

THE DETERMINANTS OF STRUCTURAL TRANSFORMATION IN ASIA: A REVIEW OF THE LITERATURE

Kunal Sen

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The Determinants of Structural Transformation in Asia: A Review of the Literature

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ABSTRACT

Structural transformation—the movement of workers from low-productivity to high-productivity activities— is an essential ingredient of inclusive growth. This paper reviews the evidence on why the pace of structural transformation has differed widely across countries in Asia, with a specific focus on the People’s Republic of China, India, and Thailand. It argues that both government failures relating to the functioning of labor, land, and product markets; and market failures relating to coordination of investment, credit market imperfections, and human capital formation have been the primary causes of the slow pace of structural transformation in several Asian countries. The paper suggests that a specific focus is needed to reform policies that impede the functioning of labor, land, and product markets as well as on strengthening industrial and education policies to address specific market failures around investment coordination and human capital formation.

Keywords: Asia, government failure, market failure, structural transformation

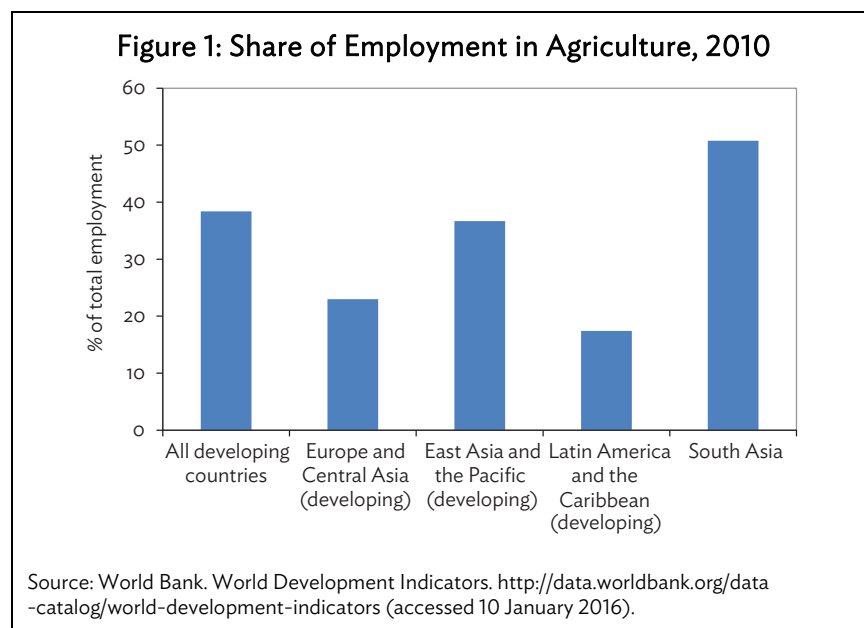
JEL codes: O14, O53, P51

I. INTRODUCTION

Structural transformation—the transfer of workers from low-productivity to high-productivity sectors or activities—is both a necessary and sufficient condition of economic development (Herrendorf, Rogerson, and Valentinyi 2013; UNIDO 2013; McMillan and Rodrik 2014). In low-income countries, workers are stuck in low-productivity sectors such as agriculture. The movement of workers from such low-productivity activities to high-productivity sectors such as manufacturing and some components of services lead to an increase in overall productivity and incomes (Duarte and Restuccia 2010). The speed at which this structural transformation takes place differentiates successful countries from unsuccessful ones (Felipe, Mehta, and Rhee 2015).

Large differences in productivity can not only exist across sectors but within sectors as well. Recent research has highlighted the existence of significant productivity differentials even within sectors such as modern manufacturing (World Bank 2013). Large productivity gaps can exist among firms and plants in the manufacturing sector as well, and these productivity gaps are typically larger in developing countries than in developed countries. This implies that the reallocation of labor and other resources both across and within sectors can be an important source of growth and structural change. Countries that have experienced such growth-enhancing productivity are more likely to witness sustained economic growth that is accompanied by a steady decline of workers in the low-productivity sectors such as agriculture (Bah 2011).

In the Asian context, the pace of structural transformation has differed widely across countries (Felipe, Dacaycuy, and Lanzafame 2014). Among the early industrializing Asian economies, such as the Republic of Korea and Taipei, China, the transfer of workers from agriculture to manufacturing was rapid, leading to very sharp increases in economic growth that was sustained for a prolonged period of time (Commission for Growth and Development 2008). The pace of structural transformation was slower in the late industrializing Asian countries, which implied that a large proportion of the workforce was still employed in agriculture, even after rapid economic growth in several of these countries. As Figure 1 indicates, while the average share of employment in agriculture in 2010 was 38% across all developing countries, developing Europe and Central Asia, and developing Latin America and the Caribbean had relatively low shares of 23% and 17%, respectively. In contrast, the share of employment in agriculture was 37% in developing East Asia and the Pacific, and 51% in South Asia. This suggests that in spite of a successful record of economic growth, Asian countries has not done equally well in structural transformation. Within Asia, large shares of employment in agriculture in 2010, even after several years of economic growth, can be observed in the People's Republic of China (PRC) (38%), India (51%), Indonesia (38%), the Philippines (33%), Sri Lanka (33%), Thailand (38%), and Viet Nam (48%). In contrast, very low employment shares of agriculture can be observed for the Republic of Korea (7%) and Malaysia (13%) (Table 1).



Share of Employment in Agriculture, Individual Asian Countries (%)

Bangladesh	38.2
People's Republic of China	36.7
India	51.1
Indonesia	38.3
Philippines	33.2
Sri Lanka	32.7
Thailand	38.2
Viet Nam	48.4
Republic of Korea	6.6
Malaysia	13.3

Source: World Bank. World Development Indicators. <http://data.worldbank.org/data-catalog/world-development-indicators> (accessed 10 January 2016).

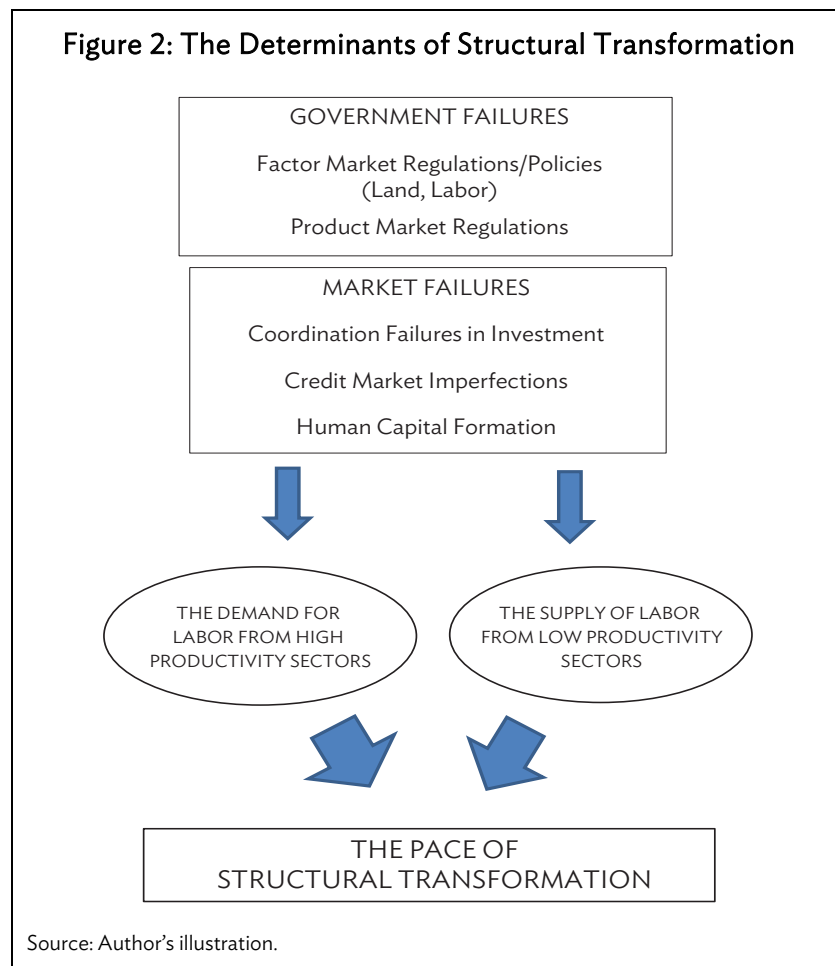
Why have several Asian countries done relatively poorly in structural transformation, even when they enjoyed growth success? In this paper, we review the evidence on the determinants of structural transformation pertaining to Asia, to assess the most likely causes for the slow pace of structural transformation in the late Asian industrializing countries. We also provide case-study evidence from three Asian countries—the PRC, India, and Thailand—to illustrate our main arguments and to provide some context to our discussion. We end the paper with a synthesis of the main findings and draw some lessons for policy.

II. THE DETERMINANTS OF STRUCTURAL TRANSFORMATION IN ASIA

Structural transformation—the movement of labor from low-productivity to high-productivity sectors—is an outcome of two independent sets of factors – one, which influences the demand for labor in high-productivity sectors, and the other which influences the supply of labor from low-productivity sectors. The greater the demand for labor in high-productivity sectors and the greater the ease in which labor from low-productivity sectors can move to the high-productivity sectors, the faster is the pace of structural transformation. The literature identifies two broad sets of determinants of the demand and supply of labor. The first relate to government failures that impede the functioning of factor and product markets and the second relate to market failures such as coordination problems in investment and technological acquisition and learning externalities that push the private return to below social return, leading to underinvestment in areas of potential dynamic comparative advantage (McMillan and Rodrik 2014).

Government failures can affect both the demand for labor from high-productivity sectors and the supply of labor from low-productivity sectors. Policies that constrain the growth of high-productivity sectors such as product market and labor regulations can have a negative effect on the demand for labor in the high-productivity sectors (Dabla-Norris et al. 2013). Policies that affect the movement of labor from low-productivity to high-productivity sectors such as land reforms and migration policies will affect the supply of labor from the low-productivity sectors.

Similarly, market failures can also affect both the demand from high-productivity sectors and the supply of labor from low-productivity sectors. Market failures such as coordination problems in investment that depress the growth of the manufacturing sector have a negative effect on the demand for labor in the high-productivity sectors. Credit market imperfections that do not allow potential borrowers in high-productivity sectors to obtain access to loanable funds at reasonable rates can also lead to the level of investment in high-productivity sectors to be lower than socially desirable, inhibiting the demand for labor in these sectors. With respect to the supply of labor, market failures in human capital formation that lead to a low level of skill and education in the workforce will affect the supply of skilled labor necessary for rapid industrialization. We set out the relationships between the government and market failures, the demand and the supply of labor, and the rate of structural transformation in Figure 2 below. We then discuss types of government and market failures, and use examples from Asia to illustrate our argument.



A. Government Failures

Government failures can impede the functioning of labor, land, and product markets, all of which can affect the reallocation of labor from low-productivity to high-productivity sectors.

Labor Policies. Two types of labor policies can affect the rate of structural transformation. The first is the regulation of the labor market such as employment protection legislation, minimum wage legislation, and rules that govern trade union activity. The second is the nature of migration policies that may affect the movement of labor from the rural to the urban sector. We discuss both these sets of policies in turn.

Labor Regulations. The regulation of the labor market with a view to protecting the interests of workers can impede the smooth functioning of the labor market. Labor regulations typically create adjustment costs in hiring and firing labor and in making adjustments in the organization of production. Firms respond to strict labor regulations in the market by substituting capital for labor in the first instance. If the labor regulations are particularly onerous, they may decide not to expand their size. Further, labor regulations can increase the bargaining power of workers, deterring investment if investors choose not to invest if they worry that workers will expropriate a greater part of the returns ex post (Besley and Burgess 2004). The net result of strict labor regulations would be to lead to a reduction in the demand for labor from the manufacturing sector, both directly as firms substitute

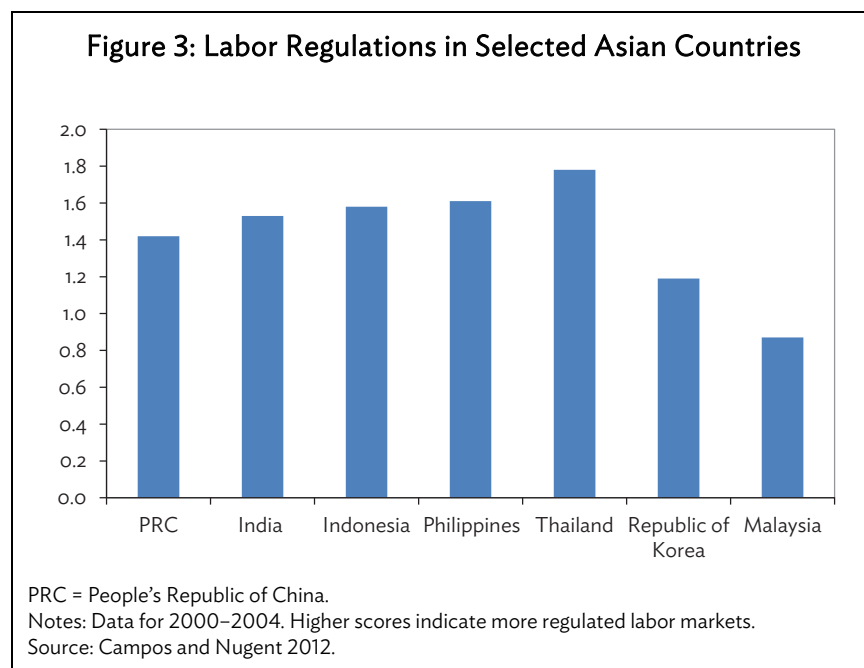
capital for labor and indirectly, as firms do not make the investments they would have otherwise chosen to make to increase the scale of their operations, and by not making investments for growth, affecting the overall demand for labor.

With a reduction in the demand for labor from the manufacturing sector, the rate of labor movement from the agriculture to the manufacturing sector will be slow, impeding the pace of structural transformation. A large literature has provided both country level and cross-national evidence on the detrimental effect that stricter labor regulations can have on the growth of the formal manufacturing sector and on the pace of structural transformation (Fallon and Lucas 1993, Heckman and Pagés 2004, Besley and Burgess 2004, Botero et al. 2004, McMillan and Rodrik 2014).

Labor markets have been flexible in economies which have witnessed rapid structural transformation such as the Republic of Korea and Taipei, China. In these countries, the government laid greater emphasis on the flexibility of labor markets than most other regions of the world (Agarwal et al. 2000). Employers did not find it difficult to fire workers when there was a need to do so, such as due to technological change or when the firm wanted to cease or cut back production. In other parts of Asia, there were government sponsored mechanisms for dismissal, or where the government's permission was needed to terminate an employee's employment. In the South Asian context, job security legislation created disincentives for expansion of firms in the formal sector, especially in India, Nepal, and Sri Lanka. In much of South Asia, job security laws are often too restrictive, compliance too complicated, and enforcement too weak and discretionary (World Bank 2012a).¹ In Southeast Asia, on the other hand, labor markets were, on the whole, lightly regulated. There were, however, important differences within Southeast Asia, with Indonesia, the Philippines, and Thailand having the most tightly regulated markets. In Indonesia, in particular, high rates of redundancy payments mandated by the Indonesian Labor Law of 2003 meant that Indonesia ranked higher in redundancy costs than neighboring countries (Manning 2014). Further, increases in the minimum wage higher than the rate of inflation has had a negative effect in the demand for labor in the formal urban sector in Indonesia (Suryahadi et al. 2003). As Figure 3 makes clear, several countries in Asia have more tightly regulated labor markets than the countries in Asia which have seen rapid structural transformation—the Republic of Korea and Malaysia.²

¹ The difference in the stringency of labor regulations between East Asia and South Asia can be attributed to the low political strength of trade unions in economies such as the Republic of Korea and Taipei, China in the early stages of industrialization, as compared to the strong political voice unions enjoyed in the governments formed in South Asian countries such as Sri Lanka and India immediately after independence (Agarwal et al. 1995).

² The data on labor regulations comes from Campos and Nugent (2012), who provide time-series data on 140 countries on (a) cost of increasing hours worked, (b) cost of firing workers, (c) dismissal procedures, and (d) alternative employment contracts (part-time or fixed term versus regular full-time). The higher the score on labor regulations, the more regulated is the labor market.



Migration Policies. Governments can impede the flow of labor from rural to urban areas both directly or indirectly. An example of a policy that affects the flow of labor directly from rural to urban areas is the PRC's *hukou* system. We will discuss the *hukou* system in greater detail in the next section where we discuss the factors behind the PRC's relatively low pace of structural transformation (as compared to the Republic of Korea and Malaysia). Such direct government-induced impediments to the movement of labor from the countryside to the city are not commonly seen in other Asian countries. More prevalent have been government policies that have indirectly impacted on rural–urban labor migration by making it less attractive to rural residents to move to urban areas. The foremost example of such government policies is social insurance schemes, which if they are not fully portable, can constrain the movement of labor from low-productivity to high-productivity sectors (World Bank 2012a). Social insurance schemes that are not fully portable lack the ability to preserve the actuarial value of accrued pension rights when moving from one job to another job (Pasadilla 2011). Portable social insurance systems have been particularly difficult to implement in low-income Asian countries, where there is a large proportion of agricultural, casual wage, and informal workers (Park, Lee, and Mason 2012).

In addition to the lack of portable social insurance in most low-income Asian countries, another set of government failures have been evident in the severe urban housing, infrastructure and service deficiencies as well as various forms of urban congestion that have constrained the ability of migrant workers to obtain housing at reasonable rates and access services such as water and sanitation when they have moved from rural to urban areas (Tacoli, McGrahan, and Satterwhaite 2015). Among developing Asian countries, South Asia does particularly badly, and ranked only ahead of Sub-Saharan Africa with respect to the proportion of urban households with access to safe drinking water, and is ranked last with respect to improved sanitation (Ellis and Roberts 2016).

Land Policies. Government policies toward land transfer and acquisition matters for structural transformation in two important ways. Firstly, land reform—purposive transfer of land ownership from households with large landholdings in rural areas to those with little or no ownership of land or the provision of security of tenure to tenant cultivators—can lead to higher agricultural productivity (as there is an inverse relationship between size of land holdings and farm productivity, see Berry and Cline 1979), freeing up labor in the countryside to move to manufacturing or services jobs in urban areas. Furthermore, an egalitarian distribution of land that leads to greater incomes for the poorer sections of the rural population can create a larger home market for manufacturing goods, facilitating the expansion of the manufacturing sector.

Redistributive land reform played an important part in the rapid growth experiences in the Republic of Korea and Taipei, China after World War II as well as in the growth successes in the PRC in and Viet Nam in the 1970s and 1980s (Putzel 2000). The land reforms in the Republic of Korea and Taipei, China also led to rapid structural transformation in three ways. Firstly, the land reforms led to increased incomes among poor farmers in the two countries, who could then invest some of the income in the schooling of their children.³ This led to the availability of a skilled workforce in the Republic of Korea and Taipei, China necessary for rapid export-oriented industrialization. Secondly, the increased incomes in rural areas led to an expansion of the domestic market for the manufacturing sector, fostering rapid industrialization. Thirdly, the more egalitarian land distribution provided a stable political environment which allowed the political leaders of the two countries to concentrate their attention to rapid industrialization (Ban, Mun, and Perkins 1980; Putzel 2000; Studwell 2013).

In contrast to the successful land reform experiences of the Republic of Korea and Taipei, China (as well as of the PRC and Viet Nam), in the Philippines, land reforms were not implemented in spite of several attempts to do so, with most land cultivated by landless peasants (Hayami, Quisumbing, and Adriano 1990; Studwell 2013). Similar unsuccessful attempts at land reforms occurred in other Asian countries, such as India and Pakistan, leading to high inequalities in land ownership in rural areas that limited the possibilities of agrarian change necessary for rapid structural transformation (Herring 1983).⁴

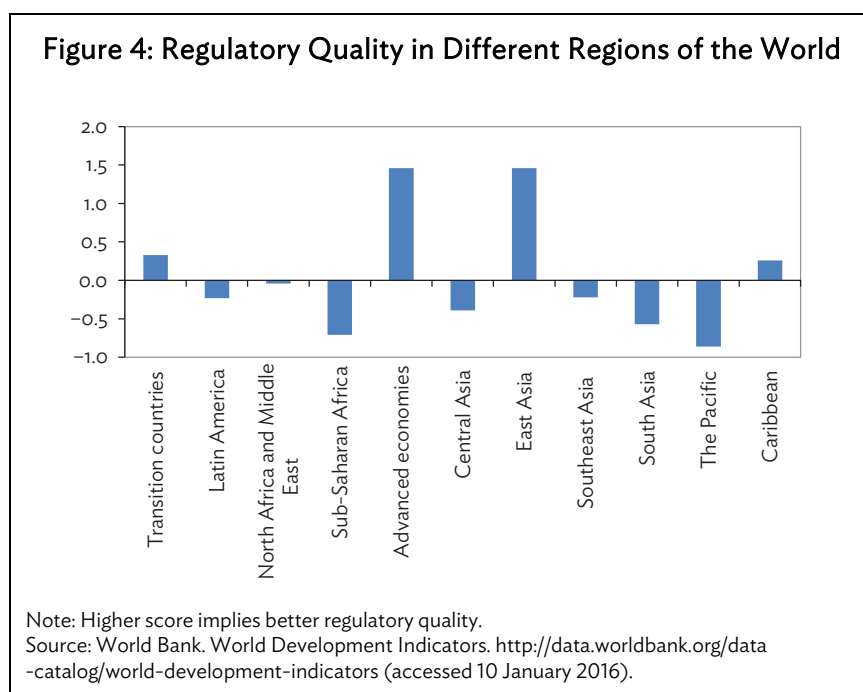
A second set of policies relating to land that matter for structural transformation are policies that govern the manner agricultural land is acquired to set up factories or for infrastructural projects. In land-scarce Asian countries where population densities are high, obtaining agricultural land for industrialization is essential for the manufacturing sector to expand. Burdensome land acquisition policies that increase the price of land artificially by generous government mandated compensation packages for sellers of land (usually, in the low-income country context, poor smallholder agriculturists) or make the process of acquiring land bureaucratically complex and cumbersome may discourage potential investors in investing in the manufacturing sector. In addition, essential infrastructural projects (whether in the public or private sector) that are critical inputs to the growth of the manufacturing sector (such as power plants or road and rail transportation networks) may not take place in the face of inefficient land acquisition policies.

³ The increase in agricultural productivity in Taipei, China was particularly striking, with yields of traditional crops such as rice and sugar increasing by half, and that of fruits and vegetables doubling (Studwell 2013).

⁴ As Studwell (2013) notes, “in the wake of the Second World War, progressive politicians in Northeast Asia.. recognised the capacity of land reforms to deliver simultaneously on both the economic and political fronts” (p. 66). In contrast, “elites in South-east Asia (and South Asia, our insertion) were sufficiently coopted by colonial rulers (before and after independence) that they lost their ability ... to think clearly about national economic development” (p. 70).

The experience of Asian countries with land acquisition policies has been uneven. In some countries, such as the PRC and Viet Nam, existing legislation allows the state to requisition land owned by farmers' collectives, which allows the state to forcibly acquire land for industrialization or infrastructural projects if need be. In other countries, such as Indonesia and India, land acquisition processes are more complex and time-consuming, and have led to significant delays as well as widespread corruption in acquiring land for large infrastructural projects (Reerink and Bakker 2015).

Product Market Regulations. Government policies and procedures that increase the cost of doing business or create artificial barriers to firm entry in the high-productivity sectors such as formal manufacturing and tradable services are likely to depress private investment in these sectors and constrain the growth of the high-productivity sectors (World Bank 2015). Regulatory reforms that make it easier to start a business or to close down an unprofitable enterprise is strongly associated with the speedier reallocation of labor from low-productivity to high-productivity sectors (World Bank 2013). The performance of Asian economies in the ease of doing business varies widely, with Singapore and Taipei, China ranked first and fifth among 189 economies. In contrast, the Philippines is ranked 103rd, Indonesia 109th, India 130th, and Bangladesh 174th. Across the different dimensions of product market regulations, different regions of Asia do better than other regions in some dimensions and worse in other dimensions. With respect to the ease of starting a business, it is faster and cheaper in South Asia than it is in East and Southeast Asia. On the other hand, it is less costly and timely for businesses to export and import in East and Southeast Asia than in South Asia. The sharp variations in regulatory quality within Asia is evident from Figure 4, where East Asia's quality of regulations is equivalent to that of advanced economics, while the quality of regulations in Central Asia, South Asia, and the Pacific are worse than that of Latin America.



B. Market Failures

A common market failure in low-income countries are coordination failures resulting from the high costs of collecting and processing information for new products, technologies, and industries in low-

income country settings (Rodrik 2004). By investing in new information collection and processing, and making information about the relevant new industries freely available to firms, the state can play a facilitating role in the introduction of new products and the move to new industries, and as a consequence, in bringing about structural change and technological upgrading in the economy (Lin and Monga 2010). Coordination failures also result from the fact that private returns to investment in sectors that offer the potential of dynamic comparative may be less than social returns, as firms need to go through a learning process to build the capabilities to become competitive in new industries (Stiglitz and Yusuf 2001). Since this learning process may involve substantial financial losses at least at the initial stage, the private return to such investment may well be negative, even the investment may lead to significant positive spillover effects and the building up of social and human capital. Risk averse entrepreneurs with low wealth endowments may not be willing to invest in such investments that have high sunk costs and prefer to invest in activities with a high short-term possibility of profits but which offer less possibilities for technological upgrading.

The divergence of the private and social returns to investment may be particularly evident in more modern manufacturing activities or in knowledge-based services as compared to unskilled labor-intensive manufacturing or primary commodity production. As the economy moves into these modern sectors, economies of scale and scope become more important, and there is a greater reliance of firms on highly skilled labor and access to long-term finance to make the lumpy investments in equipment, working capital, and export financing. Thus, there is a need for the state to play a coordinating role in directing scarce investible funds and limited foreign exchange (to purchase imported capital goods and technology from abroad) to the most productive firms and facilitate the upgrading and diversification of individual firms (Lin and Monga 2010).

A key determinant of the rapid pace of structural transformation witnessed in East Asia was the adoption of interventionist industrial policies by the governments of the Republic of Korea and Taipei, China, once they moved past the labor-intensive manufacturing phase in their industrialization processes (Pack 2001). Interventionist industrial policies allowed for the overcoming of coordination failures in investment decisions of private and state firms as these firms moved into more technologically complex sectors and activities such as automobiles and electronics. Such industrial policies included dynamic strategies to advance the prospects of individual sectors by enabling them to exploit economies of scale, technological spillovers, and possibilities of learning and to coordinate their own investment with downstream producers (Stiglitz 1996, Gokarn 1995).

In contrast to the Republic of Korea and Taipei, China, there was limited evidence of interventionist industrial policy in the other Asian economies (barring India, which we will discuss later). Most of the Southeast Asian countries followed a hands-off policy toward the industrial sector and encouraged labor-intensive export-oriented industrialization with the aid of export subsidies and competitive exchange rates, rather than selective intervention (Hill 1996). Where governments in Southeast and South Asian countries (such as Malaysia with an emphasis on heavy industry) tried to adopt a more interventionist industrial policy, this led to greater corruption and rent seeking rather than rapid industrial growth driven by technological adoption as was the case in the Republic of Korea and Taipei, China (Perkins 2013).

A second type of market failure observed in low-income country settings is the failure of credit markets to allocate funds to projects that have a high social rate of return though they may not have sufficiently high private rates of return. Financial markets are characterized by asymmetric information that exist between the providers of capital and those seeking capital (Stiglitz and Weiss 1981). In a low-income country setting, with weak property rights in land and other assets that may be offered as

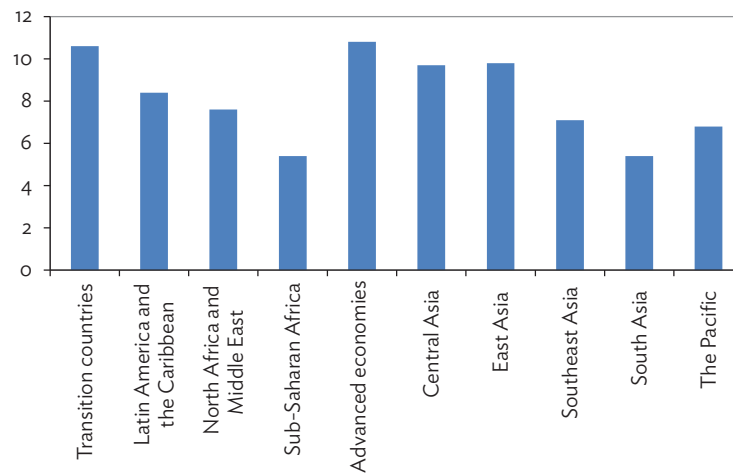
collateral, and the lack of information-gathering agencies (such as credit rating agencies), banks and development finance institutions may typically ration credit to small and medium firms that may offer the highest possibility of technological development and productivity growth in the manufacturing sector (Sen and Vaidya 1997). Government interventions may be required to address such credit market failures to ensure that projects with high social rates of return are adequately funded. Again, in the East Asian case, governments typically directed credit at preferential rates of interest to exporting firms in technology-intensive industries, allowing these firms to obtain long-term loans to finance their investment in fixed assets and technology development. The role of the government in addressing credit market failures by providing directed credit to exporting firms has been seen to be an important catalyst in the rapid movement of firms in the Republic of Korea and Taipei, China into areas of potential dynamic comparative advantage, and in accelerating the pace of structural transformation in these two countries (Lin 2012).

Selective credit policies were not followed in other Asian countries, in part because such policies need a high level of administrative complexity to select firms with the highest potential for growth, and to monitor the performance of these firms to ensure that they meet their targets. For most other Asian countries, the administrative capability of the bureaucracy was not high enough to implement successful selective credit policies. As a consequence, the Southeast Asian countries did not take recourse to selective credit policies to support domestic industrialists; instead, they courted multinationals by means of attractive tax incentives (Jomo 2001, Mishra 1995). In South Asian countries, there was greater use of selective credit policies, with generally limited success in fostering technological progress and innovation (Sen and Vaidya 1997).

A third type of market failure is in the rate of human capital formation. The private return to primary schooling is often below the social return to education, due to the presence of positive externalities in human capital formation (Lucas 1988). Governments play an important role in increasing the educational attainment of their populations in the early stages of economic development. Furthermore, the acquisition of skills that are necessary for shifting workers from low skilled jobs in agriculture and the informal service sector to high-productivity jobs in manufacturing and knowledge-based services can be insufficient if job training and skill acquisition is left to the market (Stiglitz and Yusuf 2001). Because companies that spend money on job training may not recoup their costs, job training and skill acquisition may be underfunded without state coordination. The East Asian countries invested in large amounts in state-provided educational systems that placed an increasing emphasis on technical subjects (Pack 2001). Primary education was emphasized at their early stage of economic development, leading to impressive rates of increases in years of schooling. The high level of skills and educational attainment that was evident in the general population in the Republic of Korea and Taipei, China by the 1970s made it possible for workers to move in large numbers from agriculture to manufacturing, as the demand for labor increased in the manufacturing sector with rapid export-oriented industrialization.

Southeast Asian and South Asian countries have had limited success with human capital formation and the creation of a skilled labor force. This is evident from Figure 5, which provides years of schooling for 25-year-olds and above. We see that the average years of schooling in Central and East Asia are very similar to that observed in advanced market economies, while years of schooling for South Asia is close to that observed in Sub-Saharan Africa. Southeast Asia's years of schooling are lower than that for Latin America and the Caribbean.

Figure 5: Years of Schooling for 25-Year-Olds and Above for Different Regions of the World



Source: Quality of Government database. <http://qog.pol.gu.se/data> (accessed 10 January 2016).

III. COUNTRY CASE STUDIES

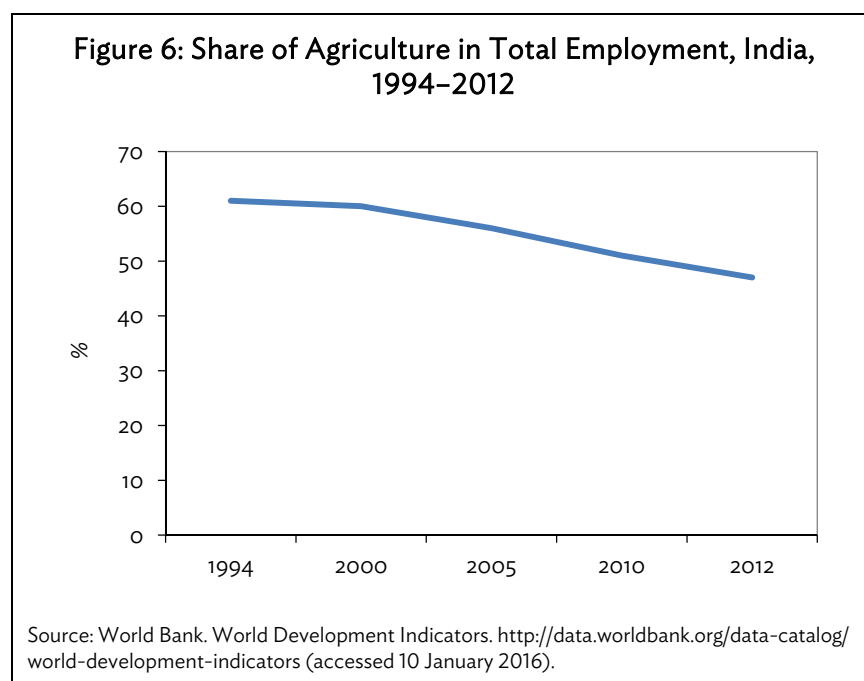
In this section, we provide country case studies of three Asian countries which have witnessed a slow pace of structural transformation. The first two are India and the PRC, the two largest countries in developing Asia, both of whom have substantial portions of their workforce employed in agriculture (37% in the PRC, 50% in India). The third is Thailand, one of the growth successes of Southeast Asia (along with Malaysia and Singapore), but with a disappointing record in structural transformation.

A. India

The rate of structural transformation in India has been very slow, with a drop of only 14 percentage points of the proportion of the workforce employed in agriculture in 1994–2012, a period of rapid economic growth in the country (Figure 6).⁵ In this respect, India's pattern of structural transformation has been atypical in the Asian context in three important respects (Kocchar et al. 2006, Sen 2014). Firstly, unlike all the major Asian economies, starting with Japan; then the Republic of Korea; Singapore; and Taipei, China, and more recently, the PRC and Viet Nam, which moved from the import substituting phases of their economic development to an export-oriented development strategy through a strong growth in the labor-intensive segment of the manufacturing sector, this was not the case in India, where the labor-intensive manufacturing's share in total output has fallen over time (Sen 2009). Secondly, though there has been a large decline in the share of agriculture in total output in the postindependence period (from 55% in 1955 to 20% in 2008), much of the shift in economic activity has occurred toward services and not toward manufacturing, as was the case in other Asian high-growth economies. In fact, the service sector's share in output stood at 41% in 2008, much higher than what may be expected, given India's level of per capita income. Secondly, a distinctive feature of the Indian manufacturing sector has been its dualism—the existence of a relatively small set of formal sector firms which has a largely protected workforce along with a

⁵ Economic growth averaged over 7% per annum in this period.

large number of firms in the informal sector, where workers have little access to social security, employment protection, and other benefits (Mazumdar and Sarkar 2008). Labor productivity in formal sector firms was significantly higher than that in informal sector firms, and the gap between the two types of firms has been increasing (Sen 2014, Ahsan and Mitra 2014). These three facts suggest that there is large potential for reallocation of labor both across and within sectors to increase economic growth in India. That such reallocation of labor has not occurred as yet can be attributed to a range of policy impediments in the proper functioning of factor and product markets, as well as market imperfections relating to access to credit and human capital formation (Bollard, Klenow, and Sharma 2013).



1. Government Failures

The most important of the policy constraints to efficient transfer of labor from low-productivity to high-productivity activities in the Indian economy have been labor regulations, followed by land acquisition policies, and product market regulations.

Labor Regulations

India's labor laws are among the most restrictive in the world, especially on the question of retrenchment. According to the rigidity of employment index proposed by the World Bank, Indian labor laws are more protective than the international average or an average of a group of comparator countries composed of large developing countries and countries in East and South Asia (Ahsan, Pages, and Roy 2008).⁶ Much of the rigidity in India's labor laws derives from the Industrial Disputes Act (IDA) of 1947, which sets out the conciliation, arbitration, and adjudication procedures to be followed in the case of an industrial dispute. The IDA imposes significant restrictions on employers regarding changes in conditions of employment (such as hours of work, leave, and holidays) and compensation

⁶ In a sample of 34 Organisation for Economic Co-operation and Development (OECD) and emerging market economies, India's employment protection legislation was the third most stringent after the Czech Republic and Portugal with respect to permanent (indefinite) contracts and the most stringent with respect to collective dismissals (Dougherty 2009).

to workers (such as wages and pension provisions), layoffs, retrenchments, and closures.⁷ As a consequence, India's labor laws (exemplified by the IDA) has reduced the incentive of firms in the modern manufacturing sector to hire workers on permanent contracts and pushed them toward more capital-intensive modes of production, than warranted by existing costs of labor relative to capital (Saha, Sen, and Maiti 2013; Dougherty 2009; Hasan, Mitra, and Sundaram 2013). In addition, India's restrictive labor laws have had a negative effect on the growth of the formal manufacturing sector, especially its labor-intensive industries, leading to limited possibilities for the formal manufacturing sector to absorb the high levels of surplus labor that are present in a relatively low-productivity agriculture sector (Besley and Burgess 2004; Gupta, Hasan, and Kumar 2009).

Land Policies

Under the 1949 Indian Constitution, states in India are granted the power to enact and implement land reforms. Different state governments have used this autonomy to enact legislation, some as early as the 1950s. Land reform legislation have consisted of four categories: i) abolition of intermediaries who were rent collectors under the preindependence land revenue system, ii) tenancy regulation that attempts to improve the contractual terms faced by tenants, iii) a ceiling on landholdings to redistributing surplus land to the landless, and iv) attempts to consolidate disparate landholdings (Ghatak 2013). Abolition of intermediaries has been the most successful set of land reforms among the four categories. There has been less success in the implementation of other land reforms, with some notable exceptions (such as tenancy reforms in West Bengal).⁸ Moreover, the evidence on whether land reforms increased productivity in Indian agriculture is mixed (Besley and Burgess 2000).

There are severe policy constraints to the acquisition of land for industrial use for public projects in infrastructure. Given high labor-land ratios in rural areas, land remains a scarce resource as well as a source of livelihood for millions of Indian farmers. Land acquisition in India is currently governed by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (LARR) Act 2013. This act fixes the minimum compensation payable to farmers at four times the market price in rural areas and two times the market price in urban areas. The act also stipulates a comprehensive resettlement and rehabilitation package for all displaced farmers as well as placing severe restrictions on the exercise of eminent domain. This act came into being to protect the interests of small farmers, which was not addressed in the previous legislation that governed land acquisition in India (that dated to the colonial period). However, concerns have been expressed whether the current legislation significantly impedes the transfer of land from low-productivity agricultural use to higher productivity use in industry and infrastructural provision, with an arbitrarily set minimum price for compensation that does not take into account local market conditions and cumbersome procedures to obtain land either for private or public use (Ghatak and Ghosh 2011). Therefore, existing land acquisition policies are an important barrier to the growth of the manufacturing sector in India, and in bringing about structural transformation.⁹

⁷ Under Chapter V.B of the IDA, labor courts and Tribunals can set aside any discharge or dismissal referred to them as not justified. In units employing more than 100 workers, retrenchment requires seeking authorization from the state government and this authorization is rarely granted.

⁸ As Bardhan (1984) argues, the lack of political will to implement far-reaching land reforms may be attributed to the strong presence of the landed farmers in India's ruling coalition.

⁹ Why have Indian state and central governments not attempted to dismantle the stringent labor regulations or made it easier for land to be acquired for nonindustrial purposes? Reform of labor laws and land acquisition policies are seen to be controversial and difficult to implement in the era of coalition governments that have characterized the Indian political system in the 1990s and beyond (Sen 2009). Both labor laws and changes in land acquisition policies belong to what may be termed as 'mass politics reforms'—which are reforms that may be considered antipopulist and are therefore difficult to implement in India's current political context (Varshney 1999).

Product Market Regulations

Regulation of product markets was considerably eased in India in 1991 with the dismantling of industrial licensing, and a significant reduction in the number of industries reserved for the public sector. In addition, restrictions on foreign direct investment (FDI) were lifted in high-technology and high-investment priority industries. Significant trade reforms were also enacted with the removal of quotas and a shift to tariffs, and a gradual reduction in tariffs over time. However, there has been little evidence of “creative destruction” accompanied by the reallocation of resources from low-productivity to high-productivity firms in the manufacturing sector (Goldberg et al. 2010). The industrial sector is still dominated by incumbents—state-owned firms and business groups—and there is limited new firm entry in the formal manufacturing sector (Alfaro and Chari 2009). The reasons for this appear to be first, significant impediments to firm exit in the form of stringent bankruptcy laws which still favor restructuring of existing loss-making firms rather than closure and second, the political connections that incumbents have which allow them to prevent entry of new firms, especially in concentrated, profitable industries, and in industries dominated by state-owned corporations (Mody, Nath, and Walton 2011). In spite of several decades of reforms, several government policies relating to product markets still remain in place and act as constraints to the reallocation of labor from low-productivity to high-productivity sectors.

2. Market Failures

Coordination Problems in Investment

Unlike most other countries in Asia (with the exception of the East Asian countries), the Indian government has historically played a strong role in industrial policy, both in coordinating the activities of the private sector, and in investing directly itself in many sectors of the economy. For the first 4 decades since independence, the government intervened in almost all aspects of the activities of manufacturing firms. Industry in India was subject to rather formidable legal barriers to entry. Investments, both in terms of expansion of capacity of existing firms and creation of new firms, was controlled by the government through its licensing policies that were in turn determined according to plan priorities. Though the purported objective of the licensing regime was better coordination of private investment so that the private return to investment was closer to its social return, it effectively led to a more monopolistic structure and significantly encouraged rent seeking by corporations entrenched with public powers (Aghion et al. 2008). The consequence of these policies was slow total factor productivity growth for much of the 1970s and 1980s (Ahluwalia 1991). Therefore, while the Indian government followed similar interventionist industrial policies to East Asian countries, the consequences for these policies for structural transformation was very different, mostly due to a lack of capacity of the Indian state to implement industrial policies effectively as well as the ad hoc and discretionary nature of these policies, which led to high rates of uncertainty among potential investors and a lack of private investment (Bhagwati 1993). This changed in the early 1990s with the dismantling of the License Raj, when market signals rather than government diktat guided the private investment decisions. In the Indian case, lack of state action to rectify market failures due to coordination problems in investment cannot be seen as an important contributory factor behind India’s slow rate of structural transformation; it can be argued that too much intervention, not too little, was a significant cause of India’s weak performance in manufacturing historically.

Credit Market Imperfections

Credit markets in India are characterized by a high degree of segmentation. Large corporate firms are able to access credit at reasonable terms from public sectors banks who dominate the Indian banking system (Sen and Vaidya 1997). In contrast, micro, small, and medium firms are rationed out from credit markets or face high rates of interest for their loans (as Banerjee and Duflo 2004) note, borrowers face much higher interest rates than depositors, which is a reflection of the extent of credit rationing in the economy). While there is a long history of government intervention in Indian credit markets to ensure adequate access to small and medium firms, the evidence suggests that such intervention has been largely unsuccessful in addressing credit market failures for smaller borrowers, with commercial banks reluctant to such borrowers, who do not have adequate collateral to offer, or lack credit history (Banerjee and Duflo 2004). The lack of loanable funds at competitive interest rates for small and medium firms in formal manufacturing in India has been seen as an important constraint to firm growth in Indian manufacturing, with much of the employment creation in India occurring in the smallest firm size class, which is mostly populated by firms in the informal sector (Mazumdar and Sarkar 2013, Hsieh and Klenow 2014). This has led to weak demand for labor in the manufacturing sector, especially in the smaller-sized firms, constraining the pace of structural transformation.

Human Capital Formation

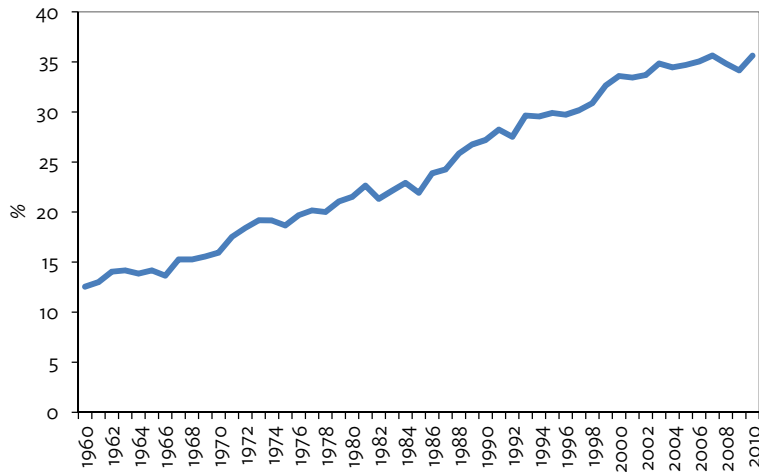
In contrast to the experiences of the East Asian countries, India has had limited success in human capital formation (India's estimated mean years of schooling for those aged 25 years and above in 2011 was 4.4 as compared to 7.5 for the PRC and 11.6 for the Republic of Korea; see Dreze and Sen 2013). In addition to low attainment in the quantity of schooling, there has been weak achievement in the quality of schooling as well, with only 6.6% of children in the first grade are able to read a level 1 text (Pratham 2006). In spite of an emphasis on free compulsory education for all children aged 14 years or less in the Indian constitution, successive Indian governments both at the central and state level have not invested enough in primary education, with a greater stress made on the provision of tertiary education (Dreze and Sen 2013). In addition, there has been a lack of monitoring of public schools in India, leading to large-scale teacher absenteeism that has contributed to the poor learning outcomes observed in India (Panagariya 2008). The low levels of educational attainment in India (both in quantity and quality of schooling) have led to a relatively unskilled workforce that is not suitable for modern manufacturing (Wood and Calandrino 2000). This has negatively affected the rate of structural transformation, as there has not been an adequate supply of skilled labor in low-productivity sectors such as agriculture for potential jobs in the high-productivity manufacturing and services sectors.

B. Thailand

Thailand have had prolonged success in economic growth since the 1960s, with growth rates that have been among the highest in the world.¹⁰ This rapid rate of growth was accompanied by an equally impressive increase in the share of manufacturing value added as a percentage of gross domestic product (GDP) (Figure 7) as well as a steady increase in the economic complexity of its exports (Figure 8).

¹⁰ The Commission for Growth and Development in its Growth Report names Thailand as one of the 13 growth successes, which have witnessed an average rate of growth of GDP at 7% a year or more for 25 years or longer (Commission for Growth and Development 2008).

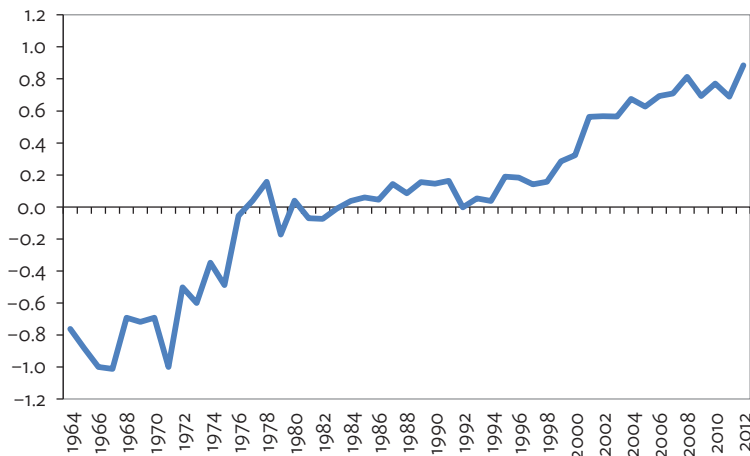
Figure 7: Manufacturing Value Added as a Percentage of GDP



GDP = gross domestic product.

Source: World Bank. World Development Indicators. <http://data.worldbank.org/data-catalog/world-development-indicators> (accessed 10 January 2016).

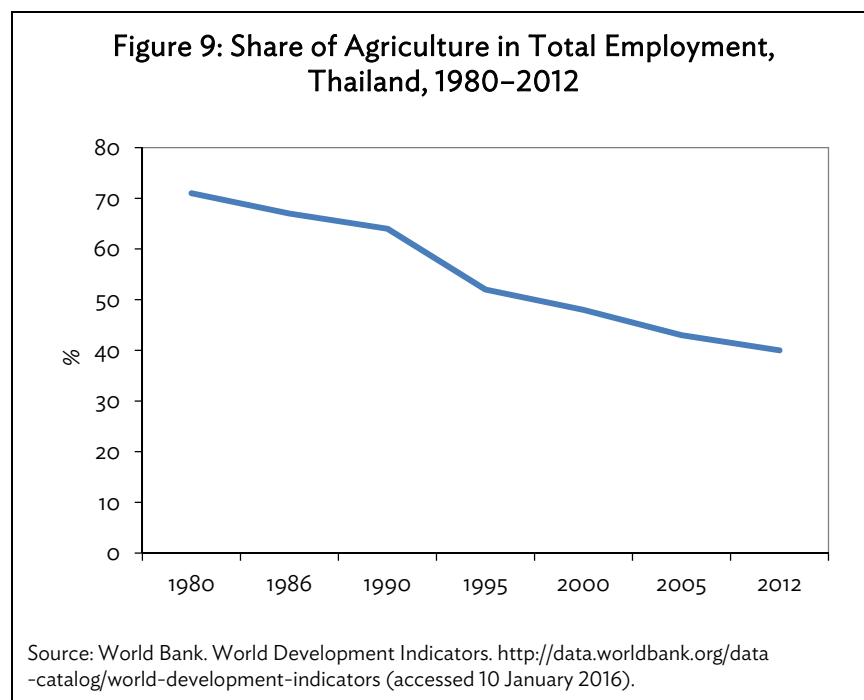
Figure 8: Economic Complexity, Thailand, 1964–2012



Note: Hausman-Hidalgo measure of economic complexity.

Source: Atlas of Economic Complexity.

However, in spite of the success that Thailand has had in sustained economic growth, its performance in structural transformation has been weak (Warr 1993). As Figure 9 makes clear, the proportion of workers employed in agriculture has fallen slowly over the decades of rapid economic growth. In 2012, around 40% of the proportion of the labor force still remained in agriculture. We discuss next the reasons for the slow rate of structural transformation that we observe in Thailand, focusing on government and market failures.



1. Government Failures

The key government failure that has impeded the pace of structural transformation in Thailand has been the absence of widespread land reforms. There was a strong economic case for land reforms, with high prevalence of tenancy farming in some parts of the country (especially Central Thailand) and a growing landlessness problem with increased commercialization of agriculture (Ramsay 1982). In 1975, the government of Thailand passed a land reform bill which stipulates that the government will purchase land from large landowners and offer the land to the landless in rural areas under a long-term hire purchase plan. The government set up an agency—the Agricultural Land Reform Office—to implement the land reform. The priority of the land reform program was to implement the reforms in areas where tenancy arrangements were high or where crop yields were low. However, the land reforms have been weakly implemented in Thailand, with concentration of land among large landowners still fairly high (Ramsay 1982). This has contributed to a sharp rural–urban divide, with large differences in incomes between rural and urban households. The rapid economic growth that Thailand witnessed since the 1960s, that was mostly driven by FDI in manufacturing, did not benefit large sections of the rural population, especially residents in the north of the country (Krongkaew 1995). The income polarization contributed to increasing political instability that had a negative effect on the growth of the manufacturing sector, especially after the financial crisis of 1997 (Sen and Tyce 2016).

With respect to government policies relating to migration, and labor market regulations, successive Thai governments have followed a liberal approach, not constraining the movement of labor from rural to urban areas, as well as not controlling the hiring and firing of labor. With respect to product market regulations, Thailand's score in the ease of doing business is 71, just below Malaysia's score of 79, but well above the regional East Asian average of 61 (World Bank 2014). This suggests that while Thailand can still do better in easing constraints to private investment in high-productivity sectors, Thai government policies relating to product market entry and exit is not an important factor behind Thailand's disappointing record in structural transformation.

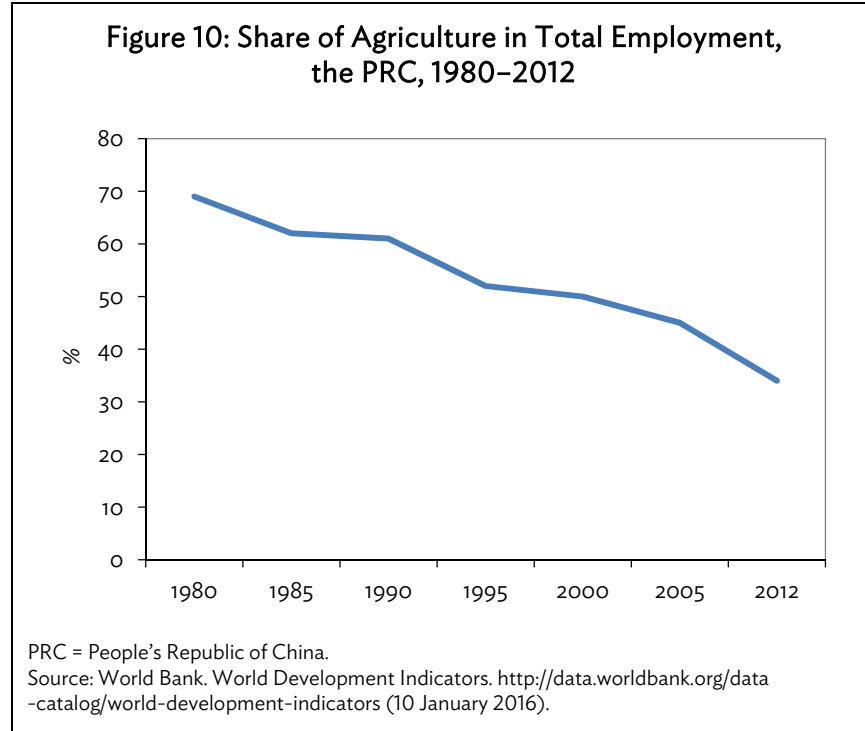
2. Market Failures

A clear difference between the Thai and East Asian growth experiences is that the Thai government has not attempted to follow interventionist industrial policies and selective credit policies as the governments of the Republic of Korea and Taipei, China have done so. Since the late 1950s, the Board of Investment (BOI) set up by the Thai government has used tax and other promotional incentives to encourage industrial investment, especially for export-oriented industrialization. However, there was no discretion in the manner these incentives were offered, with incentives applying equally to Thai or foreign firms and included exemptions from import duties and business taxes on imported raw materials, as well as tax holidays to promoted firms from three to 8 years (Sen 1995). The BOI played a critical role in Thailand's industrialization as well as its move up the technological sophistication of its manufacturing exports (Tambunlertchai 1993). Initially, until the 1980s, the BOI promoted firms were traditional industries such as food processing and textiles. However, since the 1980s, the BOI promoted firms increased substantially in electrical and nonelectrical machinery and chemical industries, and more recently, in automotive industries (Sen and Tyce 2015). The technocrats that were responsible for Thailand's industrial policy were conservative in their approach and avoided "picking winners" to a large extent (Perkins 2013). While this had the benefit of fostering Thailand's rapid export-oriented industrialization, such a "light touch" industrial policy may not have contributed to the growth of a strong indigenous set of Thai industrialists, and may have constrained the growth of a dynamic domestic manufacturing sector (Doner 2009).

Market failures have been most clearly manifest in the low rate of human capital formation in Thailand. While universal primary education has been achieved, secondary school attainment has been weak in rural and disadvantaged regions of the country (Khoman 1993). A large proportion of secondary school level educated workers and university graduates are unemployed, in spite of severe skill shortages in several manufacturing and service sectors. This is due to the lack of skill mismatch between secondary school and university educated and the labor market needs of high-productivity sectors such as manufacturing, and service sectors such as banking. In addition, the quality of schooling has been low, leading to low and declining learning outcomes, as compared to other countries with similar levels of per capita income (World Bank 2012b). Further, learning outcomes in other parts of Thailand has been far worse than in Bangkok (World Bank 2012b). The weak performance in educational quality has been due to a lack of school autonomy over budgeting and education content and a lack of educational resources. The market failures in human capital formation in Thailand have been an important factor that has constrained the supply of skilled workers from rural to urban areas, slowing down the rate of structural transformation.

C. The People's Republic of China

The Chinese economy grew at around 9% in 1960–2013 (in per capita GDP terms). At such a rapid rate of economic growth, it is generally expected that economic growth would have been accompanied by a rapid rate of structural transformation. While there has been a large movement of workers from rural to urban PRC, with rapid export-oriented industrialization, as the PRC became the "factory of Asia" from the 1980s onward, the rate of structural transformation still lags behind other high-growth Asian countries such as the Republic of Korea (Felipe, Dacuycuy, and Lanzafame 2014). As Figure 10 makes clear, while the proportion of workers employed in agriculture has halved from 1980 to 2012, one-third of the workforce still remains in agriculture.



1. Government Failures

Among government policies that have impeded the rate of structural transformation in the PRC, the most significant has been the household registration system (called the *hukou* system), where workers who want to migrate from rural to urban areas have to apply for permission from the government to switch their *hukou* from a rural to an urban residence. The purpose behind the *hukou* system was to initially shore up capital-intensive heavy industrialization, which was mostly planned in the cities, and to conserve key resources and food grains to sustain urban labor (Solinger 2014). In the postreform period, it was a way of controlling the movement of workers from rural to urban areas as the PRC embarked in its massive program of export-oriented industrialization so as to ensure a certain level of health, social security, and education for urban dwellers (Cai, Zhao, and Park 2008; Naughton 2007). In effect, the *hukou* was “a mechanism to block the free flow of resources (including labor) between... the cities and countryside (Chan and Zhang 1999, 821). Thus, the *hukou* system acted as a brake to the movement of labor from agriculture to manufacturing, and can be seen as the main factor behind the relatively low rate of structural transformation in the PRC (as compared to what may have been expected, given its rapid rate of industrialization).

With respect to labor regulations, the PRC's Labor Contract Law of 2008 and Minimum Wage Law of 2004 may have increased unemployment among less skilled workers and has increased the costs of firing for Chinese firms (Park 2015). This may have had an adverse effect on the demand for labor in the manufacturing sector.

With respect to land policies, radical land reforms, focusing on the confiscation of land from landlords and rich peasants, were enacted from 1945 to 1953 as the Chinese Communist Party took control of the country. The land reforms took place in northern PRC during 1945–1948 then spread to southern PRC between 1949 and 1953 (Moise 1983). Confiscated land was redistributed to poor peasants and agricultural laborers leading to a significant equalization in land ownership within

localities. Collectivization followed from 1954 onward, when private ownership and trade of land was banned and led to a highly egalitarian distribution of rights to land among households within the same locality. The land reforms are largely seen as a success in generating incomes among rural households and providing a stable political base for the rapid industrialization that occurred in the PRC since the 1980s (Burgess 2004).

2. Market Failures

Government policies to address market failures in technological spillovers and investment coordination may have also constrained the pace of structural transformation in the PRC (Lin and Yao 2001). Industrial policies emphasized the development of heavy, capital-intensive industries (such as automobiles, machinery, and steel). These sectors received preferential access to cheap credit, favorable tax treatment, and supportive public investments (Park, Cai, and Du 2010). In contrast, investments did not flow to light industries that had the capability to create more employment opportunities, especially for unskilled workers. Further, entry into nonindustrial, labor-intensive sectors, such as services, was often restricted, which in turn limited their development. Finance sector policies have also been distortionist with large, capital-intensive firms continuing to receive favorable treatment from state-owned commercial banks (Perkins 2001). Further, nonperforming loans have been a problem for the PRC's public sector banks that had an incentive to steer funds to large, state-owned enterprises or to state-supported projects implicitly backed by the government. In contrast, private enterprises, many of which were small and medium sized, found it difficult to obtain loans from state commercial banks and instead turned to alternative financing channels, including FDI, though they accounted for the majority of new job creation since the mid-1990s, government restrictions notwithstanding (Park, Cai, and Du 2010).

Government action to address market failures in human capital formation is generally seen as a success in the PRC, with low rates of illiteracy and the provision of universal elementary education early on in the PRC's development process (Naughton 2007). By 2000, the proportion of the population with no formal schooling had fallen from 35% in 1982 to less than 10%. A large part of the increase in educational attainment can also be explained by the rapid increase in the returns to education with fast economic growth (Naughton 2007).

IV. CONCLUSIONS AND POLICY IMPLICATIONS

Structural transformation—the reallocation of labor from low-productivity to high-productivity activities and sectors—lies at the core of economic development (Dabla-Norris et al. 2013). Countries that have been able to successfully transfer workers from low-productivity sectors such as agriculture to high-productivity sectors such as manufacturing have seen sustained inclusive growth. Yet there are few Asian economies that have successfully combined structural transformation with rapid growth—the notable high achievers in this regard are Malaysia; the Republic of Korea; and Taipei, China. In this paper, we argued that the pace of structural transformation is determined by two independent sets of factors—the demand for labor from the high-productivity sectors and the supply of labor from the low-productivity sectors. We further argued that both government failures and market failures can negatively affect the demand for labor from high-productivity sectors as well as constrain the mobility of labor from low-productivity sectors. Government failures such as labor regulations and product market regulations can have a negative impact on the demand for labor in high-productivity sectors such as manufacturing, while land policies (such as the lack of effective land reforms or government-induced barriers to rural–urban migration) can create impediments in the smooth outmovement of

labor from low-productivity sectors such as agriculture. Market failures such as lack of coordination in investment and credit market imperfections can have a negative effect on the demand for labor in the modern sectors of the economy unless addressed by effective industrial and financial policies, while human capital-related market failures can limit the supply of skilled workers from low-productivity sectors to high-productivity sectors.

Our review of the factors that constrained structural transformation in Asian countries suggests that both government failures and market failures have been at work in several of these countries. The most important government failure has been the lack of land reform in Southeast and South Asian countries. The most important market failure has been in human capital formation, especially in creating a skilled workforce that is necessary for technological upgrading and modern manufacturing activities. Other government failures such as stringent labor regulations and a lack of portable social insurance schemes that eased the mobility of labor have also played a role in limiting structural transformation in developing Asian countries. Market failures such as coordination of investment and credit market imperfections have not been addressed in Southeast Asia and South Asia as well as they have been in Northeast Asia, largely due to the lack of capacity of the state to undertake successful interventionist policies.

We also reviewed case-study evidence of three Asian countries—the PRC, India, and Thailand—which have seen rapid growth but not structural transformation to the same degree. The evidence suggests that different factors are at work to explain the slow rate of structural transformation in the PRC, India, and Thailand. In the case of the PRC, the *hukou* system created an artificial barrier to the movement of labor from rural to urban areas, and can be the single most important factor behind the surprisingly slow rate of structural transformation in the PRC, given its high rates of manufacturing-led economic growth. In addition, government policies that attempted to bias investment toward capital-intensive industries may also have played a role in limiting the demand for labor in the manufacturing sector, and thereby, inhibit structural transformation in the country. There have been several reforms in the *hukou* system in recent years—in 2014, the Chinese government announced that 0 *hukou* transfer limits in small cities will be removed, restrictions in medium-sized cities relaxed, and new qualifications set for larger cities (Goodburn 2014). However, these reforms represent a modification of the *hukou* system than its abolition as residence certificates will still be required for all Chinese citizens moving to new areas, and although it will be easier for migrants to settle in smaller cities, strict requirements will continue to make it difficult to settle in the PRC's megacities (Goodburn 2014). This suggests that while the constraint that the *hukou* system poses to the PRC's process of structural transformation has eased somewhat, it has not been completely removed.

With respect to India, the review of the evidence suggests that not just one factor, but a range of factors are important in explaining India's slow rate of structural transformation. The most important among these factors are stringent labor regulations, burdensome land acquisition policies, and market failures related to human capital formation and skill development of the labor force. Given the very large share of workers employed in Indian agriculture and the need to increase the rate of structural transformation in the economy, a strong focus on easing government policies relating to the functioning of labor and land markets is necessary. In addition, there is a need to reform the educational system, especially relating to the quality of schooling and skill formation in the workforce.

Thailand's weak record in structural transformation can be mostly attributed to lack of effective land reforms and low rates of educational attainment among the rural poor in remote regions of the country. There has been a lack of an effective industrial policy that has built the capabilities of domestic firms and allowed the manufacturing sector to move toward products with greater

technological spillovers. In Thailand's case, there is a need for educational policies that address the skills shortages in the Thai workforce as well as effective industrial policies that can accelerate the rate of growth of local Thai firms.

The overall policy message from our review of the evidence is that governments in developing Asian countries need to enact a set of complementary policies that can act both on the demand side and supply side of labor, so as to accelerate the pace of structural transformation. This would imply concerted government action across a range of policies—labor policies, land policies, industrial and financial policies, educational policies—rather than a narrow focus on one or two policy domains.

REFERENCES*

- Agarwal, P., S. Gokarn, V. Mishra, K. S. Parikh, and K. Sen. 1995. *Economic Restructuring in East Asia and India: Perspectives on Policy Reforms*. London: Macmillan.
- . 2000. *Policy Regimes and Industrial Competitiveness: A Comparative Study of East Asia and India: Perspectives on Policy Reforms*. London: Macmillan.
- Aghion, P., R. Burgess, S. J. Redding, and F. Zilibotti. 2008. The Unequal Effects of Liberalization: Evidence from Dismantling the License Raj in India. *American Economic Review*. 98 (4). pp. 1397–412.
- Ahluwalia, I. J. 1991. *Productivity and Growth in Indian Manufacturing*. Delhi: Oxford University Press.
- Ahsan, R., and D. Mitra. 2014. Can the Whole Actually be Greater than the Sum of its Parts? Lessons from India's Growing Economy and its Evolving Structure. Mimeo.
- Ahsan, A., C. Pages, and T. Roy. 2008. Legislation, Enforcement and Adjudication in Indian Labor Markets: Origins, Consequence and the Way Forward. In D. Mazumdar and S. Sarkar, eds. *Globalization, Labor Markets and Inequality in India*. UK: Routledge.
- Alfaro, L., and A. Chari. 2009. India Transformed? Insights from the Firm Level 1988–2005. NBER Working Paper No. 15448.
- Bah, E. 2011. Structural Transformation Paths Across Countries. *Emerging Markets Finance and Trade*. 47. pp. 5–19.
- Ban, S. H., P.-I. Mun, and D. H. Perkins. 1980. *Rural Development*, Cambridge: Council on East Asian Studies, Harvard University.
- Banerjee, A., and E. Duflo. 2004. What Do Banks (Not) Do? *Economic and Political Weekly*. 39 (38). pp. 4212–13.
- Bardhan, P. 1984. *The Political Economy of Development in India*. Oxford: Basil Blackwell.
- Berry, A., and W. Cline. 1979. *Agrarian Structure and Productivity in Developing Countries*. Geneva: International Labour Organization.
- Bollard, A., P. Klenow, and G. Sharma. 2013. India's Mysterious Manufacturing Miracle. *Review of Economic Dynamics*. 16 (1). pp. 59–85.
- Botero, J., S. Djankov, R. La Porta, F. Lopez-Di Silanes, and A. Shleifer. 2004. The Regulation of Labor. *The Quarterly Journal of Economics*. 119 (4). pp. 1339–82.
- Besley, T., and R. Burgess. 2000. Land Reform, Poverty Reduction and Growth: Evidence from India. *The Quarterly Journal of Economics*. 117 (4). pp. 389–430.

* ADB recognizes “China” as the People’s Republic of China, “Korea” as the Republic of Korea, and “Vietnam” as Viet Nam.

- . 2004. Can Labor Regulation Hinder Economic Performance? Evidence from India. *The Quarterly Journal of Economics*. 119 (1). pp. 91–134.
- Bhagwati, J. N. 1993. *India in Transition: Freeing the Economy*. Oxford: Clarendon Press.
- Burgess, R. 2004. Mao's Legacy: Access to Land and Hunger in Modern China. STICERD Working Paper.
- Cai, F., Y. Zhao, and A. Park. 2008. The Chinese Labor Market in the Reform Era. In L. Brandt and T. Rawski, eds. *China's Great Economic Transformation: Origins, Mechanism, and Consequences*. Cambridge: Cambridge University Press.
- Campos, N., and J. Nugent. 2012. The Dynamics of the Regulation of Labor in Developing and Developed Countries since 1960. IZA Working Paper No. 6881.
- Chan, K., and L. Zhang. 1999. The Hukou System and Rural-Urban Migration in China: Processes and Changes. *The China Quarterly*. 160 (X). pp. 818–55.
- Commission for Growth and Development. 2008. *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. Washington, DC.
- Dabla-Norris, E., A. Thomas, R. Garcia-Verdu, and Y. Chen. 2013. Benchmarking Structural Transformation across the World. IMF Working Paper 13/176.
- Doner, R. 2009. *The Politics of Uneven Development: Thailand's Economic Growth in Comparative Perspective*. Cambridge: Cambridge University Press.
- Dougherty, S. 2009. Labor Regulation and Employment Dynamics at the State Level in India. OECD Economics Department Working Papers No. 624.
- Dreze, J., and A. Sen. 2013. *An Uncertain Glory: India in its Contradictions*. London: Allen Lane.
- Duarte, M., and D. Restuccia. 2010. The Role of Structural Transformation in Aggregate Productivity. *Quarterly Journal of Economics*. 125 (1). pp. 129–73.
- Ellis, P., and M. Roberts. 2016 *Leveraging Urbanisation in South Asia*. Washington, DC: World Bank.
- Fallon, P. R., and R. E. B. Lucas. 1993. Job Security Regulations and the Dynamic Demand for Industrial Labor in India and Zimbabwe. *Journal of Development Economics*. 40 (2). pp. 241–75.
- Felipe, J., C. Dacuycuy, and M. Lanzafame. 2014. The Declining Share of Agricultural Employment in the People's Republic of China. ADB Economics Working Paper Series No. 419.
- Felipe, J., A. Mehta, and C. Rhee. 2015. Manufacturing Matters...but It's the Jobs that Count. Mimeo.
- Ghatak, M. 2013. Land Reforms. In K. Basu, ed. *The Oxford Companion to Economics in India*. Delhi: Oxford University Press.

- Ghatak, M. and P. Ghosh. 2011. The Land Reform Bill: A Critique and a Proposal. *Economics and Political Weekly*. 46 (41). pp. 65–72.
- Gokarn, S. 1995. Korea. In P. Agarwal, S. Gokarn, V. Mishra, K. S. Parikh, and K. Sen. *Economic Restructuring in East Asia and India: Perspectives on Policy Reforms*. London: Macmillan.
- Goldberg, P., A. Khandelwal, N. Pavnik, and P. Topalova. 2010. Multi-Product and Product Turnover in the Developing World: Evidence from India. *Review of Economics and Statistics*. 92 (4). pp. 1042–49.
- Goodburn, C. 2014. The End of the *Hukou* System? Not Yet. China Policy Institute Working Paper No. 4. University of Nottingham.
- Gupta, P., R. Hasan, and U. Kumar. 2009. Big Reforms but Small Payoffs: Explaining the Weak Record of Growth and Employment in Indian Manufacturing. In S. Bery, B. Bosworth, and A. Panagariya, eds. *India Policy Forum*. 5 (1). pp. 59–123.
- Hasan, R., D. Mitra, and A. Sundaram. 2013. What Explains the High Capital Intensity of Indian Manufacturing? *Indian Growth and Development Review*. 6 (2). pp. 212–41.
- Hayami, Y., A. Quisumbing, and L. Adriano. 1990. *Toward an Alternative Land Reform Paradigm: A Philippine Perspective*. Quezon City: Ateneo de Manila University Press.
- Heckman, J., and C. Pagés. 2004. The Cost of Job Security Regulations: Evidence from Latin American Labor Markets. NBER Working Paper No. 7723.
- Herrendorf, B., R. Rogerson, and A. Valentinyi. 2013. Growth and Structural Transformation. NBER Working Paper No. 18996.
- Herring, Ronald J. 1983. *Land to the Tiller: The Political Economy of Agrarian Reform in South Asia*. New Haven: Yale University Press.
- Hill, H. 1996. *The Indonesian Economy since 1966: Asia's Emerging Giant*. Cambridge: Cambridge University Press.
- Hsieh, C., and P. J. Klenow. 2014. The Life Cycle of Plants in India and Mexico. *Quarterly Journal of Economics*. 129 (3). pp. 1035–84.
- Jomo, K. S. 2001. Rethinking the Role of Government Policy in Southeast Asia. In J. Stiglitz and S. Yusuf, eds. *Rethinking the East Asian Miracle*. Oxford: Oxford University Press.
- Kochhar, K., U. Kumar, R. Rajan, A. Subramanian, and I. Tokatlidis. 2006. India's Pattern of Development: What Happened, What Follows? *Journal of Monetary Economics*. 53 (1). pp. 981–1019.
- Khoman, S. 1993. Education Policy. In P. Warr, ed. *The Thai Economy in Transition*. Melbourne: Cambridge University Press.
- Krongkaew, M. 1995. *Thailand's Industrialisation and its Consequences*. London: Macmillan.

- Lin, J. Y. 2012. *New Structural Economics: A Framework for Rethinking Development and Policy*. Washington, DC: World Bank.
- Lin, J. Y., and C. Monga. 2010. Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change. World Bank Policy Working Paper No. 5313.
- Lin, J. Y., and Y. Yao. 2001. Chinese Rural Industrialisation in the Context of the East Asian Miracle. In J. Stiglitz and S. Yusuf. *Rethinking the East Asian Miracle*. Oxford: Oxford University Press.
- Lucas, Robert E. Jr. 1988. On the Mechanics of Economic Development. *Journal of Monetary Economics*. 22 (1). pp. 3–42.
- Manning, C. 2014. Labor Market Regulation and Employment during the Yudhoyono Years in Indonesia. In P. Athukorala, A. Patunru, and B. Resosudarmo, eds. *Trade, Development and Political Economy in East Asia, 2014*. Singapore: ISEAS Publishing.
- Mazumdar, D., and S. Sarkar. 2008. *Globalization, Labor Markets and Inequality in India*. Basingstoke: Routledge.
- . 2013. *Manufacturing Enterprises in Asia: Size Structure and Economic Growth*. London and New York: Routledge.
- McMillan, M., and D. Rodrik. 2014. Globalization, Structural Change and Productivity Growth with an Update on Africa. *World Development*. 63. pp. 11–32.
- Mishra, V. 1995. Indonesia. In P. Agarwal, S. Gokarn, V. Mishra, K. S. Parikh, and K. Sen. *Economic Restructuring in East Asia and India: Perspectives on Policy Reforms*. London: Macmillan.
- Mody, A., A. Nath, and M. Walton. 2011. Sources of Corporate Profits in India: Business Dynamism or Advantages of Entrenchment? In S. Bery, B. Bosworth, and A. Panagariya, eds. *India Policy Forum 2010–2011*. Washington, DC: Brookings Institute.
- Moise, E. 1983. *Land Reform in China and North Vietnam*. Chapel Hill: University of North Carolina Press.
- Naughton, B. 2007. *The Chinese Economy: Transitions and Growth*. Cambridge: The MIT Press.
- Pack, H. 2001. Technological Change and Growth in East Asia: Macro versus Micro Perspectives. In J. Stiglitz, and S. Yusuf, eds. *Rethinking the East Asian Miracle*. Oxford: Oxford University Press.
- Panagariya, A. 2008. *India: The Emerging Giant*. New York: Oxford University Press.
- Park, A. 2015. Labor Regulation, Enforcement, and Employment: Lessons from China. Presentation to Jobs for Development Conference. ICRIER and World Bank. December.
- Park, A., F. Cai, and Y. Du. 2010. Can China Meet Her Employment Challenges? In J. Oi, S. Rozelle, and X. Zhou, eds. *Growing Pains: Tensions and Opportunities in China's Transformation*. Stanford: Stanford Asia-Pacific Research Center.

- Park, D., S. Y. Lee, and A. Mason. 2012. *Aging, Economic Growth and Old Age Pension in Asia*. Cheltenham: Edward Elgar and ADB.
- Pasadilla, G. 2011. *Social Security and Labor Migration in ASEAN*. Research Policy Brief No. 34. Tokyo: ADBI.
- Perkins, D. 2001. Industrial and Financial Policy in China and Vietnam: A New Model or a Replay of the East Asian experience. In J. Stiglitz and S. Yusuf. *Rethinking the East Asian Miracle*. Oxford: Oxford University Press.
- . 2013. *East Asian Development: Foundations and Strategies*. Cambridge: Harvard University Press.
- Pratham. 2006. *Read India Report 2006*. www.pratham.org
- Putzel, J. 2000. Land Reforms in Asia: Lessons from the 21st Century. LSE – DESTIN Working Paper No. 4.
- Quality of Government database. <http://qog.pol.gu.se/data>
- Ramsay, J. 1982. The Limits of Land Reforms in Thailand. *The Journal of Developing Areas*. 16 (2). pp. 173–96.
- Reerink, G., and L. Bakker. 2015. Indonesia's Land Acquisition Law: Toward Effective Protection of Land Grabbing? Mimeo.
- Rodrik, D. 2004. Industrial Policy for the Twenty-First Century. Mimeo. <http://www.hks.harvard.edu/fs/drodrik/Research%20papers/UNIDOSep.pdf>
- Saha, B., K. Sen, and D. Maiti. 2013. Trade Openness, Labor Institutions and Flexibilisation: Theory and Evidence from India. *Labor Economics*. 24. pp. 180–95.
- Sen, K. 1995. Thailand. In P. Agarwal, S. Gokarn, V. Mishra, K. S. Parikh, and K. Sen, eds. *Economic Restructuring in East Asia and India: Perspectives on Policy Reforms*. London: Macmillan.
- . 2009. *Trade Policy, Inequality and Performance in Indian Manufacturing*. London: Routledge.
- . 2014. The Indian Economy in the Post-Reform Period: Growth without Structural Transformation? In D. Davin and B. Harriss-White, eds. *China and India: Pathways of Economic and Social Development*. Oxford: Oxford University Press.
- Sen, K., and M. Tyce. 2016. The Political Economy of Growth in Malaysia and Thailand. Mimeo.
- Sen, K., and R. Vaidya. 1997. *The Process of Financial Liberalization in India*, Delhi: Oxford University Press.
- Solinger, D. 2014. The Modalities of Geographical Mobility in China and their Impact. In D. Davin and B. Harriss-White, eds. *China and India: Pathways of Economic and Social Development*. Oxford: Oxford University Press.

- Stiglitz, J. 1996. Some Lessons from the East Asian Miracle. *World Bank Research Observer*. 1 (2). pp. 151–77.
- Stiglitz, J., and A. Weiss. 1981. Credit Rationing in Markets with Imperfect Information. *American Economic Review*. 71 (3). pp. 393–410.
- Stiglitz, J., and S. Yusuf. 2001. *Rethinking the East Asian Miracle*. Oxford: Oxford University Press.
- Studwell, J. 2013. *How Asia Works: Success and Failure in the World's Most Dynamic Region*. London: Profile Books.
- Suryahadi, A., W. Widyanti, D. Perwira, and S. Sumarto. 2003. Minimum Wage Policy and Its Impact on Employment in the Urban Formal Sector. *Bulletin of Indonesian Economic Studies*. 39 (1). pp. 29–50.
- Tacoli, C., G. McGrahan, and D. Satterwhaite. 2015. *Urbanisation, Rural-Urban Migration and Urban Poverty*. London: IIED.
- Tambunlertchai, S. 1993. Manufacturing. In P. Warr, ed. *The Thai Economy in Transition*. Melbourne: Cambridge University Press.
- UNIDO. 2013. *Sustaining Employment Growth: The Role of Manufacturing and Structural Change, Industrial Development Report 2013*. Geneva.
- Varshney, A. 1999. Mass Politics or Elite Politics: India's Reforms in Comparative Perspective. In J. D. Sachs, A. Varshney, and N. Bajpai, eds. *India in the Era of Economic Reforms*. Delhi: Oxford University Press.
- Warr, P. 1993. The Thai Economy. In P. Warr, ed. *The Thai Economy in Transition*. Melbourne: Cambridge University Press.
- Wood, A., and M. Calandrino. 2000. When the Other Giant Awakens: Trade and Human Resources in India. *Economic and Political Weekly*. 30 (52/53). pp. 4677–94.
- World Bank. World Development Indicators. <http://data.worldbank.org/data-catalog/world-development-indicators>
- . 2012a. *More and Better Jobs for South Asia*. Washington, DC.
- . 2012b. *Learning Outcomes in Thailand: What Can We Learn from International Assessments?* Washington, DC.
- . 2013. *World Development Report: Jobs*. Washington, DC.
- . 2014. *Doing Business in Thailand*. Washington, DC.
- . 2015. *Doing Business Report*. Washington, DC.

The Determinants of Structural Transformation in Asia: A Review of the Literature

Structural transformation—the movement of workers from low productivity to high productivity activities—is an essential ingredient of inclusive growth. This paper reviews the evidence on why the pace of structural transformation has differed widely across countries in Asia, with a specific focus on the People’s Republic of China, India, and Thailand. It argues that both government failures relating to the functioning of labor, land, and product markets, and market failures relating to coordination of investment, credit market imperfections, and human capital formation have been the primary causes of the slow pace of structural transformation in several Asian countries. The paper suggests that a specific focus is needed to reform policies that impede the functioning of labor, land, and product markets as well as on strengthening industrial and education policies to address specific market failures around investment coordination and human capital formation.

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