book occurred in September 2012 when one of the editors crossed the Georgia-Turkey border for the fifth time, which kindled cursory reflection on why the two countries had such a large gap in their respective national development. The result led to serious query about how game theory affects developmental economics.

Standard economic theory states that accumulation of capital and technology are the two most important elements of economic development. However, we believe the reason why countries remain underdeveloped transcends these two fundamental elements by also viewing economic development as part of a behavioral problem. From a game theory perspective, the basis of this problem is due to the fact that underdeveloped nations often do not choose correct strategies, particularly in this era of global hypercompetition – a contemporary reality whose influence cannot be underestimated.

In their 1944 book published by Princeton University Press, *The Theory of Games and Economic Behavior*, mathematician John von Neumann and economist Oskar Morgenstern are concerned with optimal strategies, which individuals, companies, or governments can employ in the face of a challenge.
For example, an individual wishes to select the most appropriate strategy when making an economic decision, a firm attempts to make the right decision while struggling with its competitors, and a government seeks an optimal strategy while developing its policies from security to foreign trade. The return from the decisions made by all of these actors depends on strategy as well as other factors shaping human behavior including ethics, psychology, sociology, religion, and law, especially in a comparison between rich and poor countries.

From this point of view, what the reader will see in the following pages is a wide variety of issues addressed by leading academics and practitioners in 20 chapters ranging from the relevance of science in development and social capital to business ethics and portfolio management strategies for emerging economies. Naturally, there will also be specific discussion and examples on game theory and technology within the realm of economic behavior.

Chapter 1 discusses the relevance of science in (economic) development. Scientific knowledge and technical expertise promote the wealth of nations, and this chapter showcases the following: 1) scientific productivity of a country correlates more strongly with gross national income per capita than its technological sophistication; 2) science is important for economic growth among developed economies, whereas technical complexity is more important for the economic development of poorer countries; 3) scientific productivity of countries correlates more strongly with present and future wealth than indices reflecting its financial, social, economic, or technological sophistication; and 4) middle income countries with higher relative productivity in basic sciences such as physics and chemistry have the highest economic growth in the following five years compared to countries with a higher relative productivity in applied sciences.

Chapter 2 is an empirical exploratory study regarding the growth of Real Gross Domestic Product in Cuba during the period 1990 – 2010 using a neo-classical, supply-side approach. The chapter seeks to account for the contributions of capital and labor to output and then considers the effects of the terms of trade and of the inefficiencies introduced by price controls. The chapter subsequently attempts to adjust for the overstatement by official statistics of real GDP in the first decade of the 21st century by focusing on the public health and social assistance sectors of the economy, and ends by examining two sources of overstatement of effective employment in the data and their implications for labor market policy and output growth.

Chapter 3 seeks to identify useful game-theoretic insights concerning key issues of business ethics in emerging economies. The study considers four elements in this sequence: game theory, emerging economies, business ethics, and key issues. The chapter does not undertake formal modeling but rather emphasizes useful insights. The approach taken here is to inquire into certain specific decision scenarios available in the extant literature as instances of important classes of decision problems. These scenarios involve long-term sustainable business models, corporate values, and corporate reputation.

Chapter 4 considers some of the issues regarding the rational choice decision framework in neoclassical economics and how it can particularly be found wanting in the absence of due consideration for some of the underlying critical neurobiological factors which govern decision making. The authors develop a critical decision problem and explore the scenario where the solution predicted by formal economic theory may be in conflict with the decision that actually occurs.

Chapter 5 provides a case study regarding the development of a domestic wind turbine manufacturing industry in the still emerging market of Turkey. Climate change is now widely recognized as the major environmental problem facing the globe, due in large part to emissions of so-called “greenhouse gases,” which mainly result from the production of energy using fossil fuels. In addition to environmental prob-
lems, some countries with limited fossil fuel reserves also suffer from energy-dependency. This chapter explores the way in which a strong domestic wind turbine manufacturing industry can be nurtured in Turkey. For this purpose, the chapter focuses particularly on some key measures such as investment subsidies, tax exemptions, corporate financing schemes, and information dissemination.

Chapter 6 covers the connection between social capital and the culture of trust in economic development. The benefits accruing from social networks and structures have been shown to correlate with economic performance at both the macro- and micro-levels, and this chapter briefly reviews the broad extant literature on social capital before embarking in more detail how game theory can be used to analyze and model social capital. In a concluding section, the authors use the population game approach to study this issue, which includes a discussion of the complementarities between strong institutions and social capital.

Chapter 7 examines the evolution of business ethics to business law. Ethics in business ethics and law in business law are not as ambiguous, rhetorical, and esoteric as practitioners make it seem. The chapter evaluates the ethical decision-making process, from ethics to law, involves five basic steps: moral awareness, moral judgment, ethical behavior, ethical behavior theorizing, and (business) law.

Chapter 8 explores fuzzy reasoning systems as they relate to intelligent business decision-making in global organizations and emerging markets. Companies, organizations, governmental departments, and universities need to adopt globalization patterns for their generative survival in dynamic productive outputs. Such outputs are possible only after effective, rational, logical, and systematic treatment of all available input knowledge and information. This chapter presents the essential steps required to achieve decision making under uncertainty for effective management via a fuzzy logic inference system. The basis of fuzzy logic modeling is presented which may be used by different business management experts.

Chapter 9 provides a brief review of game theory applications in the emerging market of Turkey. The author provides the reader with an overview of game theory and its applications in Turkey and then explores the tractability of economic problems when formulating them as game theory models. The discussion starts with a general description of game theory models and follows with an investigation of game theory applications performed in Turkey.

Chapter 10 relates Interorganizational Relationships (IOR) with theoretical evolution and success attributes. The chapter discusses these concepts and proposes an integrated view of the evolution of interorganizational relationships in a network context, followed by a presentation of IOR’s governance typologies to emphasize the hierarchy-market dichotomy and the hybrid form as the combination of the two perspectives. The chapter concludes by exposing the attributes characterizing interorganizational relationships’ climate success to demonstrate the informal aspect of interorganizational context.

Chapter 11 is a continuation of the previous chapter by discussing interorganizational information systems and interorganizational relationships. As the external environment and alliance partnerships become more complex, managers should consider appropriate partners to enhance the efficiency and performance of their chain, as well as to gain potential competitive advantages. Additionally, due to increasing global competition, many organizations are aware of the benefits of using electronic solutions to support their Business-to-Business (B2B) environment. Thus, they opt to establish an electronic infrastructure to carry out physical chain transactions and cover potential interorganizational relations. The authors first focus on the concept of Information Technology (IT) and its theoretical approaches, followed by discussion on the theoretical relationship between IT and interorganizational contexts. The socio-technical approach is largely presented due to its relevance to research propositions.
Chapter 12 analyzes the relationship between game theory and business ethics and explains how game theory plays a role in business ethics for emerging economies. This chapter covers the following in detail: 1) the history of game theory; 2) types of/definition(s) of games; 3) business ethics; 4) business; and 5) ethics.

Chapter 13 presents a location-based affective computing system that can assist growing emerging markets by helping them reduce crime and increase public safety when used in conjunction with CCTV. Internet systems based on location-based services have increased in availability, and social platforms such as Twitter and Facebook now employ the information on user locations to provide context to their posts. People normally abused by corrupt state officials for crimes they did not commit will now have alibis, shops will be able to more effectively build trust and procure new customers through “social proof,” and other forms of corruption will be tackled such as benefit fraud and tax evasion. Trust that everyone is paying his or her fair share can develop.

Chapter 14 investigates the role of religion and national culture in the economic growth of emerging markets. The author presents data on predicted growth rates and the current majority religion for 24 emerging economies, suggesting these emerging economies with high growth rates include a variety of geo-political regions representing many different religions, national cultures, and even “no-religion” affiliation.

Chapter 15 reviews a game theoretic approach to corporate lending by banks in India. A series of corporate loan defaults facing the Indian banks in the post-crisis period of 2008 led to the downgrading of India’s global credit rating in 2012. Against this backdrop, this chapter delivers an insight to the reader into the games that occur between lending banks and corporate borrowers, in addition to the games between the banks themselves in lending competition. The chapter covers various strategies of actions in the structures of bilateral monopoly, duopoly, and oligopoly, the Nash equilibrium, prisoners’ dilemma, decision trees, and binomial analysis. In modeling, the default probability and the profits of the lender and the borrower, a number of corollaries, one lemma, and one theorem are deduced in this chapter.

Chapter 16 is a comparative study of the automotive industries in South Korea and Turkey. Latecomer sectors in late-industrializing economies follow different patterns in their development and growth processes, which largely determine the share acquired from the global value chain. The development and growth process of the sectors are generally argued to be the result of the interaction of macro level specific institutional context, and the author argues that meso-level sectoral systems also play a critical role in the development and growth process of latecomer sectors. By integrating three theoretical perspectives, the author explains the relative developmental failure of the Turkish automotive industry compared to other successful latecomer industries such as the South Korean automotive industry, and argues that a pace of industrial transformation can be accelerated by multilevel proactive state intervention.

Chapter 17 forwards the significance of innovation policies as they relate to countries caught in the so-called middle-income trap. Over the past 50 years, low-income countries have increased their national incomes by shifting their production from the agricultural sector in which the efficiency of labor and capital is low to the manufacturing sector of which efficiency is higher. However, underemployment in the rural regions has decreased in parallel to the attainment of the middle-income level by these countries, wages have increased, and the level of international competitiveness has decreased. The chapter discusses the policy alternatives required to be followed by developing countries and to expose the inadequacy of the neoclassic approach on which the industrialization strategy is based in the light of the experiences of the countries that have discarded the middle-income trap.
Chapter 18 discusses the biomass energy and sustainable development of Turkey. The study focuses on the level of the country’s biomass energy potential and the way in which to make efficient use of this potential. The chapter forwards two main questions: (1) To what extent can the quality of environment be improved via biomass energy? and (2) What changes occur in economic variables such as foreign trade, employment, and balance of payments when fossil fuel is substituted by biomass energy?

Chapter 19 explains the role of dumping in Guatemala. Central America is an interesting region for developing business, and its proximity to South and North America makes the isthmus a strategic region for growth. The Central American nation of Guatemala is seen as an emerging economy with the capacity for growth and expansion. The chapter and its analysis of price predation in the cement industry in Central America is based on the author’s doctoral dissertation developed in 2008.

Chapter 20 completes the book by discussing investment portfolio management strategies for emerging economies. The authors outline the processes to create effective portfolio management strategies via stock investing styles.

We believe these chapters will generate ideas for future research efforts as well as for the development of practical policies that will influence both global and national prosperity, especially in emerging nations. All suggestions to improve this work for future publication efforts would be welcomed.

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