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Technology Adoption In Rent Seeking Economies

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Abstract

The issues of development in developing countries are twofold. First, growth and development requires technological upgrading and industrial capability-building. Second, embedded within each developing economy is a rent-seeking society, which operates both formally and informally. This paper assesses each of the two issues in turn by presenting an overview of key contributions in the literature on the institutional economic analysis of technological change, learning, rents, and rent-seeking. It first reviews the neoclassical literature on technology and growth, which was largely derived from Solow's model on growth and technical change. The following section presents alternative approaches, which challenge Solow's and others' assumptions by pointing out that the appropriation of knowledge is neither automatic nor costless. It is in this context that a state's intervention in the forms of industrial policies is arguably essential for catching up. Next, the paper surveys the theoretical debate on rents and rent-seeking especially in relation to the issue of learning. This includes the notable research of Joseph Stiglitz, Ricardo Hausmann, Dani Rodrik, and Mushtaq Khan. Finally, considerations about the roles of politics and informal institutions, especially the research of Douglas North and colleagues, Ha-Joon Chang, Ali Cheema and Mushtaq Khan, in solving the critical two-fold problem of development are presented. This paper assents to the heterodox economists' assertion that, under certain conditions, rents could be value-enhancing and thus, effective development strategies should take into consideration the creation and management of value-enhancing rents.

Keywords: developing countries, institutions, rents, rent-seeking, rent management, technological adoption, learning and innovation.

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1.1. Introduction

The issues of development in developing countries are twofold. First, growth and development requires technological upgrading and industrial capability-building (Lall, 2004). Second, embedded within each developing economy is a rent-seeking society, which operates both formally and informally. Rents and rent-seeking in developing countries are ubiquitous because the political, institutional, and market structures are such that a state plays a direct role in creating and implementing them while simultaneously being under the pressure of various interests that seek rents (Chang & Cheema, 2002; Khan, 2000b; Medema, 1991; Mueller, 1989). The first element is necessary for growth and development while the later either enhances or deters industrial upgrading and technological adoption.

This paper assesses each of the two issues in turn by presenting an overview of key contributions in the literature on the political economic analysis of technological change, learning, rents, and rent-seeking. The purpose of this exercise is to construct a theoretical framework to examine the critical problems of technological upgrading and capability-building in the industrial sector of developing countries from a rent and rent management perspective. In this paper, rent policy[1] is defined as a policy that creates rent formally for the purpose of promoting development or informally to be extractive. Based on this definition, rent policy often emerges from formal political and institutional mechanisms. Extraction and redistribution could be the unintended effects of this rent policy.

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[1] Generally, rent policy is any government policy that creates rent. Some portion of the rent policy may target market failures, though not necessarily related to an industrial sector. Where rent policy does target the industrial sector or economic development, it is thus a form of industrial policy. The portion of the rent policy does not correct market failures are devised for redistributive or extractive purpose, and they are damaging, or growth-reducing, rents. This is a general definition of rent policy. In this paper, rent policy is defined as developmental and not created for redistributive purpose. However, rents that emerge through various mechanisms could produce either growth-reducing or growth-enhancing outcomes.

This author argues that in order to achieve growth through technological upgrading and capability-building, rent policies must satisfy the political and institutional conditions for effective rent management under the pressure of rent-seeking. Technological upgrading is defined as any type of technical learning, as well as technological transfers, adoption, adaptation and innovation. Capability-building in productive activities is defined as the enhancement of organizational, technological and managerial capabilities relevant for producing higher quality products or similar products at lower cost. Thus, capability-building is related to the organizational and functional levels, as well as to individuals, groups, and institutions. In this context, industrial policy is a subset of rent policy, although the latter may be created for a purpose other than supporting the industrial sector. Subsequently, an effective rent management system is one that creates the incentives and pressure for technical learning and upgrading. More importantly, this paper maintains that these conditions are not limited to the formal political and institutional arrangements within a state, but are taken from a wider context of the configuration between politics, institutions, and the structure and the boundaries between the market and the firms.

To this end, this paper is organized into four sections. Section 1.2 assesses the characteristics of technological upgrading in a development context. It first reviews the neoclassical literature on technology and growth, which was largely derived from Solow's (1956, 1957) model on growth and technical change. Second, alternative approaches to technological transfers and the appropriation of knowledge are presented. These approaches challenge Solow's and others' assumptions by pointing out that the appropriation of knowledge is neither automatic nor costless. It is in this context that a state's intervention in the forms of industrial policies is arguably essential for catching up. Section 1.3 surveys the theoretical debate on rents and rent-seeking with special attention on technological upgrading and capability-building at the firm and industry levels. This author agrees with the heterodox economists' assertion that, under certain conditions, rents could be value-enhancing (Chang & Cheema, 2002; Khan, 2000b; North, Wallis, Webb, & Weingast, 2007) and thus, effective development strategies should take into consideration the creation and management of value-enhancing rents (Khan, 2000b).

Section 1.4 first presents alterative approaches to the issue of rent and rent-seeking. It then discusses the theoretical analysis on some of the most critical problems in development, especially as related to the issue of learning. This includes the notable research of Joseph Stiglitz (1989, 2013b), Ricardo Hausmann and Dani Rodrik (2003; 2008), and Mushtaq Khan (2000a, 2000b, 2009, 2011). The discussion uses the analysis of market failures as a point of departure. Finally, considerations about the roles of politics and informal institutions, especially the research of Douglas North and colleagues (2007; 2006), Ha-Joon Chang (1999), Ha-Joon Chang and Ali Cheema (2002) and Mushtaq Khan (1995, 2000a, 2011), in solving the critical two-fold problem of development identified at the start of this paper.

All these strands of literature clearly do not constitute a unified school of thought. Nevertheless, they present strong analytical complementarities and share a common belief that the analysis of technological upgrading and capability-building for developing countries should be based not only on economic theories on technology, growth, and development, but also on a wider understanding the formal and informal dynamics of rent-seeking and rent management processes. This literature provides useful insights in examining the determinants of technological upgrading and capability-building in the industrial sector of developing countries from a rent management perspective.

1.2. Characteristics of Technological Adoption, Capability-building, and Growth in Development Context

Economic and industrial development can largely be viewed as a process of technological "catch up," in which firms in developing countries learn to master new technologies of production already in use in more advanced economies. In this sense technological catch up is seen as a primary instrument that closes the technological gap between developing countries and the international technological frontier. By and large, this process facilitates developing countries to increase productivity levels, strengthen international competitiveness, and enter new markets or market segments for higher value-added goods (Warren, 2007).

The leading roles of technology and technological progress for economic growth and development are widely acknowledged in economics literature. In "An Inquiry into the Nature and Causes of the Wealth of Nations," Adam Smith identified the gains to be made from the division of labour and production specialisation. Smith highlighted the benefits derived from a specific form of technological progress: organizational change. This change is also central to Marx's (1906) and in a somewhat similar way Schumpeter's (1942) analysis of the dynamics of capitalism, where innovation and competition drive processes of capitalist accumulation and growth. Similarly, it is also instrumental in Kaldor's (1957; 1967) examination of industrial growth, capital accumulation, and economic development. Even neoclassical theory, which is generally more concerned with allocative efficiency at the exclusion of other types of efficiency, defined technological change, as articulated by Solow (1957), to be central to the growth processes.

This section first provides the neoclassical approach to technology adoption and growth, which is followed by alternative views to the neoclassical approach. The final section presents a paradigm shift from the neoclassical perspective of technological change to the theory of rents and rent management. This author argues that the understanding of rent management mechanisms—defined as the configuration of politics, institutions, and industry organisations that produce the rent outcomes—is critical to improving technological adoption and upgrading in developing countries, because this understanding provides insights into how rent policies can succeed under the pressure of rent-seeking in specific development contexts.

1.2.1. Neoclassical Debates on Technology and Growth

Over the past 30 years, the debate on technological change and industrialisation in the context of development has largely been dominated by neoclassical thinking on economic development. Key policy and academic documents, such as the World Bank's "World Development Reports 1987: Industrialization and Foreign Trade" and World Development Reports 1991: The Challenge of Development 1991" or Anne Krueger's (1974, 1998) work on trade and development, continue to provide the basic theme for neoclassical analysis on technology and industrial development. This strand of literature presents firms as optimising agents with perfect information. Firms are also deemed to function in perfectly competitive market environments, including markets for technological goods, among others, with price signals that are accurately set by the market. In the absence of policy restrictions, it is argued, technology is taken to be freely available across countries and costless to apply within the firm.

From a growth perspective, neoclassical thinking, notably presented by Solow illustrates the process of technological and economic development as essentially one of "automatic" convergence towards an internationally given technological frontier (in Warren, 2007). In this context, countries at different stages of development are to converge over time in their home per capita levels; that is, absolute convergence where adjusting for population growth and saving rates. Diminishing returns on factors of production is presumed.

With regard to the role of trade and international factor movements, the assumption is that the most efficient and appropriate technologies from advanced countries are free and available for developing countries to adopt at each and every stage, given their relative factor endowments. It is thus expected that it is only a matter of time before developing countries catch up with more advanced economies in technological and economic terms. When it appears that different economies grow at different growth rates that are not consistent with the absolute convergence theory, the inconsistency is considered to be the consequence of distortions induced by industrial or interventionist policies. In addition, differences in performance are regarded as the result of policy barriers which slow technological trickledown effects from technological advanced countries to developing economies (Warren, 2007). In other words, government intervention deterred the "automatic" transfer of technology from advanced to developed countries.

From this perspective, neoclassical thinking asserts that technological progress in developing countries can be achieved by improving the channels and mechanisms[2] through which advanced technologies in developed economies can reach developing

[2] The term 'mechanism' describes the formal and informal process that institutions implement and sustain (North et al., 2007).

economies. In other words, developing countries should focus on improving the incentives for the transfer of technologies. To achieve these objectives, the neoclassical literature identified four main mechanisms that promote technological catching up and development: (1) trade, (2) market (internal and external) deregulation leading to increased competition, (3) foreign direct investment, and (4) macroeconomic stability. These mechanisms are largely reflected in the Washington Consensus agenda led by the World Bank and the International Monetary Fund in the late 1980s.

The focus on these four mechanisms as avenues of technological upgrading for developing countries reflects the assumption that technology can be unconditionally imported from abroad via trade and FDI. However, over-regulation, interventionist policies, and macroeconomic instability are barriers to technological adoption in developing countries because they deter investment and the full development of market forces. At the policy level, neoclassical views on the process of development, including its technological dimension, have provided the basis for the implementation of structural adjustment and macroeconomic stabilisation across the developing world, and most notably embedded in the Washington (and Post-Washington) Consensus and the International Monetary Fund's financial reform agenda.

1.2.2. Critics of the Mainstream Approach

There are a number of shortcomings in the neoclassical economic approach to technology and growth. First, the neoclassical primary concern is allocative efficiency at the exclusion of other and perhaps more important types of efficiency. Neoclassical economics assume that by construction, market mechanism is efficient and nonmarket mechanisms are inefficient (Fine, 1997). This view is far from reflecting the reality, especially in developing countries where distorted price signals and market failures are much more pervasive and damaging than in developed countries (Fine, 1997; Khan, 2000b; Rodrik, 1995, 2004b; Stiglitz, 1989, 1994). Second, the neoclassical approach, which largely focuses on allocation of resources at the margins in a competitive environment, provides little insight in response to a number of fundamental questions concerning: (1) how to mobilise and deploy new resources and to create new capacities;

(2) how finance, trade, employment, and the exchange and interest rates are associated with industrial strategy; and (3) how an industrial strategy fits in with the development of the economy as a whole (Fine, 1997).

Third, transfers of technology from FDI are not voluntary and automatic. Amsden (2009) points out that most cases of accelerated accumulation of technological and managerial capabilities have historically occurred within domestic firms, not within subsidiaries of foreign-owned firms operating in a developing country. This is because "even when MNCs [multinational corporations] are an important source of capital investment, they often carry relatively limited technology transfer, with the most tacit forms of knowledge and a good deal of R&D activities being kept in developed countries" (Cimoli, Dosi, & Stiglitz, 2009a, p. 8).

Finally, new (endogenous) growth theory dismisses the standard neoclassical proposition in two fundamental ways. First, technology is endogenous, and thus different firms and countries may operate under significantly different technological conditions and costs (Fine, 1997). Second, given the determinants of the returns on capital, the direction of investment decisions is no longer solely determined by its relative scarcity, but also by labour, education, and skills (Fine, 1997).

Given the simplistic and impractical assumptions put forward by Solow's growth model, policy agendas set by neoclassical thinking are not achievable. More importantly, a partial move towards such policies advocated by the New Washington Consensus[3] can be damaging for countries because it does not solve the pressing issues of development, such as market externalities and political, financial, and fiscal instabilities (Rodrik, 2004b). In addressing these shortcomings, the heterodox view reviewed in the next section asserts that historically and realistically technological upgrading takes place in vastly different ways from the processes asserted by the neoclassical literature.

1.2.3. Alternative View: Technological Capability and the Appropriation of Knowledge

[3] Rodrik (2006) named it the "Augmented Washington Consensus."

Countering neoclassical thinking, the alternative view points out the idiosyncratic, context-dependent nature of firm-level dynamics. This view calls attention to the cost of adoption and efficient use of technologies, which is difficult to adopt and adapt at the firm level (Cimoli, Dosi, & Stiglitz, 2009b). In addition, the alternative literature stresses the prevalence of market failures facing the development of key technological inputs, such as skills and capability, as well as market failures in the diffusion of technological and business development knowledge throughout the economy (Cimoli, et al., 2009a; Hausmann & Rodrik, 2003; Khan, 2009; Stiglitz, 1989).

Economists who advocate state intervention in reducing the technology gap in developing countries point to the fact that learning and technology adoption requires a great deal of effort, financial resources, and time (Chang & Cheema, 2002; Hausmann & Rodrik, 2003; Khan, 2000b, 2009; Rodrik, 2007). This is because learning new tacit knowledge requires numerous trials of learning-by-doing, which takes time and effort to adapt to the new technology and to put the new skills into use. In addition, a distinguished feature of developing economies is that significant effort must be devoted to the adaptation and improvement of products and to develop competitiveness in operational management and production organisation.

There is a great deal of literature, which provides theoretical and empirical evidences on the role of domestic firms in adopting new technology. Metcalfe (1994) Evenson and Westphal (1995), Deraniyagala (2000a, 2000b) argue that domestic firms in developing economies have to play a more active role in the process of technological development because efficient use of foreign technologies involves small product developments, modifications of production machinery, and so on. More specifically, Lall (1992) maintains that technological change in developing countries takes place mostly in the forms of importation and incorporation of foreign technologies that improve production processes and firms' capability. To achieve this, firms operating in developing economies must be skilled and technologically capable if they are to make appropriate use of these foreign technologies and engage in efficient production - two elements that are mostly insufficient in developing economies.

In a context where international comparative advantages are no longer determined only by factor endowments but also by the level of technological competence and progress, these issues are particularly significant. This is because in developing countries the development of technological capabilities in sectors associated with higher learning-by-doing, value addition, or complex manufacturing could contribute to greater industrial deepening and economic growth through spillovers. Given these considerations, it is clear that the question of how firms in developing countries engage in technological efforts and how these efforts impact economic performance cannot simply be reduced to a problem of accessing foreign technologies, nor to a narrow reading of the role played by market competition as an incentive mechanism for technological upgrading, as posited in the neoclassical literature.

From this perspective, across-the-board liberalisation polices, if not accompanied by efforts to upgrade local technological capabilities, may lead to a situation where developing countries only reinforce existing advantages in simple, low-tech activities where they possess comparative advantages (Warren, 2007). An increase in foreign competition within the domestic market has also been known to discourage local firms from investing time and financial resources into new technology, instead opting to pursue low-cost production activities (Ohno, 2008). Given challenges in technology and capability development, as well as the existence of market failures, development economists generally argue that developing countries must employ industrial policies to remove market externalities that constrain learning and to support technological adoption and innovation that go beyond the policy framework put forward by neoclassical theories.

1.2.4. From Trade Liberalisation and Industrial Policy Paradigms to Rents and Rent Management

Underlying Solow's and the neoclassical discussion of the process of technological and economic growth is a presumption that the process of technological upgrading is automatic and that the role of the state should largely be limited to promoting market liberalisation, free trade, macro-stability, and incentives for foreign direct investment. However, neoclassical theories do not provide the methodological tools for the state to cope with its important role during liberalisation or which policy instrument is appropriate to correct the pervasive market failures that constrain technological upgrading and learning in developing countries. Here, the fundamental issue is that political and economic interests, which create and seek rents through policy measures (Khan, 2000a; North, et al., 2007), are strong determinants of a state's ability and strategy to undertake meaningful and effective reform. In addition, Fine (1997) points out that politics and its arrangement within a state apparatus strongly correlates with socioeconomic conditions and the way the state and the private sector interact.

> Interest groups operate through the state, such that they influence, and are influenced by state strategies and policy. … Markets do not mediate adequately between these different interest groups because they are dominated by the stronger ones; and market-friendly theories have little to contribute about this problem because they are based on the assumption that economic agents are atomistic and therefore they assume away political power or only deal with it within the narrow boundaries of imperfect competition and government failure (Fine, 1997, p. 7).

While the technology-capability literature provides valuable insights into the basic process of technology and industrial development, a full understanding of how these processes evolve in specific country contexts requires an in-depth assessment of the historical, political, and economic settings in which they take place. This understanding could be achieved through broader conceptualisation of rents, rent-seeking, and policies that promote technological change and economic transformation.

Recent contributions in the political economy of development analysis and by the more heterodox literature on rents, and rent-seeking provide a practical approach to assess and address some of the shortcomings in the neoclassical literature. This strand of literature provides an effective analytical tool to evaluate important development factors at play in the process of economic development, including its technological dimension. These factors include formal and informal political and institutional conditions and dynamics of the industry organisation. The next section provides a theoretical review on rent and rent seeking with the inclusion of research and discussions on market failures, political settlement, and informality in the context of development.

1.3. Rents and Rent Seeking in a Development Context

A distinction in rent-seeking activities between developed and developing countries is the rule of law, as well as the characteristics of their political and institutional structures. In developing countries the latter are more underdeveloped and incomplete as compared to developed countries. As a consequence, informal relationships, between organisations and with the state frequently take place behind formal institutional structures and relationships. As a result, rents—damaging or not—and rent-seeking are ubiquitous and more widespread in developing countries (Khan, 2009; Medema, 1991; Mueller, 1989). The literature on rents and rent-seeking increasingly include heated debates on the cost and effects of rents, especially in the context of development. In the next section, the analysis of rents and rent-seeking, based on the neoclassical school, are reviewed. The heterodox approach to rents and the potential of value-enhancing rents are discussed. This paper argues that an industrial policy is a form of rent policy[4] because any strategy that corrects or tries to correct market failures to boost industrial development inevitably changes the distribution of benefits to society and therefore inevitably creates rents (Khan, 2000a, 2009).

1.3.1. Neoclassical Definition and the Agenda to Eliminate Rents

The neoclassical literature, as part of the field of public choice theory, refers to rents as excess income and to rent-seeking expenditures as socially wasteful; and this latter expense diverts resources from productive activity (Buchanan, Tollison, & Tullock, 1980; Krueger, 1974; Murphy, Shleifer, & Vishny, 1989; Posner, 1975; Tullock, 1967). From this perspective, value-enhancing rents cannot exist. The suggested policy implication is that, in addition to liberalising an economy to achieve optimal growth

[4] In general, all industrial policy is rent policy but not all rent policy is industrial policy. Policies that create rents may have broader aims than promoting industrialisation; for instance, policies that focus on social development.

rates, developing countries should either have a set of institutions that minimise rent-seeking (Krueger, 1974) or avoid setting up institutions that create rents (Mueller, 1989, p. 245). When market externalities are said to trouble development (Stiglitz, 1989), this literature argues that no matter how imperfect the market is, more market is better than less (Fine, 2011). Thus, this strand of literature not only dismisses the role of rents based on the premise that a no-rent society is desirable for growth, it also presses for free market, free entry and exit, and accountable politics to deliver public goods: a combination that is virtually unachievable in developing countries. Subsequently, this position not only advocates for a good governance agenda, but also a market-driven growth agenda as well.

Using a definition that is consistent with standard neoclassical textbooks, Khan (2000b, p. 21) defines a rent as something a person gets if "he or she earns an income higher than the minimum that person would have accepted, the minimum being usually defined as the income in his or her next best opportunity." Similarly, Samuels and Mercuro (1984) define rents as "income received over and above the amount that would be received under a different institutional, or rights, arrangement" (p. 55). In this context, policy or legal change alters the pattern of resource allocation and exposures in society, thus creating rents. Further, the possibility of legal change presents the potential for a different allocation of rents since such a change alters rights of individual and groups. Hence, once there is the possibility and desirability of change in legal and economic relations, rent-seeking emerges (Medema, 1991).

The first generation of rent-seeking models argues that even if only mildly damaging rents exist, the net effect is crippling because of high rent-seeking costs (Kruger 1974, Posner 1975, Buchanan et. al. 1980, in Khan, 2000a). This is because as a state creates rents, economic actors pay money to seek these rents. Such expenditures are considered wasteful from society's perspective (Medema, 1991). Hence, one needs to include the costs associated with rent-seeking in the estimate of the total costs of rents. Subsequently, a cost combination model, which combines the established cost of monopolies with the high cost of rent-seeking was developed. Tullock (1967, 1980) contends that in a competitive rent-seeking model, the aggregate resources devoted to pursuing redistribution of wealth can equal the value of the rents to be distributed.

Furthermore, using the competitive market model, economists of this first generation show that a monopoly created and sustained through rents results in *lower* production output compared to the competitive market (in Mueller, 1989, pp. 229–246). This result signals inefficient allocation of resources and has a social cost that is the loss in social benefit to society: the deadweight welfare loss. Broadly speaking, the public choice literature basically focuses on these negative consequences of rent seeking. Buchanan and colleagues' (1980, p. 359) view is typical and influential:

> Rent seeking involves social waste. Resources that could otherwise be devoted to value-producing activity are engaged in competitive effort that determines nothing other than the distributive results. Rent seeking, as such, is totally without allocative value, although, of course, the initial institutional creation of an opportunity for rent seeking ensures a net destruction of economic value.

The inference of this analysis lends supports to the argument that there should not be any rents in the competitive market. This conclusion is deemed to be the goal for all developing countries because it maximises net social benefit given a set of resource endowments and technology (Khan, 2000a).

The second generation of the rent-seeking model reveals that under different institutional structures, the cost of rent-seeking could be substantially lower (Congleton, 1980; Rogerson, 1982). As a result, rent-seeking costs could fluctuate over a much wider range, so rent-seeking would not necessarily be expensive. In addition, models in this second generation relax some assumptions, especially one that assumes rent-seeking always results in the creation of value-reducing rents. Putting forward his theory of unproductive profit-seeking activities, Bhagwati points out that due to the intrinsic second-best consideration, there may not exist the positive shadow prices[5] on resources used in rent-seeking, implying that individuals' quest to secure biddable rents need not always entail socially wasteful activity (in Hillman & Katz, 1984). In addition,

[5] Shadow prices indicate the highest price a producer could pay for that added resource without becoming worse off overall from adding the resource.

Bhagwati's analysis also shows that rent-seeking outcomes can theoretically have a positive net-social value (in Hillman & Katz, 1984). Nevertheless, Bhagwati did not conclude that rents could therefore be value-enhancing.

1.3.2. Heterodox Approach and the Potential of Value Creating Rents

In contrast to the mainstream contention to rents and rent-seeking, the heterodox literature not only looks at costs, but also looks at the outcomes that rents produce, which arguably can be either negative or positive. Khan (2000b, p. 71) points out that "one problem in most of the rent-seeking literature has been that it has concentrated almost exclusively on the social costs of the resources used up in rent-seeking and very little on the different types of rents and outcomes which rent-seeking has created in different context." The author suggests that the overall effect of rent-seeking must be calculated using both the costs incurred and the rent outcomes created. Therefore, rents can be seen as possibly value-enhancing when the positive outcome outweighs the cost. Analysing rent-seeking from a property rights perspective, Khan (2000b) suggests that rent-seeking should be framed as a process that creates and alters rights, which can lead to a more efficient allocation of resources within an economy.

This assertion is partly based on earlier insights on how rent-seeking could create rents that are beneficial, which gained momentum in the 1990s, especially in view of the East Asian development model. Amsden (1989) and Wade (1990) point out that during their industrial development, both Taiwanese and Korean governments had allocated subsidies to promote industrialisation in socially beneficial manners. Similarly, Cowen and colleagues (1994) assert that "rent seeking can increase political effort and thereby increase social welfare" (p. 132). This is because when some public policies generate rents for public officials who otherwise have little incentive to spend time and effort proposing policies that benefit others, rent-seeking in politics can motivate officials to provide public goods (Cowen, et al., 1994). In making this assertion, the authors assume that public officials receive more rents the more they promote policies, and if these policies profit the public, they increase social welfare (Cowen, et al., 1994). In other words, if the policies are useful for the public, the usefulness of the policies can compensate for the costs of rent seeking.

In focusing on the role of rent-seeking in the creation of new markets for value-enhancing products, Abbott and Brady (1991) show that rent-seeking that succeeds in lifting regulatory restrictions and, thereby, creates markets that would not have existed but for rent- seeking could enhance, rather than diminish, welfare. This is particularly the case if the regulatory restriction retarded technological innovation. Removal of the restriction allows for firms and products that embrace new technologies and innovations to emerge and integrate into the production organisation. Here, the authors assume that inefficient restriction was maintained because it benefited specific groups that had interest in prolonging the restriction in order to sustain their rents.

As certain rents can be value-enhancing (especially those that promote learning and innovation), portraying rents and rent-seeking as value-reducing in every possible circumstance is misleading. Khan (2000b) argues that developing countries do not need an institutional structure that focuses on minimising rents but one that achieves a distribution of rents and a configuration of the rent-seeking process that is growth-enhancing. As a result, and in agreement with Khan, the analytical focus of this paper is on the institutions and politics that create value-enhancing rents and that support economic development.

1.4. Review of Rents Management as a Development Strategy

Many institutional and development economists agree that governments have a positive and catalytic role in promoting development in the economy, especially in the industrial sector, through technological upgrading and capability-building. This paper argues that developing countries need an effective rent management system; one that makes rents value-enhancing and developmental because they are associated with incentives and pressures that force learning and effort, despite the costs of rent-seeking activities. From this perspective, an effective rent management system requires economists to first identify the most important economic problems for development. Dani Rodrik (2004b) calls these problems the “binding constraints” facing development. To answer this query, the modern theory of market failures provides useful insights to clarify these problems, or constraints, to development. It should be pointed out, though, that most institutional and development economists differ as to what these are. This discussion is provided in sections 1.4.1.

Some development economists, notably North, Wallis and Weingast (2007; 2006), Chang (1999) and Chang and Cheema (2002), and Khan (1995, 2000a, 2000b, 2011) take the issue of development one step further by asking: "How do governments in developing countries solve the most important problem given that politics and informal institutions matter?" There are additional notable contributions in the literature that attempt to answer this political economy question, despite the diverse variation in approaches and analytical methods. This discussion is provided in sections 1.4.2 and 1.4.3.

This paper concludes the theoretical review by appealing for a better understanding of the mechanisms that manage rent and rent-seeking activities, going beyond the scope of the efficient and self-regulating market as well as the developmental state. These rent management mechanisms must also encompass (1) the political context of rent creation, allocation, and implementation, (2) the formal and informal institutions that create and manage the rent, and (3) the organisation of industry which affects the incentives and pressures ensuring learning effort. To this end, this theoretical review touches upon important discussions that focus on these three factors.

1.4.1. Market Failures as Constraints to Development

The modern theory of market failures has helped identify the most important problems facing economic development. Market failure is a general term describing situations in which resources are not allocated in the most efficient manner, causing market outcomes to fall short of achieving optimal efficiency. The argument here is that markets, on their own, are not efficient in promoting growth and development.

Market failures in technological adoption arise due to the existence of a number of supply-side constraints such as technological externalities, informational problems, the problem of contracting for effort in the learning process, insufficient access to financing by manufacturing firms, spillovers, and the uncertain nature of technological investment.

In addition, they are also the result of deficiencies in capital markets used to finance technological investments and learning. From the perspective of industrial capability-building through technology adoption and transfer, the pervasiveness of market failures in the supply of technology-related inputs is particularly damaging because they deter the utilisation of new technology in competitive production (Lall, 1992; Lall & Larsch, 1999).

In addition to the supply-side externalities, the market failures that the literature identifies as demand-side also constrain the process of firm-level technological accumulation. These essentially refer to the lack of *incentive framework* for manufacturing firms to put forth serious effort to learn new technology, to upgrade organisational capability, and to innovate. Directly related to the demand-side constraints are problems such as a high degree of competition and macroeconomic and political instability. These issues undermine firms' investment decisions and their technology development efforts.

In the context of using state interventions to correct market failures, which developing countries cannot quickly fix via by market reform, corrective policy interventions create rents, and thus rents become relevant to market failure analysis. Those who agree that there are market failures that the market itself cannot not resolve, will contend that some rents are useful because a rent policy can address some of these market failures so as to enhance the speed of technological upgrading and learning for domestic firms. Following this argument Chang (2000), Chang and Cheema (2002), Khan (2000b, 2006; 2009), Rodrik (2004a), Stiglitz (1989; 2001) and Wade (1990) are in agreement that rents (or policies made by a developmental state) can be an instrument for promoting growth and development via learning and technological upgrading.

Central to the debate of market imperfections are the externalities that impact learning, described first by Arrow (1962) and then Stiglitz (1989) and Khan (2000b) under the concept of "learning-by-doing," and by Hausmann and Rodrik (2003) as "learning-by-discovery." These development economists use slightly different analyses in examining learning failures in developing economies.

1.4.1.1. Stiglitz: The creation of a learning economy

For Stiglitz, the point of industrial policies is to identify externalities and market failures because nearly every successful country has had industrial policies in which the private sector was assisted in bringing innovation to the marketplace. Stiglitz (1989, 1994) and Stiglitz and Snowdon (2001) base their argument that a government should finance learning either directly or through subsidies on two important premises. The first premise is that successful and sustainable growth and development requires creating a learning society. This is especially true in the 21st century, as markets move to a knowledge economy. However, marked market failures, particularly those associated with impeded learning, are pervasive in developing countries.

To explain market failure, Stiglitz (1989) employs the analysis of first mover's positive externalities . People who first invest in technical learning or innovation in the industrial sector tend to lose out because their investment has positive externalities, so the first mover assumes risks which second and third movers do not want to take. As a result, businesses wait for the first mover to invest in the industrial sector. However, once the risk is transformed into profitable learning, the first movers often do not have enough time to make a monopolistic profit over the knowledge as the second and third movers use this knowledge. In the development environment, where market failures in information and capital markets are widespread, the first mover externalities may deter investments, especially in learning and innovation, given the risk associated with being a first mover (Stiglitz, 1989).

As for the second premise, Stiglitz argues that developing countries need a strong industrial sector because it is related to the rate of productivity increases (Stiglitz, 1994). The industrial sector also maintains important advantages such as high returns: to economy of scale, from the completion of learning (industrial upgrading), from learning continuity, and most importantly from diffusion and spillovers. Based on these two premises, Stiglitz (2013b) contends that it is desirable to encourage learning and development in the industrial sector[6] as it embeds larger societal learning benefits, taking into account both direct learning and cross-sectoral spillovers. Therefore, the government must employ subsidy strategies that lead to an expansion of the industrial sector. In

[6] Stiglitz defines the industrial sector broadly to mean the modern sector, because he also includes many services in this sector.

summary, industrial policies, which Stiglitz (2013a) defines as any policy affecting economic structure, can help "correct" market failures in the form of subsidies (or rents). Such policies are optimal solutions to promote the development of the activities with positive externalities, such as education, information, and first-mover investment, to create a learning society that enables sustainable development and growth.

1.4.1.2. Hausmann, Rodrik, and Valesco: Learning by discovery and growth diagnostics

While observing the performance of developing countries throughout their reforms, Hausmann and Rodrik (2003) noticed that free-market followers, such as countries in Latin America, failed to perform despite successful adoption of foreign technologies, whereas, countries with initially weak market foundations and heavy state interventions, such as China, Taiwan, and South Korea, achieved phenomenal growth rates in the last three decades of the twentieth century. In their assessment, Hausmann and Rodrik (2003) highlight two major failures of laissez-faire approaches: "There is too little investment and entrepreneurship ex ante, and too much production diversification ex post" (p. 1). The authors later in the book described this as market failure of discovery and self-discovery.

In modelling these externalities, Hausmann and Rodrik (2003) use a first-mover externality analysis that is similar to Stiglitz's. Under a free market system, the first entrepreneur often has less incentive to invest due to insufficient ex post profits. Moreover, it is uncertain when the second (or third) investor will enter the market to take advantage of the discovery, which in turn drives down monopoly profits from the discovery. If the first inventor cannot guarantee profits from his investment ex ante, he has very little pretext and motivation to invest in new technology. In the event that this behaviour becomes systemic in all industries within an economy, the country could suffer not only tremendous social and economic losses, but also potential technological backwardness due to lack of new discovery (Hausmann & Rodrik, 2003).

In their model, Hausmann and Rodrik (2003), on the one hand, assume that every developing country has various comparative advantages, but that investors do not have prior knowledge of what those advantages are. This distinguishes their approach from Stiglitz's (and others') model of externality in learning, because the latter do not assume that developing countries have a number of hidden comparative advantages that need discovering. On the other hand, Hausmann and Rodrik assert that discovery comes with time and effort but it does not always produce expected and desirable outcomes. In other words, the first investor's gain from investments is not guaranteed.

To correct this externality, Hausmann and Rodrik (2003) and Rodrik (2004a, 2007) argue that industrial policies such as subsidies and taxes need to be selective and focus on the actual binding constraints in learning and discovery, rather than tackling across-the-board reform. Based on the learning-by-discovery model, Hausmann et al. (2008) identify three major constraints which are widely seen to slow growth: (1) low private and social returns to investment, (2) poor appropriability of those returns, and (3) inadequate access to finance. As a result, Hausmann and colleagues advocate a cautious, experimental industrial policy. To identify, prioritise, and overcome the most critical constraints in growth, they developed "growth diagnostic" as a broad growth analysis framework (p. 1). Growth diagnostic is an "approach to development that determines the action agenda on the basis of these [diagnostic] signals is likely to be considerably more effective than a laundry-list approach with a long list of institutional and governance reforms that may or may not be well targeted on the most binding constraints to growth" (p. 25). However, the authors contend that the process of diagnosis and policy response needs to be institutionalised gradually so as to ensure that the policy does not fall apart during the reform process.

1.4.1.3. Khan: Building organisational capability and ensuring high level of learning efforts

In his 2009 paper, entitled "Learning, Technology Acquisition and Governance Challenges in Developing Countries." Khan focuses on the development of organisational capabilities within firms as a necessary condition for achieving global competitiveness. This, rather than the difficulty of acquiring machinery or skills, is the most important constraint limiting the ability of developing countries to acquire competitiveness in known technologies in which they already have formally skilled workers. The missing organizational capabilities are largely missing tacit knowledge. Khan observes that while some firms in developing countries may have the required number of workers and new machinery, they simply are not able to produce a product at the price and quality of firms in more advanced countries. The difference here lies in building the organisational capability through learning by doing because this is the only way for firms to embed routines and tacit knowledge into their production organisation. Without this tacit knowledge that Khan describes as organizational capability, competitiveness cannot be achieved. The main problem of development is therefore not the discovery of already existing comparative advantage, but the creation of new comparative advantage through the development of the appropriate organizational capabilities.

In this sense, Khan's work is distinguishable from both Stigtliz and Hausmann and Rodrik. For Khan, subsidising the first mover for discovery or for the positive externality does not guarantee that the first mover will be able to produce something productively, especially if that first mover does not have the organisational capability to produce it effectively. This is because learning is not only about bringing in new machinery and learning how to use it, but it is also about creating entirely new organizational structures that can use the new machines to produce products of a given quality and price (Khan, 2009). Therefore, unless firms achieve organisational capability to produce something competitively the subsidies proposed by the models of Stiglitz (1989) or Hausmann and Rodrik (2003) will not work.

The achievement of organizational capabilities through learning by doing requires a high level of learning effort by the firm. In defining effort, Khan (2009) specifically implies the effort in learning to acquire tacit knowledge, which improves a firm's organisation of production and capability (to be distinguished from the effort of workers in the work process.) More specifically, Khan suggests firms must exert high levels of effort in trying out different organisational designs, internal management structures, inventory control systems, quality control systems (and so on) that can reduce costs and improve quality and productivity.

Khan point outs that, "The market failure that constrains economic development most seriously is that investors cannot be sure that they will be able to enforce the levels of effort that will make this investment in learning viable" (p. 1). At the firm level, a high level of management effort is a prerequisite to creating competitive organisational capability for higher productivity. This may translate down to the individual worker level as a requirement for flexibility and effort as well, but high worker effort is not sufficient to ensure the rapid acquisition of tacit knowledge and technical capability to improve productive competitiveness.

Khan contends the problem in ensuring high level of efforts is twofold. First, external investors can only observe firms and workers' effort ex post. Second, it is difficult to contract for high effort because of a potentially large number of contingencies that can affect outcomes independently of effort. This is why private financing of significant new learning of this type is rare in developing countries, and needs to be distinguished from the first-mover problem.

To address these constraints, Khan suggests that there needs to be a mechanism for financing the learning-by-doing process together with strong incentives and compulsions for significant effort, and only part of the latter requirement can be included in a formal contract. In his paper, Khan listed different kinds of mechanisms that historically have ensured such effort. In some countries, for example, the government achieved needed effort by imposing penalties for the failure of learning ex post, as happened in South Korea in the 1960s, 1970s, and 1980s. In other cases like the Indian automobile industry, successful learning was achieved when governments offered large rents as *ex post* rewards with conditions that ensured that the reward could only be captured if significant organizational learning took place.

1.4.2. The Role of a Political State in Rent Management

A common strand running across the theoretical discussions in section 1.4.1 is the significant role of institutions and the developmental state in solving critical market failures, especially those associated with learning and effort. While Khan (2009) stresses the importance of finding an incentive and compulsion mechanism to enforce learning, both Stiglitz (2013a) and Rodrik (2004b) explicitly contend that the state plays a catalytic and central role in correcting externalities that constrain development, especially in the industrial sector. This section of the paper focuses on whether the state has the political capacity to implement the necessary policies to promote growth. In other words, how is the state able and willing to be independent of and to override particular interests, as well as to use that independence to adopt and implement developmental goals?

Although Stiglitz (2013a) observed that "successful developing countries learned how to manage the political economy problems," he did not discuss how it was done other than reasserting that solving externalities in learning requires the participation of nonmarket institutions and government intervention (p. 11). Being a bit more explicit, Rodrik (2004b) contends that the details of industrial policy will depend on the political context of the developing country, such that economic reform must be "politically popular and ultimately sustainable" (p. 6). Thus, policies that work in one country may not work in another because of the specific political context that either enhances or deters policy implementation (Rodrik, 2004b).[7] Nonetheless, Rodrik does not develop a framework to observe different political economy models, especially those that relate to the issues of rent and rent-seeking among powerful interests embedded within and around the state.

On the other hand, some development economists, notably Chang, Cheema, North, and Khan take it one step further from the discussion of market failure and each observe that political processes within a government could potentially deter or enhance the implementation of any policies that correct market failures. In other words, politics matters in the success and failure of implementing developmental rent policies (or industrial policies). In their respective works, they identify the interface between politics and economics, which determines how to solve the most critical problems in development. From the dimension of technological adoption and capability-building, the question is how to solve the most important problems in learning and effort, given that

[7] In his most recent, and somewhat controversial, discussion on the issue of political economy, Rodrik (2013) criticizes political economists' excessive focus on defeating vested interests in the implementation of economic policies. He asserts that this focus can easily divert scholars from the critical contributions that policy analysis can make.

politics matters. In addressing these questions, Chang, Cheema, North, and Khan all put forward their own observations and analyses. The next three sections discuss these various models from the perspective of rent management.

1.4.2.1. Chang and Cheema: The autonomous developmental state

The first generation of development economists notably associated with the "Big Push" literature [8] (Rosenstein-Rodan (1943); Scitovsky (1954); Baran (1957); Gerschenkron (1962); Myrdal (1968); and Kuznets (1973) contends that economic development requires a developmental state: one that is capable of creating and regulating economic and political relationships in order to support sustained industrialisation (see Chang, 1999). As part of the second generation of development economists, Chang and Cheema (2002) draw on Khan (2000a, 2000b) to contend that "the presence of transaction costs imply that market imperfections cannot be addressed through voluntary contracting among economic agents, thus lending further advantage to state mediation and arbitration" (p. 393). Their model calls for an "activist technology policy" in which the state actively invests in creating dynamic efficiencies by using a combination of rents for learning, while, at the same time, managing the rent by way of conditioning them upon specified performance criterion, such as technological upgrading and subsequently exports (p. 375).

To achieve this goal, Chang (1999) argues that there is the need to reconstruct the developmental state, one that is capable of managing rents. The essential characteristics of this developmental state are autonomy, political management capability, and visionary leadership. According to Chang (1999), the state must make the goals of long-term growth and structural change as its primary goals. More importantly, it must "politically" manage the economy to ease the conflicts inflicted by rent policies while keeping track of its longer-term goals. Finally, the state is to engage in institutional adaptation and

[8] The theory of the "Big Push" model emphasises that underdeveloped countries require large amounts of investments to embark on the path of economic development from their present state of backwardness. This theory proposes that a "bit by bit" investment programme will not impact the process of growth as much as is required for developing countries.

innovation so as to achieve its developmental goals. Chang (1999) devised four specific functions that such a state must perform: (1) coordination for change, (2) provision of vision, (3) institution building, and (4) conflict management.

Implicitly, Chang's (1999) model of rent management requires strong and autonomous leadership, one that could drive the Big Push forward and overcome resistance and contestation from interests that lose out in the reform process. He proposes what the South Korean state did during most of its industrial development from the 1960s to 1980s. However, this approach to development is unachievable in most countries because the political arrangement is different in historical, social, and political contexts and is often characterised with fragmentation and contestation; much more so that what is seen in the South Korean experience. Hence, to convert a developing country's fragmented political arrangement into a South Korean rent management model, it most likely requires a major political and social shakeup that may be entirely unachievable. Additionally, the South Korean state-led model is not the only one that has produced growth and development. Historically, countries that did not have such an autonomous and integrated state did occasionally overcome market constraints and achieve growth, such as in some sectors in India and Thailand (see Khan, 2000a, 2009). Chang's (1999) approach falls short in that it simplifies the complexity of rent management, the diversity of different political arrangements and the difficulties in overcoming contestations among political and economic interests in most developing countries.

1.4.2.2. North, Wallis, Webb, and Weingast: Limited access order

For North and his co-authors Wallis, Webb, and Weingast (2009), "economics is politics by other means" (p. 42). They did not view the problem of development through the analysis of market failures. Instead, they developed the conceptual framework of Limited Access Order (LAO) to interpret recorded human history. Limited access order are defined as "orders using the political system to limit economic entry to create rents, and then using the rents to stabilise the political system and limit violence" (North, et al., 2006, p. 2). North and colleagues assert that each developing country is classified in one of the three forms of LAO: fragile, basic, or mature.

According to North, Wallis, and Weingast (2007), to catch up to developed countries, developing countries must find ways to (1) reorganize itself, (2) improve control of violence, and (3) create a legal framework for regulating non-state organizations based on a rule of law. Based on this argument, the limitation of violence and the prevention of disorder are important for movement along the LAO spectrum before transiting to an Open Access Order (North, Wallis, and Weingast's description of advanced countries). From this perspective, rent creation and distribution (or rent management) could limit violence and prevent social disorder by motivating credible commitments among elites that they will not fight each other, since violence reduces elites' rent. In order words, "the creation and distribution of rents therefore secure elite loyalty to the system, which in turn protects rents, limits violence and prevents disorder most of the time" (p. 8). Consequently, for North, Wallis, and Weingast, rent management largely serves the purpose of maintaining and enhancing social orders and limiting violence so that developing countries can move along the LAO spectrum to achieve development. As they wrote:

> The LAO gains stability when a dominant coalition emerges that provides powerful individuals and groups with incentives to refrain from violence. By limiting access, the LAO creates rents that help maintain peace. Limiting access and rent-creation is more than just service to interest groups; it is a solution to the problem of violence (North, et al., 2007, p. 42).

Their analysis highlights a significant break with the neoclassical analysis of rents because it recognises that rents can be beneficial for maintaining social and political order, which then enhances development and growth. It also stress that rent creation can be *functional* in the sense that the creation of rent may serve different development objectives (including the possibility of correcting market failures) and thus open room for the creation of more value-enhancing rents.

1.4.2.3. Khan: Political settlement

Similar to North et. al. (2007), Khan (1995, 2000b) argues that rents are essential for political stability[9] and that we need to look at how developing countries manage different political interests, since the economic intervention carried out by a state has to be broadly consistent with the distribution of power within a political system.

> Theory and evidence suggest that developing countries are more likely to make an impact on market failures if they focus on building governance capabilities that allow them to address specific market failures on a scale and in areas that are consistent with their political settlements. This is an approach for developing growth-enhancing or developmental governance capabilities (Khan, 2011, p. 2).

Unlike North et al., Khan argues that, on the one hand, there are value-enhancing rents in the economy and these rents could be created through a number of mechanisms other than LAO. On the other hand, the creation of value-enhancing rents must be consistent with the political configuration and the underlying distribution of power in society that allows rents to correct market failures and be developmental. As such, Khan points out that in addition to encouraging learning and innovation, rent policies first must be aligned with the interests that will produce the most efficient outcomes and must be shielded from the contestation of unproductive groups in ways that are themselves feasible given the overall configuration of power in the political settlement. Consequently, rents are not only an instrument for stabilising social and political order, as North et al. (2007) suggest, but can also be used to directly stimulate industrial development and technological adoption, while being consistent with the distribution of power in a developing country.

In this context, an effective rent and rent management strategy must address some of the specific structural constraints that developing countries frequently face such as weak and "inappropriate" property rights, weak incentives and compulsions for technical learning and upgrading, and political instability arising from short-term structural changes in property rights and technology adoption. For Khan (2011), the challenging

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[9] Khan (1995) defines and discusses the political settlement, and Khan (2000b) discusses redistributive rents and how they are essential for maintaining political stability.

issues in development and governance are to understand how, in a specific context, the management of political stability is achieved and whether feasible changes in political institutions and political organisations can strengthen political stabilisation and augment industrial transformation.

Directly related to the challenge of managing political interests for development is the role of informality nested in the social, political, and economic structure of a state and its economy. Given the weakness of formal institutions in developing countries, informality is not only ubiquitous, it can complicate or assist the implementation of industrial strategy in developing countries. The next section provides a brief theoretical review on the issue of informal institutions.

1.4.3. The Role of Informality in Rent Management

As discussed in the previous sections, developing countries face serious challenges in solving market failures that constrain their growth. This is especially the case if their political arrangements involve a significant role of informal rent allocations that can weaken the enforcement of formal institutions (Khan, 2011). This observation implies that development strategies that primarily rely on the enforceability of formal institutions are not appropriate (and would not be effective) as the primary response to correct externalities in these contexts, if the solutions did not account for the likely informal modifications in their implementation. It also implies that effective rent strategies must account for the informal institutions supported by the macro-political arrangement that is specific to a developing country. In this sense, the context of formal and informal political and institutional arrangements matter a great deal in development strategy.

Informality also plays a critical role in the analysis of rent management because it provides useful insights into the political and institutional mechanisms, which determine the positive or negative outcomes of the rent. In addition, informal institutions and their dynamics also explain why and how the manner in which rents operate in developing countries is distinct from the formal structure of a country's politics and institutions. Similarly, informality also untangles the distinction between the official reasons why rents are created from what these rents are actually expected to achieve, and the actual outcomes associated with the rents. This is because powerful state and non-state organisations in developing countries that seek to create rents may not achieve their objectives through formal mechanisms alone and may significantly depend on informal mechanisms of rent creation and allocation.

While a great deal of the literature in institutional and development economics has focused on formal rules and institutions, the LAO framework gives equal emphasis to informal rules in that the limitations described in LAOs today are frequently informal (North, et al., 2007). North and colleagues (2007) assert that institutions involve more than explicitly written rules: "They also include informal norms, behaviour, the mechanism by which the rules are enforced, and individual beliefs and expectations about how the institution and other individuals will behave" (p. 26). This definition stresses the importance of informal institutions in the enforcement of rules and rent management in developing countries.

Furthermore, North and colleagues (2007) observe that in developing countries today informal limitations on market entry and privileges are often achieved by using the formal institutions associated with open access in the developed countries: political parties, legalised property rights, and corporate organisations. In other words, formal institutions are frequently used to create informal limitations for accessing rents. These informal limitations on access to rents and privileges are deliberately imposed by the elites, and they may arise for instance from the informal ways in which the bureaucracy and corruption operate in government (North, et al., 2007).

Similarly, but viewing informality from the perspective of a social distribution of power, Khan employs a broad definition of informality. Informal institutions are all patterns of behaviour (enforced or otherwise) where the implicit enforcement mechanism does not involve enforcement by formal state organizations (Khan, 2011, p. 12). Thus, "informal institutions include the operation of habits, customs, cultures and values… [as well as] rules enforced by informal agencies like mafias and patron-client organizations" (p. 12). In this perspective informal institutions include in particular all institutions where the enforcement does not involve the formal activities of the state. Even if the enforcement is done by state organizations like the police, the institution can still be informal if the enforcement agencies are acting other than in rule-following ways. This perspective on informality means that some informal institutions can indeed be attributed to culture but the focus on non-state enforcement means that there are many other important areas of informality in developing countries.

According to Khan (2011), much of politics in poor countries is not rule-based. In fact, informal rules frequently regulate internal power structures and the competition between different types of patron–client networks. For that reason, Khan contends that the focus of rent management should include an analysis of the actual rules governing rents, even when these rules are based on the informal or non-rule-follow exercise of power. This suggests that to identify significant informal institutions or informal arrangements embedded in formal institutions, we have to begin by tracing the allocative rules that generate rents in developing countries. This may help to identify the configuration of politics and institutions that is responsible for important rent allocation decisions.

The review of the literature in this section supports the observation that while a state may adopt formal industrial policies by creating rents and working steadily to improve its institutional structure so as to be capable of implementing rent policies, the effectiveness of these policies may be constrained by patterns of power outside formal political and institutional structures. As a result, successful rent management strategies must account not only for the formal but also the informal political and institutional arrangements through which rents are sought, created, and managed. This is because much of the actual activities of creating and enforcing rents are in the informal relationships between organisations, between members of an interest group, and between groups. These informal dynamics are often missing in the economic analysis of development.

1.4.4. Final Considerations

In this section this paper has provided a brief theoretical review of some development economists who have attempted to answer the two important questions set out in this review: (1) What are the most important economic problems in development, and (2) how can the these economic problems be solved given that politics and informal institutions matter? To answer the first question, notable economists, namely Stiglitz, Hausmann, Rodrik, and Khan provide different contentions, particularly on the issue of learning and technological upgrading using the analysis of market failures. In responding to the second question, the literature provided by Chang, Cheema, North, Wallis, Webb, Weingast, and Khan offers important insights on the interface between politics and economics in developing countries. Chang (1999) and Chang and Cheema (2002) assert the necessity of an autonomous developmental state. North and colleagues (2007) press the critical movement along the Limited Access Order, with special attention to the limitations of violence and social disorder via rent creation. Lastly, Khan (2011) offers analysis of the underlying distribution of power in a society that is critical to generate growth and development. The final discussion of this section considers the important role of informality and how it contributes to the dynamics of rent creation and management in developing countries.

Central to the argument of this paper is that rent management is an outcome of institutions, politics, and industry organisation, within which rents are created, allocated, and contested. As an outcome, rent management describes the process of organisational competition and transformation. The ways in which rent is managed affects the structure of incentives and pressures on the participants, which in turn determines whether they use their rent opportunities for learning, innovation and investment. As a result, the "management" of industrial policies or rent policies does not necessarily take place from above by the central government. Instead, value-enhancing outcomes can happen without any explicit plan, as the outcome of the types of rents created by the matrix of formal and informal institutions in a society. This interaction could occur laterally at the firm level, between the entrepreneurs and the political and state institutions in a developing country. As a result, the management of rents is usually an outcome of an interaction between organisations and institutions, given the configuration of formal and informal institutions and politics. Consequently, an understanding of rent management mechanisms can help to explain the types of rent that are being created and their role in resolving or complicating the critical binding constraints in poor countries.

1.5. Towards an Analytical Framework for Rents Management

This paper provided a theoretical review of some of the most important advances in research on the political economy of technology adoption, learning, rents, and rent management. It identified significant differences in the analysis of development economists such as Stiglitz, Hausmann and Rodrik, Chang, Cheema, North, Wallis, Webb, Weingast and Khan in their identification of the critical problems for development, as well as in their analytical framework for investigating the political economy solutions that are feasible for tackling these problems.

Underlying some of the discussions of the process of technological and economic development is a presumption that the process of technological change can either take place automatically or be achieved through state intervention. For some theorists, the relevant policy is simply one of providing an institutional framework to support either market liberalisation, or rents to correct critical externalities that constrain learning and upgrading. However, a fuller understanding of the process of technological change and growth in developing countries, as well as the analysis of political economy, suggests that we require a wider conceptualisation of these processes than those presented in neoclassical theories on technology and development (see section 1.2.1), or by those strands of the statist literature that examine technological upgrading based on a 'black-box' correction of market failures by a visionary and high-capability state (see section 1.4.1).

Theoretical discussions in this paper also establish that in order to achieve growth through technological upgrading and capability-building, rent policies must not simply aim to remove constraints in the development process, but must also satisfy the political and institutional conditions of viability in that society for effective rent management (see section 1.4.2). In addition, these conditions cannot be limited to the formal political and institutional processes, but must be taken from a wider context of *informal* political, institutional, and organisational arrangements among political and economic interests that impact rent outcomes (see section 1.4.3). From this perspective, the best policy approach is to first analyse and map the existing mechanisms of rent management. The purpose is to examine the effects of these mechanisms on learning, technological adoption, and capability-building, given the political and economic context of a specific country. Only when there is a clear understanding of a working rent management system in the specific context of a developing economy can proposals for incremental improvement be made.

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