

# Preface

In October 2010, PGlobal Ltd and Istanbul Commerce University hosted a workshop on *Designing Efficient Policies to Foster Technology Transfer and Development Capacity in Emerging Markets* in Istanbul, Turkey. The workshop brought together scholars, policymakers, and industry specialists from the fields of development, technology transfer, and procurement contracting. The contributions to this volume were edited papers from the workshop, which explore the feasibility of procurement policy to influence a country's industrialization, technology, and trade (ITT) trajectories.

Economies grow by increasing inputs (e.g., capital and labor) and productivity. Productivity or, in the parlance of growth accounting, *extensive growth* derives from improved technology, institutions, and other efficiency enhancements. Each country must grapple with competing philosophies and policy proposals to foster an environment that is conducive to technology acquisition and absorption.

Economists have long debated the role of government in economic activity and growth. Noting the existence of imperfect information, transaction costs, and increasing returns, some argue in favor of a planned economic development strategy that usually includes industrial policy. On the other end of the theoretical spectrum is free-market capitalism, which rejects any government intervention on the grounds that such actions are economically inefficient. Of course, most development strategy is far more nuanced, and one is hard pressed to find a country that is entirely centrally planned or *laissez-faire*.

Four theories of economic development have dominated the economic development literature since World War II. The linear stages model was most prominent during the 1950s and 1960s. Worldwide recession and stagflation in the 1970s spurred new and competing theories from the structuralist and dependency schools. The rise of neoclassical economics spawned renewed interest in free-market capitalism and private property rights in the 1980s. Government corruption, bureaucratic incompetence, and meager growth in many developing countries also contributed to the resurgence of *laissez-faire* economic policy. At the same time, neoclassical

research and policy studies culminated in the so-called Washington Consensus policy program in the 1990s.<sup>1</sup>

In recent years, however, a call for a more tempered, moderate view of development policy has emerged. Proponents of the New Consensus note that some of the most robust and equitable growth has occurred in countries—most notably in East Asia—that deviated significantly from the policy prescriptions of the Washington Consensus.<sup>2</sup> The more moderate view gaining advocates among development economists and policymakers retains the central tenets of private sector competition, fiscal and monetary prudence, and limited government.<sup>3</sup> However, this view diverges from the Washington Consensus by acknowledging a planning role for developing country governments to address market failures (and missing markets), establish institutions that support long-term growth, and implement policies that influence ITT. The moderate view, then, is the foundation upon which this volume stands.

## **Brief Overview of Industrial Policy and the Public Procurement Link**

In perfectly competitive market environments, most economists agree that there is little role for government intervention.<sup>4</sup> Developing countries, however, are rife with market imperfections, externalities, and poor infrastructural investment. Public goods, such as defense, roads, and utility lines, are frequently undersupplied. As a result, a case for targeted government intervention in developing countries is not inconsistent with the standard neoclassical economic model. Indeed, the theory of second best holds that when multiple markets in an economy fail to meet the stringent requirements for perfect competition it may be welfare increasing to employ a gradualist approach to international economic integration (see Lipsey and Lancaster (1956).

Industrial policy utilizes targeted government intervention to augment markets and promote the production of goods and services that are considered in that country's strategic interest. The argument that governments somehow have better information than private firms about the prospects of a firm or industry—and is thus worth targeting—is not persuasive to many economists. Furthermore, if a firm requires subsidies or protection to exploit the gains derived from learning-by-doing and scale economies, profit-seeking capital market participants should be able to provide the necessary financing. Similar arguments invoking perfect

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<sup>1</sup>For an overview of the Washington Consensus, see Williamson (1990).

<sup>2</sup>The World Bank (1993) report illustrates how the East Asian tiger countries employed a successful policy mix that balanced market competition and government support for targeted industries.

<sup>3</sup>Rodrik (2008) offers a critical assessment and juxtaposition of the policy prescriptions.

<sup>4</sup>Even the most ardent free-market supporters usually accept limited roles for government including the provision of public goods and national security, enforcement of contracts, and central banking.

information and efficient capital markets are frequently put forth to discredit industrial policy in the presence of coordination failures, spillovers, externalities, and the appropriation of firm research and development (R&D). Practical experience of numerous countries, however, has shown that such policies can foster growth and accelerate economic development.<sup>5</sup>

In countries with competitive markets, the theoretical case for procurement and industrial policy diminishes significantly. Grossman (1989) reviews the literature and refutes most of the arguments that support industrial policy.<sup>6</sup> Pack and Saggi (2006, p. 267) arrive at a similar conclusion, although they maintain that “market failures can, in principle, justify the use of industrial policy.” Instead, the authors argue for a shift of focus away from industrial policy, per se to “negotiation with multinational firms on issues ranging from environmental regulation and taxes to efforts ensuring local learning” (293).

The efficient market structures and institutions that obdurate the need for government involvement, however, do not typically exist in developing countries. In recent years, contributions to the literature from Chang (2008) and Reinert (2008) have highlighted the importance of industrial policy for all countries as they graduate through the stages of development. Nobel laureate Michael Spence (2011) argues that even the industrialized economies of today ought to follow the recent path of Germany, which has carefully supported select high value-added industries. And while the theoretical debate on the economic efficiency of industrial policy rages on, most governments around the world support—in practice—a limited role for government to foster critical industries.<sup>7</sup>

## Procurement Policy as a Form of Industrial Policy

The discussion of government policy as a means to achieve the ends of technology acquisition and industrialization is not, then, unique to this book. Rather, the focus here is on procurement policy as a lesser-known instrument of industrial policy. A voluminous literature on industrial policy exists, and the number and quality of procurement policy (domestic and international) studies have increased significantly during the last 20 years. However, analysis of procurement policy as a strategic instrument of industrial policy has received relatively less attention from scholars (see, e.g., Li (2011); Kattel and Veiko (2010); Eliasson (2010); Edler and Georghui (2007); Bolton (2006); Uryu (2006); Watermeyer (2000); and Geroski (1990)).

<sup>5</sup> Some East Asian country policies are, perhaps, the most prominent and recent example. However, at similar stages in their development countries such as England, the United States, and France made extensive use of industrial and trade policy.

<sup>6</sup> Grossman’s analysis draws heavily on Baldwin (1969).

<sup>7</sup> Special financing terms, tax exemptions, and other incentives can also be extended to select firms for the purpose of creating “national champions” (e.g., Siemens in Germany; Nokia in Finland).

Several chapters included in this volume make the case for well-conceived industrial targeting via public procurement policy. As one of the largest buyers in many product markets, governments have considerable leverage to influence the terms of a transaction. Negotiating for price discounts is the most common and recognizable way governments can benefit. However, a menu of other policies—that may or may not be preferable to price discounts—is available to procurement officials as well. These policies include, but are not limited to<sup>8</sup>:

- Preferential vendor and/or industry purchasing arrangements
- Domestic preference
- Local content
- Countertrade and offsets

Preferential procurement terms granted to select domestic firm(s) enable a government to promote a particular industry in what amounts to a production subsidy. Such action will invariably alter the allocation of resources, prices, and welfare in the economy. Therefore, this policy should be adopted only after a careful analysis of costs and benefits. Government support for the so-called “green technology” falls in this category; the seemingly banal SWaM (small, women and minorities) preference given in American states does as well. In the case of the latter, for example, it is widely known that a product procured from a SWaM vendor may carry a higher price tag compared to a competitor’s offering of equal quality. In most product markets, governments enjoy numerous purchasing options in the global economy. Open competition—both domestic and international—is generally preferable in procurement because the price and quality competition leads to increased welfare in the purchasing government’s economy. Moreover, in the absence of explicit or implicit protection from the home government, domestic firms are compelled to become more efficient and innovative.

However, it may be in a country’s interest to extend implicit (subsidy) or explicit (“buy domestic”) terms to domestic firms in select instances. In 1933, the United States, for example, passed the Buy America Act, which requires the federal government to “buy domestic articles, materials, and supplies when they are acquired for public use unless a specific exemption applies” (Luckey 2009, p. 5). Numerous exceptions to the policy exist, but the substantive aspects affecting strategic industries and the general intent remain.<sup>9</sup> The World Trade Organization’s General Procurement Agreement (GPA) seeks to eliminate or at least limit such protectionist policies among members, but exemptions exist for products deemed of

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<sup>8</sup> Another example is “planned and pre-announced” public procurement, which requires sufficient government credibility to induce capital expenditures and R&D investments in the private sector. This policy also requires an effective and well-planned government. In many developing countries neither of these conditions is met. Therefore, planned procurement is probably better suited for developed economies with efficient institutions.

<sup>9</sup> Exceptions to the Buy America Act fall under five categories: (transaction) inconsistency with the public interest, unreasonable cost, products that will be used outside the country, products produced in the United States of insufficient supply or quality, and procurements under \$2,500.

national security interest, public health, and the environment. Developing country members are also exempt, unless they voluntarily sign the plurilateral agreement.<sup>10</sup>

Local content rules require a percentage of the procurement workload to be fulfilled by firms in the domestic economy. This form of intervention may help a developing economy in two ways. First, local content rules generate additional work orders for domestic businesses. When a government procures a product from a foreign supplier, the domestic multiplier effects are negligible. When at least part of the procurement calls for local content production, the domestic economy benefits from multiplier effects via increased economic activity, employment, and income. Second, local content rules help domestic businesses acquire know-how, transfer technology, and lower unit costs through learning curve effects.

Countertrade agreements represent another class of international procurement policy instruments. Countertrade contracts can be designed to alter the ITT mix of a country. These contracts build reciprocity into the transaction by requiring a foreign seller to purchase specified products from domestic firms. Barter, counterpurchase, buyback, and offsets are the most common examples. And while these contracts vary from one another, two commonalities exist: (1) departure from the price margin of arm's-length exchange and (2) conditionality.

Under a countertrade procurement contract, a government may elect to use its oligopsony power in one market to bargain for reciprocal contracts that—in lieu of price discounts—shift the terms of trade off the price margin. Sometimes referred to as “non-standard,” the contract is hardly uncommon. Most estimates put countertrade at 15–20% of the total world trade. Although the bilateral (conditional) nature of countertrade contracts can induce trade diversion and the associated world welfare effects, the purchasing government's economy may benefit from foreign exchange savings, increased work orders, export market penetration, technology transfer, learning by doing, and reputational economies.

Counterpurchase agreements may reap similar benefits, although hard currency savings have been shown not to be a motivating factor since cash still changes hands. Historically, countertrade contracts have been employed most often by natural resource-abundant developing countries. For example, the Malaysians have bartered palm oil, the Russians oil and natural gas, and the Thai Government struck an agreement to pay foreign firms with chicken wings. In a world of imperfect information and transaction costs, countertrade contracts can be crafted to open new markets and establish relationships with foreign firms, thereby raising welfare in a manner described by the theory of the second best.

Offset arrangements require the foreign firm to transfer economic benefits (beyond cash) to the purchasing government's economy as a condition for the sale of the base product. These benefits may include the aforementioned countertrade instruments or a myriad of other arrangements that vary in complexity and time to fulfillment. Technology transfer, managerial services, investment, credit transfer, licensed production, co-production, and loan-import agreements are some

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<sup>10</sup> At the time of writing, 40 of the 153 WTO members were signatories to the GPA.

of the more common vehicles to transfer the benefits. Procurement data reveal that while simple countertrade contracts are historically favored by less-developed countries, offsets are the instrument of choice for middle- and high-income countries. These preferences can be explained by noting that the relatively sophisticated offset arrangements are designed to achieve multiple development objectives. In this respect, public procurement is a platform from which a set of policies can be crafted in support of an overarching economic development strategy.

## The Chapters

The book is divided into three parts: (1) theory and policy of procurement as a tool to foster technology transfer and industrialization, (2) country experiences, and (3) case studies of particular industries.

The five chapters comprising Part I focus, collectively, on procurement policy as a critical part of a comprehensive development strategy. In Chap. 1, Murat Yulek examines the growth of public expenditures in developing countries and forecasts public sector purchases of machinery and equipment. His analysis sheds light on the oligopsony power of many purchasing governments, and the largely untapped potential to extract rents from multinational corporations. An important theme of the entire book is introduced: namely, a well-conceived procurement policy can affect the rate of technology acquisition and industrialization.

This thesis is demonstrated using theory, policy application, and empirical data in Chaps. 2 through 5. Travis Taylor examines the empirical record of offset arrangements in international government procurement (Chap. 2), and Ron Watermeyer develops a framework for governments to link procurement to development outcomes (Chap. 3). Houssam-Eddine Bessam, Rainer Gadow, and Ulli Arnold revisit import substituting industrialization policy and argue that it still has a place in the developing-country toolkit (Chap. 4). Mahmut Kiper explores the relationship between knowledge, technology transfer, and economic development (Chap. 5). Attention is given to the challenges developing countries face in obtaining and absorbing technologies that help create comparative advantage.

Parts II and III present selected country experiences and industry case studies. Analyses of South Africa (Chap. 6), South Korea (Chap. 7), China (Chap. 8), and Turkey (Chaps. 9 and 10) offer firsthand accounts and micro-level data on ITT. The industry cases assess the relative efficacy of local content rules (Chap. 11), joint ventures (Chap. 11), and offsets (Chap. 12) to achieve development objectives.

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