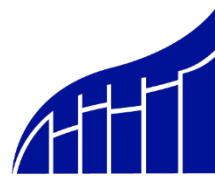ATENEO DE MANILA UNIVERSITY

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Adapting Competition Law and Policy for Economic Development with Asian Illustrations

BY

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Abstract

Do the needs of countries in different economic environments and at various stages of development warrant different policies? In the pursuit of economic development and consumer welfare, competition policy should curb rent-seeking and promote market efficiency without interfering with the extra-market institutions for the dynamic promotion of specialization, innovation, and investment coordination. This requires the coordination of competition policy with other economic roles of government including trade, industrial, and infrastructure policies. We investigate the impact of adoption of competition law on long-term economic growth using cross-country data from 1975-2015. Countries may choose to adopt – or not adopt – competition law depending on their circumstances, including level of economic development, institutions, and geography. Considering endogeneity and self-selection, we employ an endogenous switching regression allowing for the interdependence of economic growth and adoption of competition law. Our analysis shows that adoption increased the growth rates in adopting countries but would have decreased growth in non-adopting countries. This suggest that countries should not be pressured to prematurely adopt competition law but a limited international or regional agreement such as harmonization of policies may instead be pursued. In addition to correcting the abuses of anti-competitive behavior, competition policy should be designed to promote innovation and productivity growth and be well-coordinated with trade and domestic policies. We review these arguments focusing on Asian countries. The cases of Korea, Thailand, and the Philippines capture the characteristics of the law and authorities at various stages of maturity.

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1. Introduction

Competition disciplines firms to subjugate other objectives to the pursuit of profits, thereby enhancing market efficiency. In his *Wealth of Nations*, Adam Smith described competition as the "exercise of allocating productive resources to their most highly valued uses and encouraging efficiency." Competition can also incentivize product variety and prices that enhance consumer welfare. As discussed below, competition plays an important role in encouraging innovation, increasing productivity, and propelling growth, thereby promoting a county's sustained economic development.

Effective competition, however, does not necessarily follow from the mere existence of many competing firms. Inappropriate government policies and firm conduct can impair competition and hinder its role in economic development. Weak institutions and rent-seeking by special interests may inhibit competition-enhancing reforms, restrict opportunities for innovation, and diminish consumer welfare. This is where competition policy plays a role. Competition policy encompasses competition advocacy as well as laws and regulations concerning anti-competitive behaviors and production structures (Motta 2004). Competition law is a set of enforceable legal rules designed to prevent the abuse of market dominance and anti-competitive behavior and to break down barriers to entry. Competition advocacy promotes a culture of competition as well as consumer interests (Clark 2005, Rakić 2018). Since effective competition can improve income distribution as well as innovation and productivity, competition policy can be critical in achieving inclusive growth and sustained development.

In investigating the impact of adoption of competition law on long-term economic growth, we constructed a cross-country dataset form 1975-2015. Countries may choose to adopt – or not adopt – competition law depending on their circumstances, including level of economic development, institutions, and geography. Considering endogeneity and self-selection, we employ an endogenous switching regression allowing for the interdependence of economic growth and adoption of competition law. Our analysis shows that adoption increased the growth rates in adopting countries but would have decreased growth in non-adopting countries.

In addition to correcting the abuses of anti-competitive behavior, competition policy should be designed to promote innovation and productivity growth and be well-coordinated with trade and domestic policies. We review these arguments focusing on Asian countries. While the design and organization of competition authorities in Asia

varies according to each country's historical and economic situation, we focus on the cases of Korea, Thailand, and the Philippines to capture the characteristics of the law and authorities at various stages of maturity.

In the next section, we outline the role of competition in economic development and explain the need for competition policies to play a complementary role to other policy instruments. Section 3 describes evolution of competition policy, its institutional aspects, and political economy considerations. Section 4 provides an empirical investigation of the role of economic development in competition policy adoption and contributors to the effectiveness of competition policies. Section 5 offers discusses competition policies in Korea, Thailand and the Philippines. The last section concludes.

2. Competition and development

2.1 Competition policy and the promotion of welfare

The role of government with respect to the economy is to promote the general welfare by constructing an infrastructure of cooperation. This includes rules and standards of property and contracting, including competition policy, such that bilateral exchange leads to competitive markets. The centerpiece of neoclassical economics is the fundamental theorem of welfare economics, a formalization of Adam Smith's *Invisible Hand* proposition that competitive markets can, under ideal circumstances, eliminate waste and achieve economic efficiency. Ensuring freedom of entry and other pre-conditions for competition is thus an integral part of the infrastructure of cooperation. The metaphor of the invisible hand captures the central irony that the purpose of competition is to promote the coordination of economic activities for the promotion of the common good. Beyond the neoclassical model are the benefits of competition for specialization and innovation.

The means by which competition policy works to promote the general welfare are both behavioral and organizational. Competition renders abusive behaviors such as price-fixing unprofitable. And competition selects (through entry and exit) organizations (firms) that reduce costs and improve product quality and variety.

In addition to promoting beneficial competition, the infrastructure of economic cooperation includes complementary functions where bilateral exchange is insufficient for efficiency. Thus, in the case of natural monopolies, public goods and incomplete markets, the role of government extends to facilitating multilateral cooperation including market regulation and the provision of public goods.

We regard the purpose of competition policy as *making markets work for economic development*. Inasmuch as transaction costs are biased in favor of producers, competition policy works on behalf of consumers to overcome that bias so that markets promote the

general welfare. By blocking anti-competitive agreements and behaviors among elite producers, competition policy promotes vertical equity. Another central role of competition policy is to extend horizontal equity to commerce. Equality under the law should include freedom from price and other forms of commercial discrimination and equal opportunity to engage in economic exchange. Promotion of an equal playing field will aid small and medium-sized enterprises and thereby promote vertical equity as well.

Should competition policy promote total welfare or focus more narrowly on consumer welfare? Kaplow (2013) argues that the objective of competition policy should be total economic welfare on the grounds that distributional consequences can be offset by redistributive instruments. It may be, however, that the best way to promote the general welfare is by promoting consumer welfare.

In one of his most famous passages, Adam Smith noted that: "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices." Arrow (1969) alludes to a formalization of Smith's conspiracy theory when he states: "It is not the size of transaction costs but their bias that is important." That is, while people of the same trade can easily collude, it is much more difficult for consumers to form a coalition to block those efforts, e.g. by temporary boycotts. Indeed, regulation of potentially anti-competitive agreements, organizations, and behaviors can be viewed as an *administered contract* (Goldberg 1976) by government on behalf of consumers to confer Galbraith's (1952) *countervailing power* to consumers. That is, the ideal regulator offsets the bias in bargaining power that threatens to inhibit the ability of markets to deliver the promise of maximizing public welfare (Balisacan 2019).

In other words, government should not be viewed as a benevolent despot eager to do the bidding of the metaphorical economist, who prescribes how to correct the market failures associated with externalities, public goods, and economies of scale.[1] From a political economy perspective, that would be futile.[2] Given the nature of the political equilibrium, total welfare may be best pursued by the promotion of consumer welfare, in particular by acting as a countervailing force against the restraint of trade orchestrated by commercial elites and enabled by misguided public policy.[3] More generally, the perceived tradeoff between total and consumer welfare is a false dichotomy, an artifact of partial

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[1] See e.g. Brennen and Munge, 2014, on Knut Wicksell and James Buchanan's aversion to "modeling government as if it were a benevolent despot" and pursuing public policy as if all the economist needs do is whisper in the despots' ear.

[2] Politicians determine, via selection, official economic views, not the other way around (Blinder 1987).

[3] Once lobbying of the competitive agency and the endogeneity of merger applications is taken into account, it is also possible that assigning a consumer welfare objective to the competition agency will increase total welfare more than assigning a goal of total welfare in the first place (Nevin and Röller 2005, Besanko and Spulber 1993).

equilibrium diagrams depicting net welfare as the sum of producer and consumer surplus. But in general equilibrium, it is consumer welfare that is maximized, including the returns to shareholders of private business.[4]

In summary, competition policy can be viewed as part of the infrastructure of cooperation, by which the invisible hand of market competition (with appropriate guidance) can minimize economic waste, especially by combating the natural tendency of collusion and rent-seeking. As such, competition policy can be seen as an extension of Adam Smith's *nightwatchman* functions of government, in particular the promotion of an environment (including *standards and measures*) such that bilateral exchange promotes efficiency.

2.2 Competition, Growth and Development

To the extent that Asian countries have borrowed competition policies from the West (Ravago, Roumasset, and Balisacan 2021; McEwin and Chokesuwattanaskul 2021)), where static considerations have dominated discussions, Asian competition policy can benefit from understanding the role of government in the dynamics of growth and development, especially regarding specialization, innovation, and investment coordination.

In the dismal science of Malthus and Ricardo, increasing quantities of labor added to a fixed resource base is self-limiting, with the economy heading to a stationary state with subsistence wages. Neoclassical growth theory is somewhat more optimistic. By adding capital faster than the rate of population growth, per capita income increases. But eventually the rate of growth slows to the rate of technical change. In this view, the government needs only to promote the infrastructure of cooperation described above.

Endogenous growth theory is more optimistic still. Due to economies of human capital and specialization, growth need not slow. In this view, an additional role of government is implied—the promotion of knowledge spillovers, especially by way of education and R&D.

Economic development is economic growth modified by structural change. In particular, structural transformation is characterized by the decline of the share of agriculture in the economy, the growth and subsequent decline of the share of industry, and the growth of the services sector. The primary driver of the transformation is productivity growth. On an efficient development path, productivity growth in agriculture stimulates

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[4] Moreover, to the extent that competition eliminates excess profits, shareholders are reimbursed only for their costs. Despite the continuing controversy, the consumer-welfare perspective has mostly dominated in the U.S. since a Supreme Court ruling to that effect in 1979 (Wright and Ginsburg 2013).

industrialization via supply and demand linkages. Further productivity growth in agriculture combined with even faster growth in industry combine to raise real wages and per capital incomes.

At early stages of development, capital accumulation and innovation in agriculture barely surpass diminishing labor productivity from population pressure (Boserup 1965 and 1981, Lucas 1993, and Roumasset 2008). Even with modest growth of productivity relative to population, the relatively low income-elasticity of demand for food and the supply-side linkages of savings and low-cost labor eventually lead to the emergence of industrialization and to increasing shares of output and employment contributed by manufacturing (Jorgenson 1961).

Greater rates of specialization and capital formation, especially in manufacturing, spur faster productivity growth in the economy and provide a further impetus to wage growth. This process also increases the returns to human capital formation, lowering fertility, and further contributing to the virtuous circle of rising productivity (Lucas 1993, 2001). Along with this transformation, manufactured products increase as a proportion of exports, and both exports and imports grow relative to total production.

The fact that average productivity tends to be higher in industry than in agriculture does not imply that government policy should artificially promote the transition, e.g. by taxing agriculture and subsidizing import-substituting manufacturing through tariff protection (Bautista and Power 1979). Productivity growth is the cause of structural transformation not the other way around (e.g. as in Felipe and Estrada 2018).

In the final stage of structural transformation, the services sector modernizes and grows relative to industry and is sometimes seen as an increasingly important source of growth and poverty alleviation, "due to its complementarity with manufacturing, criticality in the global value chain, and rising tradability" (World Bank Thailand, 2016). As Wallis and North (1986) have detailed, the modern services sector is largely composed of the *transaction sector* (especially transportation, communication, finance and the digital economy), which facilitate specialization and the continued escalation of productivity. The size of the transactions sector grows even as *unit transaction costs* (e.g. transport cost per ton-kilometer) fall.[5]

Specialization is a key engine of growth. The falling costs of communication and transportation facilitate more and more transactions, more complex economic organization,

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[5] The stylized facts of structural transformation are described by Clark 1940, Kuznets 1966, Chenery and Syrquin 1975, and Timmer 1988. For a more detailed discussion of the nature of structural transformation, see Roumasset 2008 and Ravago and Balisacan 2016.

and further specialization in virtuous circle that grows the transactions sector (modern services). Through horizontal and vertical specialization, innovation and learning are promoted. As an illustrative thought experiment, think of the first rifle that was ever made. It would have been made by a blacksmith who made all the parts – lock, stock and barrel. But as demand grew, artisans began horizontally specializing in different rifles, vertically specializing in parts, and later horizontally specializing in different parts.

At first the components had to be standardized. There's a scene in "The Good, the Bad, and the Ugly" in which Tuco puts together a gun from several different models. We see that the components from different brands (during the time of the Civil War) were made to be interchangeable. Specialization in intermediate goods (lock, stock, and barrel) was *limited by the size of the market* (Stigler 1951). As demand grew even further, specialized producers emerged for the differentiated components for Remington, Winchester, Colt, Smith-Wesson and other brands. In order for specialization to be only limited by the size of the market, increasing vertical coordination (and its concomitant governance costs) was required, facilitated by ever falling unit transaction costs. The increased total transaction costs are warranted by the greater value added from the external and internal economies[6] and the improved fit of production with diverse preferences. Given the increasing complexity of economic organization, some flexibility in competition policy is needed lest regulation restrict the evolution of efficient organizational forms.

As economic development proceeds, companies develop new institutions to lower coordination costs. Consider *parallel sourcing*, for example. Toyota typically used only one supplier of each component for each of its models, e.g. one supplier of steering wheels for its Corolla, another for Cressida, and so on. Each is a monopolistic supplier to a particular model, but there is competition across models. So Toyota gets the best of both worlds. The use of one supplier improves interfirm relationships conducive to product quality while competition motivates suppliers to specialize and innovate at reasonable costs (Richardson and Roumasset 1995). What this example illustrates is that competition need not displace intra and inter-firm relationships. Rather competition and relationships can be complementary. It is easy to see how rule-based competition policy could be carried too far and undermine efficient institutions.

In the neoclassical paradigm, specialization becomes complete as transaction costs eventually shrink to zero in what might be viewed as the "omega point"[7] of development, wherein the economy is well represented by the Arrow-Debreu general equilibrium model

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[6] The internal economies of scale occur in the production of the intermediate product. In a competitive environment, these result in lower costs (and/or quality improvements) of rifle production known as *Marshallian external economies* (Stigler 1951).

[7] Coined by Pierre Teilhard de Chardin and rooted in the metaphysics of Aristotle, this refers to the belief that everything is moving towards a final point of divine unification.

of supply and demand (e.g. Debreu 1959). This view is contradicted by the facts, however, since the transaction sector and the importance of internal governance grow with specialization. At any point in time, specialization is limited only by the tradeoff between the economic gains afforded and the increased costs needed to govern it. But as unit transaction costs decline, both horizontal and vertical specialization increase further. Competition policy for economic development therefore needs to facilitate competition without impairing the extra-market coordination needed for increased specialization.

The canonical excess-burden graph for a monopoly seems to suggest that the more you reduce monopoly power, the more welfare will increase and that competition authorities should seek to reduce monopoly power wherever they can. That generalization may be counterproductive, however. For example, if you had two industries and made the less monopolistic one even more competitive, that would typically worsen the inefficiency. Monopoly pushes resources out of the monopolistic sector making them less socially productive. Pulling even more resources into the relatively less competitive sector by making it more competitive makes those resources even less productive. One must be accordingly careful about piecemeal attempts to make individual sectors more competitive.

2.3 The role of trade, competition, and industrial policy in economic development

The history of economic development thinking in the last 30 years has reflected a shift from a *letting-markets-work* viewpoint focused on the static-efficiency properties of competitive markets to a perspective of *helping-markets-work* with physical and institutional infrastructure [8] and a greater focus on dynamics–productivity growth and structural transformation for increased levels-of-living.

In the late 1980s and early 1990s, the predominant view of economic development policy, labeled the Washington Consensus (Williamson 1989), focused largely on static efficiency losses (e.g. Krueger et al. 1988 and 1991-2). The philosophy was to reduce market distortions associated with taxes, subsidies, and barriers to competition both domestically and from international trade. In this view, economic regulation and other market interventions are only needed to correct for externalities and guard against anti-competitive forces. This view subsequently lost favor, due both the mixed success of static-focused policy reforms and because incentives for enhancing investment and productivity were given short shrift (Rodrik 2006).

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[8] This begins with the rule of law and includes a legal system for the enforcement of rights and contractual exchange, consistent with the Smithian view of *public institutions* and broadly construed *standards and measures* (Besley and Ghatak 2006).

A more comprehensive view was fomented by the *East Asian Miracle* (World Bank, 1993) in which investment and productivity growth were key. The "miracle" countries succeeded by dramatically growing manufactured exports. Manufacturing provides almost limitless opportunities for both horizontal and vertical specialization, and specialization appropriates external economies from knowledge, learning, and networks (Yang 2003).

One key to export promotion is lower tariff and non-tariff barriers to imports. These promote economic development via multiple channels, all involving increased competition and engagement with international markets. First, the gains from trade provide an immediate boost to levels-of-living. Second, removing import protection spurs industrial development, especially via manufactured exports, inasmuch as tariff protection discriminates against exports via an appreciated exchange rate (Power 1972). The concomitant specialization leads to further growth through learning-by-doing, network externalities, and outward-oriented innovation (Lucas 1993). A third mechanism lies in the ability of international competition to retard domestic rent-seeking (e.g. Oman 1996).

Another key to export promotion in "miracle" countries was the selective assistance of domestically successful firms in transitioning to the export market, through such tools as subsidized credit, government certification of product quality, and investment coordination. Competition and cooperation were intertwined in this channel. First, domestic competition provided a mechanism to select the most successful firms. Many of the successful firms then formed conglomerates (the Keiretsus and Chaebols of Japan and Korea) that facilitated cooperation between firms, banks, and governments in coordinating investments. This enabled firms to initially succeed in international competition and to sustain their success through innovation in product quality and methods of production (Halberstram 1986, Roumasset 1992).

2.4 Innovation

Productivity growth is central to economic development, and innovation is a key factor in increasing productivity. How should competition policy be adapted to promote innovation? Schumpeter (1942) famously proposed that too much price-lowering competition can destroy the competition that really matters–competition to develop new technologies, products, and organizational forms and new sources of supply. This inverse relationship between innovation and competition was formally derived by Romer (1990) Grossman and Helpman (1991) and Aghion and Howitt (1992) but empirically rejected by Nickell (1996) and Blundell et al. (1999), who found a positive relationship instead. This led Aghion et al. (2005) to synthesize the theory of an inverted U-shaped relationship

between innovation and competition,[9] which they confirmed for a panel of firms listed on the London Stock Exchange. The results are shown in Figure 1, wherein the maximum effect of competition, given by one minus the Lerner index, occurs at a price-cost margin of around 20%.[10] The humped-shaped relationship between R&D effort and competition is thought to be the result of opposing forces. On the one hand, firms have positively-sloped reaction functions to the innovative efforts of competitors. At high levels of competition, however, this is overcome by falling individual returns to innovation (Acemoglu 2009).[11]

Figure 1. Competition promotes innovation up to a point.
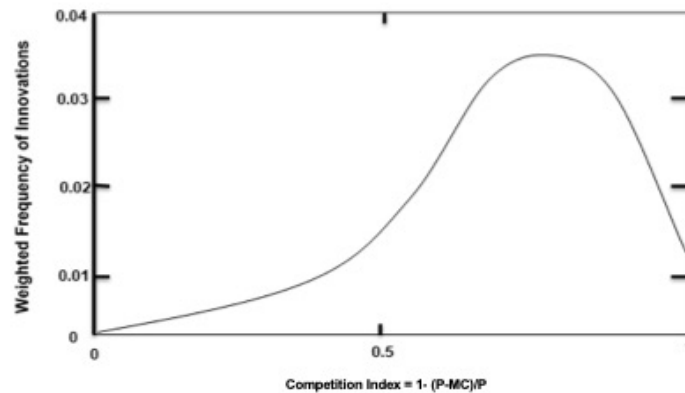
Adapted from Agion et. al 2005.

Patent law may be seen as a device to incentivize innovation without conferring a surfeit of excess profits to producers. In effect, the innovator becomes a temporary monopolist over the innovation. The patent system also has some disadvantages, however, notably restricting use of what is essentially a public good, imposing a rather arbitrary patent duration, and requiring disclosure of technical information that may have been costly for a firm to acquire (Konan et al. 1995).

2.5 Investment coordination

The most prominent growth externality involves interdependent investments (Stiglitz 1996). Suppose that a manufacturer and its supplier are considering an expansion such that a win-win outcome is realized if both parties invest. There is an *assurance*

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[9] For an alternative derivation, based on a model of monopolistic competition with directed technical change, see Acemoglu (2016) at http://economics.mit.edu/files/11962.

[10] The averagel competition index for the U.S. is around .85 (Hall 2018), i.e., on average, further increases in competition could undermine innovativeness.

[11] Acemoglu (2016) derives this result in a model of monopolistic competition and directed technical change (see also http://economics.mit.edu/files/11962). See Chernyshev (2016) for a review and theoretical synthesis of this literature.

problem in that both players stand to lose if they invest but their counterpart doesn't.[12] Inasmuch as spot markets are not well-suited to the coordination of investments, competition that disrupts efficient mechanisms of coordination may be welfare reducing. Relatedly, competition that undermines internal governance structures that facilitate coordination in the value chain may also be harmful. As a result, competition, in the absence of forward markets, needs to be supplemented by extra-market mechanisms.

One approach to the coordination of investments is to correct market signals by Pigouvian price adjustments, typically through tax incentives. The problem with this approach is that those special interests with the best lobby efforts will tend to get the greatest tax breaks. The most promising approach to coordinating investments may be through economic cooperation. In the Keiretsu-Chaebol model followed by Japan and South Korea, for example, cooperative investment has been encouraged by means of conglomerates and *deliberation councils* (Lee and Naya 1988).[13] While direct coordination through conglomerates and deliberation councils can internalize coordination externalities, they also risk encouraging rent-seeking. Competition policy can potentially curb these excesses without undermining the warranted coordination (Shin 2018). While there remains a risk that the competition authority can be captured by the very industries it is meant to regulate (Stigler 1971), this risk is mitigated by the quasi-judicial nature of competition agencies and by the orientation of these authorities to the whole economy instead of a particular industry.

As anticipated by Adam Smith, the role of the state also includes the facilitation of public works, now known as *public goods*, such as transportation infrastructure and education. Public goods are *non-rival* in consumption thereby conferring positive consumption externalities on non-providers. State facilitation of public goods also take a variety of forms, including *provision*, *procurement*, and *incentives (*e.g. through vouchers or public-private partnerships). Since "government failure may be as important as market failure" (Besley and Ghatak 2006), competition policy also embodies regulation of the public sector, be it a public utility, the public procurement process, or a public agency providing private goods, such as a grain-marketing parastatal.

In summary, focusing competition policy on economic development calls for a greater orientation to the dynamics of investment, innovation, specialization, and coordination. In addition to the need for the rule of law, especially market-friendly institutions for contracting, there is a need to balance the coordination of interdependent

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[12] In game theory, the win-win outcome is said to be *payoff dominant*, whereas the no-invest Nash equilibrium is *risk dominant*. Adopting a strategy of cooperation without assurances of cooperation by the other players is said to be a "sucker move" and "nobody likes to be a sucker" (Suzor 2014).

[13] For a more extensive discussion of the investment coordination problem and the pros and cons of alternative remedies, see Roumasset (1992) and Stiglitz (1993 and 1996).

investments with anti-competitive regulations that limit the scope for rent-seeking. A dynamic perspective puts more weight on productivity-enhancing innovations than squeezing out the last drop of excess profits. This will be enhanced by policies that enhance free-entry and by avoiding unnecessary protectionist efforts to keep existing businesses afloat.

Modifying competition policy for the objective of economic development requires understanding its possible drawbacks. We review arguments from Public Choice and Transaction Cost Economics, regarding possible negative effects. We also discuss how the single-minded pursuit of competition in isolation from the complex nature of economic development will not always advance the common good. As we have seen competition needs to be supplemented by extra-market institutions. A few additional problems with common generalizations about competition policy help to illustrate the danger of following simple rules of thumb.

2.6 Pitfalls: Views from Public Choice and Transaction Cost Economics

The Public Choice school of economics seeks to explain (rather than prescribe) economic policy. In particular, the *third-best level of analysis* explains public policy as the non-cooperative outcome of competition between opposing interest groups (Balisacan and Roumasset 1987 and Dixit 1999). From this perspective, economic regulation may lower public welfare via regulatory capture (Stigler 1971), according to which regulated industries tend to divert the actions of regulatory authority from what may have been their original purpose. According to Olson's law of large groups (Olson 1971), a small number of industry players with high stakes are more motivated to invest in influencing the regulator than many consumers with small individual stakes[14] Some authors contend that anticompetitive forces even shaped the original antitrust legislation in the U.S. (e.g. Boudreaux et al. 1995 and Ekelund et al. 1995).

Politically-motivated case selection can actually lower competition and welfare. Long et al. (1995) present evidence that preventing consumer welfare losses had little to do with the antitrust case selection in the U.S. Nor does the advent of antitrust law necessarily decrease the number of mergers. Bittingmayer (1995) shows the Sherman Act caused the Great Merger Wave in the U.S., as firms substituted mergers for cartels, which led in turn to the Clayton Act. Moving to macroeconomic effects, Shughart and Tollison (1995) contend that antitrust enforcement had a negative effect on employment in the U.S. by actually raising prices and lowering output.

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[14] For formalization of Olson's law in the context of agricultural protection, see Balisacan and Roumasset (1987) and Gardner (1987).

Can mergers improve efficiency? Even before his contributions to *Transaction Cost Economics* (TCE), Oliver Williamson (1968) used the framework shown in Figure 2 to answer, "yes." Suppose that the merger lowers production costs from MC_1 to MC_2 though redeployment of assets, the avoidance of duplication, and incentive for innovation. The merger confers market power that increases the price from P_1 to P_2. Consumers lose $A_1 + A_3$ while producers gain $A_2 + A_3$ in excess profits. Since area A_3 is an offsetting loss and gain, this leaves a net gain of $A_2 - A_1$, which Williamson (1968) shows is positive unless the demand elasticity is very high.[15] Kaplow (2013) argues (for the U.S. case) that the hypothetical merger shown should be allowed because the negative distributional effects can be offset with distributional instruments such as a negative income tax.[16] But said transfers would be difficult to arrange, would face moral hazard problems of their own, and would create horizontal inequity by discriminating against consumers of a particular product. The solution would also be highly inefficient, leaving the large excess burden triangle $A_1 + A_4$. [17]

Figure 2. The Williamson Tradeoff: Should Efficiency-Enhancing Mergers be allowed?
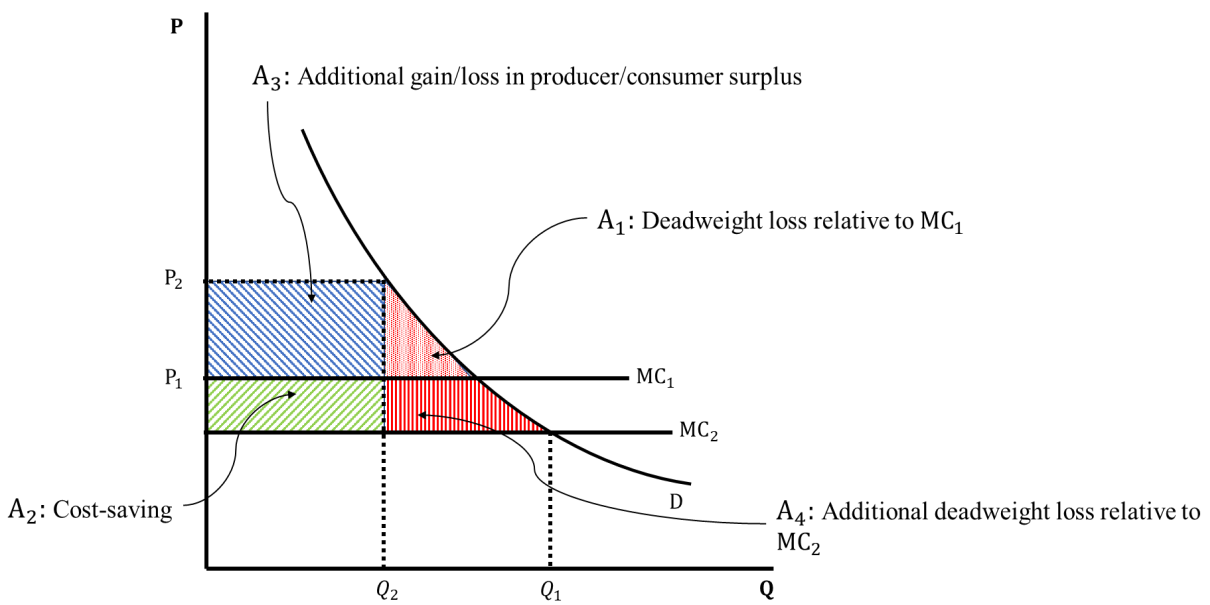
Source: Adapted from Williamson (1968)

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[15] Williamson (1968) characterizes his model as "naïve," however. If we were not starting with perfect competition or distortions exist in other markets, the analysis would be more complicated.

[16] See also Kaplow and Shavell (2002).

[17] One possibility for appropriating the potential efficiency gains without these adverse effects would be to allow a conditional merger with conditionalities such as price caps in order to limit consumer losses. Exactly how to determine and enforce those caps can be elusive, however Kaplow (2013). For example, a producer can decrease quality to comply with a cap, and caps set too low can potentially lower welfare by inducing shortages. For example, rice retailers in the Philippines have been known to lower rice quality in order to comply with a price cap on National Food Authority rice in order to sell at an equilibrium price (Roumasset 2000).

Before the heyday of TCE, it was widely presumed that the purpose of vertical mergers was the restraint of trade. As Coase had already argued in his 1937 "Nature of the Firm," however, firms will tend to acquire a supplier when what are now called the "agency costs" of internal governance are less than the contracting costs of dealing with the external firm. This efficiency rationale for vertical mergers became widely appreciated due to the New Institutional Economics of Oliver Williamson (1975, 1985, and 2000), including Williamson's clarification that contracting costs include the governance costs and residual losses associated with opportunistic behavior such as the "hold-up" problem. The possible efficiency rationale for vertical mergers is now widely recognized in the practice of competition policy.

These examples show that the single-minded pursuit of competition instead of consumer welfare can be counterproductive. Accordingly, modern competition policy seeks to understand the causes of mergers and other practices rather than assuming that all apparent deviations from competition are conspiracies against public.[18] Rather than basing merger cases on market share, for example, econometric studies are sometimes done to determine whether market power will unacceptably raise prices.

Increasing competition one-market-at-a-time can also decrease economic welfare. Attracting more resources into one sector may pull resources away from a sector that is even less competitive thereby increasing the total excess burden of monopolistic forces. To the extent that a competition authority passively responds to complaints and requests for approval, piecemeal reforms can easily miss the larger picture. This implies a need to actively review markets and find out where the distortions are greatest, including sectors with major state-owned enterprises.

Another common generalization to avoid is that static deadweight losses are necessarily small compared to the improvements and gains we can get from innovation and productivity improvements (e.g. Rodrik 2006). This partial equilibrium view is overly simplistic, since one market distortion may exacerbate distortions in other sectors. Goulder and Williams (2003) have shown that such *exacerbation effects* can be an order of magnitude higher than the original welfare loss triangles.

Awareness of the interdependence between trade and industrial policy has stimulated a discussion regarding whether these policies are substitutes or complements.

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[18] As Coase once said before TCE was understood, "if an economist finds something—a business practice of one sort or other—that he does not understand, he looks for a monopoly explanation" (Shapiro 2010 quoting Williamson quoting Coase).

For example, Palim (1998) interprets Milton and Rose Friedman (1979) as suggesting that freer trade can be used as a substitute for competition law and purports to have rejected that hypothesis. More generally, trade liberalization and competition policy may be complements in one situation and substitutes in another. And the fact that import competition inhibits some monopoly power does not imply that competition law is any less important. Indeed, removing some trade barriers can make domestic monopoly power even more distorting, just as lowering tariffs increases the deadweight loss from non-tariff barriers (Clarete and Roumasset 1990). The notion that liberalized trade policy provides adequate domestic competition would only follow if there were no non-traded goods, and no impediments to domestic trade (including transportation costs, communication costs, and domestic policy distortions). Such transaction costs and distortions can isolate local domestic prices from world prices. Development policy therefore requires a balancing of trade, industrial, and competition policies, not a substitution of one for another.

Competition policy is best seen as an instrument for promoting economic welfare and development, not as promoting competition as an end in itself. Given the complex nature of economic development and the growth of the transactions sector needed to facilitate it, competition policy needs to be seen as one part of pro-market interventionism, whereby markets are both facilitated and complemented by extra-market institutions. The competition authority should play an active role beyond responding to complaints and requests for approval: market and economy-wide reviews, including a market review that prioritizes sectors needing reform, including government monopolies. Competition policy should be seen as complementary to other development and trade policies to provide and integrated package for reform. In general, public policies should respect a Hippocratic Oath: First do no harm.

3. Evolution of Competition Policy

Competition policy evolved from antitrust policy in the U.S., which can be traced back to the Sherman Anti-Trust Act, enacted in 1890.[19] By this time, railways had dramatically extended throughout the U.S. along with the expansion of telegraph and telephone services. This revolution in transportation and communication moved domestic trade closer to a single U.S. market. Firms took advantage of the potential economies of scale and scope. Technological advancements in other fields (e.g., metallurgy, chemicals, energy), the growth of capital markets, and the development of new managerial methods also tended to increase firm size through both expansion and mergers. While the increased firm size brought cost advantages, it also increased market concentration, thereby inviting anti-competitive behaviors.

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[19] See Motta 2004, Chapter 1 for an extensive account of history of competition policy.

The Sherman Anti-Trust Act addressed price fixing, market sharing agreements between two independent firms, and monopolization practices of a single firm. As mergers were increasingly substituted for cartels, Congress passed the Clayton Anti-Trust Act in 1914, providing for merger regulation and the prohibition of price discrimination and tie-in-sales. The Federal Trade Commission was established at the same time, thus sharing enforcement with the Department of Justice and establishing consent decrees as an alternative enforcement mechanism. By the mid-1980s, the "Chicago School" critique of anti-trust intervention in the 1960s and 70s (big is not necessarily bad, e.g., Demsetz 1973, Brozen 1974, and Baumol, Panzer, and Willig 1982) had reoriented enforcement to the documentation of harm, not just industry concentration.

Competition law in Europe evolved from its practice in Germany. Originally, competition and price warfare were viewed as destabilizing, such that price-fixing agreements by cartels were allowed. By 1923, however, the proliferation of cartels and price agreements were seen as contributing to Germany's hyperinflation. This led to the introduction of Germany's Cartel Law. Lacking sharp teeth, the Law had little impact, however, and the number of cartels continued to increase. During the Great Depression, cartels were viewed as helping to avoid bankruptcy. During the Nazi period, cartels were seen as promoting "national champions" in the war effort (Motta 2004). It was only in 1957 that a strict competition law was passed in Germany, establishing the Federal Cartel Office to enforce rules against price-fixing agreements and other anti-competitive behavior (Motta 2004).

A series of pro-competitive measures was adopted by France, Germany, Holland, Belgium, Luxembourg, and Italy in 1951, including the European Coal and Steel Community to guard against economic domination by Germany and to make essential inputs accessible to other countries. Buoyed by the role of competition in the U.S. economic success, the 1951 Treaty of Paris founded competition law on the principles of market efficiency, European market integration, and non-discrimination on the basis of national product origin/destination (Motta 2004).

The United Kingdom introduced the Profiteering Act 1919, also motivated by inflation. After the World War II, unemployment concerns led to the Monopolies and Restrictive Practices (Inquiry and Control) Act of 1948, however specific objectives and tools of enforcement remained vague. In 1998, with the passage of Competition Act, competition law in the UK became aligned with that of the European Union.

Overall, the European system places somewhat more emphasis on consumer and worker welfare, whereas the US system is commonly viewed as focusing more on economic efficiency, including producer welfare. The European system is also oriented to limiting economic power spilling over into the political system.

Around the world, the number of countries adopting and enforcing competition law has rapidly increased. Between 1970 and 1990, countries with competition law increased from 9 to 23 with competition authorities increasing from 6 to 16 in the same period. Between 1990 and 2013, the number of countries with competition authorities increased to 127, with 120 of those having a competition authority (Figure 4).

Figure 4. Number of jurisdictions with Competition Law and Competition Authorities
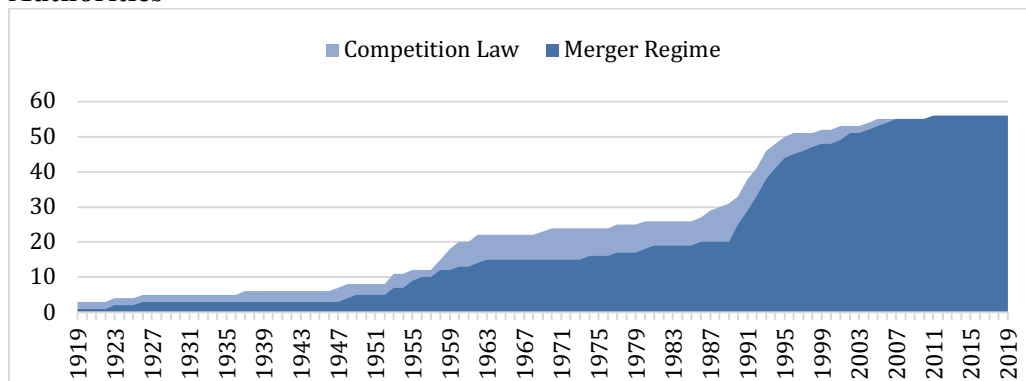
Source: OECD CompStats Database as of June 2021

The widespread adoption of competition policy after 1990 was part of the global movement towards greater economic and political liberalization (Palim 1998). The maturity and modernity of competition policy were influenced by a country's stage of development. The increase after the 1990s can also be attributed in part to the rise of trade liberalization, e.g., as indicated by the advent of the World Trade Organization (WTO).

In addition to the relationship between competition-policy adoption, trade liberalization and stage-of-development, pressure from multilateral organizations may also help explain the rapid adoption of competition law after 1990, including by the Organization for Economic Cooperation and Development (OECD), the European Union, the World Bank, United Nations Conference on Trade and Development (UNCTAD), and Asian Development Bank (ADB). Competition is also held to be one of the key pillars of ASEAN integration. Member countries are required to adopt competition law, regardless of their level of development.

4. Competition policy and economic development: some empirics

4.1. The role of competition policy in development: previous results

There is a substantial empirical literature on the development effects of competition and competition policies. Ma (2011) shows a positive relationship between effective

enforcement of competition law, as proxied by "government effectiveness," and productivity growth, although the relationship is insignificant for developing countries. Voight (2009) finds that independence of the competition agency is decisive. De facto independence is most significant for explaining variation in total factor productivity whereas the indicators for both the *de jure* independence and the economic reasoning are not significant.

Petersen (2013) found that the introduction of antitrust law has a positive effect on the level of GDP per capita and economic growth after ten years. Romero et al. (2016) showed that there is a significant and positive correlation between competition law and per capita GDP worldwide but not for the subgroup of Latin American countries. Dalkir (2015) found that effectiveness varies significantly across countries according to level of development, experience (years) with competition law, and EU status, even after controlling for budget allocation. Results of Gutmann and Voigt (2014) show that the presence of competition law as well as the duration of its operation help to explain growth, FDI and productivity growth. Clougherty (2010) utilized data from 32 antitrust bodies and found that a nation's budgetary commitment to competition policy plays a significantly positive role in economic growth.

Overall, these studies suggest that competition and competition policies do affect economic development, albeit by varying degrees. Some of the difference in estimated effects is due differences in variables and estimation methods. A particular challenge is dealing with reverse causation (endogeneity). On the one hand, the level of a country's per capita income plays a role in the nature of competition policy. One the other hand, the whole purpose of competition policy is to increase productivity and economic growth. Two particular studies that controlled for endogeneity issues are those of Borrell and Tolosa (2008) and Buccirossi et al. (2013).

Using cross-country data for 52 countries in 2003, Borrell and Tolosa (2008) find that the impact of antitrust enforcement on total factor productivity is positive and statistically significant. The measure of effectiveness comes from the World Economic Report survey on anti-monopoly policies, which ranks countries according to policy effectiveness from one to seven. They treat anti-monopoly policies and openness to international trade as their policy variables that affect productivity. Thus, there is simultaneity bias because the policy variables are endogenous. To address this issue, they estimated the productivity and policy equations jointly using three-stage-least-squares (3SLS), which requires a set of instruments. In this case, the instruments are institutional factors that determine the policy variables but are uncorrelated with productivity. These include latitude, regional dummies, percentage of English speakers, and dummy variables for federalism, colonial origins, and corruption. The paper finds that treating antitrust policy as exogenous overestimates the impact of competition on productivity by as much as 18% and underestimates the impact of trade openness on productivity by 37%.

Buccirossi et. al. (2013) used cross-country panel data for 22 industries in 12 OECD countries from 1995 to 2007 and created a Competition Policy Indices based on measures of antitrust infringement, merger control processes, institutional features, and enforcement features of each jurisdiction. To address endogeneity issues, the study uses several instruments related to governmental stance towards competition and regulation. These include government's pro-regulation attitude, its limitations of the welfare state, the need for economic planning, and the extent of a pro-EU attitude of the government. After controlling for endogeneity issues, they find that their aggregate and individual indices of competition policy have positive and significant effects on total factor productivity growth. Institutions and antitrust law have the strongest and most significant impacts compared to enforcement effort and merger control effects.

As Waked (2008) has noted, many studies may overestimate the effect of competition policy on measures of economic performance by attributing to competition policy what may have resulted from economic liberalization and other reforms. In addition, as just discussed, there is a problem of reverse causation. Recall that before 1990, adoption of competition policy was correlated with per capita income, but it is difficult to determine the contributions of different causal pathways. Controlling for other contributing factors and confronting the endogeneity problem tends to reduce the estimated impact of competition policy on economic performance.

4.2. Effect of competition policy on growth

In what follows, we contribute to the discussion in the literature by comparing the economic growth of countries that adopted competition law vis-a-vis those that did not adopt. We constructed cross-country data from 1975-2015, allowing us to investigate the effect of adoption of competition law on economic growth. In the spirit of Barro's (2003) growth regressions, we focused on decadal average growth rates of countries for the periods of 1975-1984, 1985-1994, and 1995-2015, each of which corresponds roughly to a particular regime. The first period, 1975-1984, is characterized by the post-World War II wave of competition law (Edwards 1974 as cited by Palim 1998). The second period, 1985-1994, was the decade leading up to the creation of the World Trade Organization in 1995. The fall of the Berlin Wall in 1989 also paved the way for the proliferation of a more liberal market policies in formerly centrally planned economies (Palim 1998). The third period, 1995-2015, was characterized by two major shocks, the 1997 Asian financial crisis and the 2008-2009 global economic crisis. We collated the information on countries with competition law from Palim (1998), Voigt (2009), Armoogum (2016) and recent country reports.

Table 1 gives the number of countries with and without competition policies by the start of each decade under consideration. Our sample includes 205 countries, with 89 countries adopting competition law by 1995. Prior to the conducting a formal analysis, it is instructive to examine the average economic growth of countries that adopted competition law versus those countries that did not. Economic growth is captured by the decadal average growth rate of GDP per capita. A simple t-test reveals that the mean average growth rates for countries that adopted competition law is higher at 2.62 and the difference is significant using two-tailed test (Table 2).

Table 1. Number of countries that adopted competition law in our data.

Period	Adopted	Not Adopted
1975 - 1984	14	191
	(7%)	(93%)
1985 - 1994	69	136
	(34%)	(66%)
1995 - 2015	89	116
	(43%)	(57%)

Total number of countries = 205

Source of basic data: Palim (1998), Voigt (2009) and Armoogum (2016).

Table 2. Average growth rates of GPD per capita, 1975-2015.

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Not Adopt: 0	395	1.52	0.22	4.34	1.09	1.95
Adopt: 1	170	2.62	0.15	1.94	2.33	2.91
diff		-1.10	0.26	0.00	-1.62	-0.58

Diff = mean (0) – mean (1); **t = -4.15** | Two-tailed test: **Pr (T > t) = 0.0000**
Satterthwaite's degrees of freedom = 562.29

We estimate a Barro economic growth model to investigate the impact of adoption of competition law on a country's long-term economic growth. Our dependent variable is decadal average growth rates of GDP per capita for the periods of 1975-1984, 1985-1994, and 1995-2015. A simple approach in examining the difference in the economic growth between adopters and non-adopters of competition law is the inclusion of a dummy variable equal to one for those adopting countries, and then, apply panel fixed effects (i.e.

representing country characteristics as constant within each decade). But this would give a biased estimates.

In estimating the impact of adoption of competition law on economic growth, we recognize that adoption of competition law is endogenous (reverse causality). That is, countries may choose to adopt – or not adopt – competition law depending on their circumstances, including level of economic development, institutions, and geography. This suggests a potential self-selection problem in our data, specifically that some of the determinants of adoption may also contribute to economic growth. The idea is illustrated in Figure 5, with the log of GDP per capita in the y-axis and time on the x-axis. Thus, the slope of the line gives the growth trajectory of two groups of countries, adopters (A) and non-adopters (N). The solid lines represent the observed or actual growth trajectories, and the dashed lines are counterfactuals. Before the time of adoption, A and N are on different growth paths. Adopting countries adopted because doing so increases growth. Had non-adopting countries adopted, it would have decreased growth. To address this issue of self-selection based endogeneity problem, we employ an endogenous switching regression (Lee & Trost, 1978) allowing for the interdependence of economic growth and adoption of competition law.

Figure 5. Income growth and adoption of competition law.

Legend:
A – Adopting countries actual growth trajectory
$A^{'}$ – Counterfactual of A
N – Non-adopting countries actual growth trajectory
$N^{'}$ – Counterfactual of N
t_o – time of adoption
t_1 – period after adoption
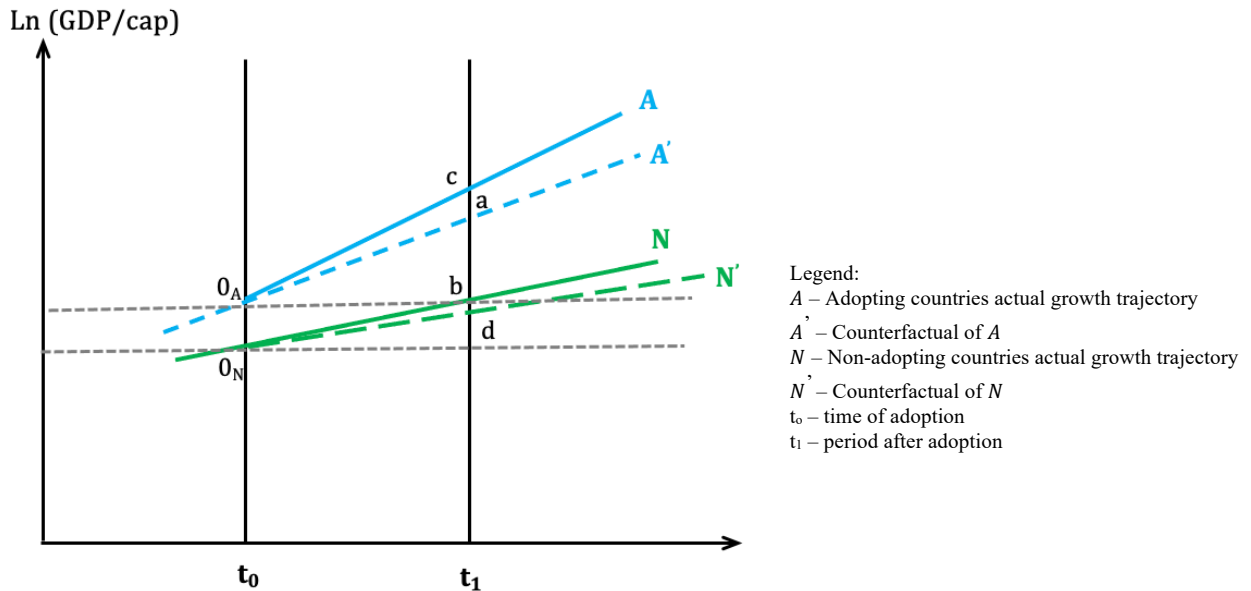
We test the hypothesis that competition law increased growth rates in adopting countries. The following model consists of the switching equation determining adoption and two growth equations for adopting and non-adopting regimes (Maddala 1983, pp. 223-224; Di Falco et al. 2011):

Switching equation:

$$I_i^* = \gamma \mathbf{Z}_i + \eta_i \quad \text{with } I_i = \begin{cases} 1 & if\ I_i^* > 0 \\ 0 & Otherwise \end{cases} \tag{1}$$

Regime equations for economic growth:

Adopting $\qquad\qquad y_{Ai} = \beta_0 + Y_{At0} + \boldsymbol{\beta_A}\boldsymbol{X}_{Ai} + \varepsilon_{Ai}$ $\qquad\qquad$ (2)

Non-adopting $\qquad y_{Ni} = \beta_0 + Y_{Nt0} + \boldsymbol{\beta_N}\boldsymbol{X}_{Ni} + \varepsilon_{Ni}$ $\qquad\qquad$ (3)

Where I_i^* is a latent variable (inferred, not observed) that determines a country's decision to adopt competition law. $\boldsymbol{Z}_i$ is a vector of factors influencing adoption. We cannot estimate equation (1) directly because I_i^* is not directly observed.-The hypothesized relationship between I_i^* and I_i is that I_i is one whenever the expected benefits, i.e., economic growth, with adoption is positive, zero otherwise. This gives the estimating equation, $I_i = \delta \boldsymbol{Z}_i + \mu_i$.

y_{Ai} and y_{Ni} are decadal average economic growth rates of adopting (A) and non-adopting (N) countries, respectively. Y_{At0} and Y_{Nt0} are the initial per capita GDP. $\boldsymbol{X}_i$ is a vector of explanatory variables that influence long-term economic growth The vector of parameters is β_0, $\boldsymbol{\beta_A}$, $\boldsymbol{\beta_N}$, and γ. The error terms are ε_A, ε_N, and η.

We estimate a switching regression model (Lee & Trost, 1978) by using the logarithmic likelihood function.-Then $\boldsymbol{\beta}$ and γ are estimated via full information maximum likelihood (FIML) to simultaneously fit binary and continuous parts of the model in order to yield consistent standard errors. The simultaneous maximum likelihood estimation of equations (1) to (3) corrects for the selection bias in the estimates of regime equations for economic growth. This approach relies on joint normality of the error terms in the binary and continuous equations (Lokshin & Sajaia, 2004). Switching regression is appropriate when adoption (akin to treatment) would affect coefficient estimates by rotating the regression line (Clougherty et. al 2016).

Following Barro's empirics, our vector of explanatory variables, $\boldsymbol{X}_i$, are categorized into two groups, the initial-condition variables and the time-varying variables. The initial-conditions variables reflect the values of those variables at the beginning of the period, i.e., at t_0. The time varying variables are differences between values in the ending and the beginning years for a decade. Table 3 and Table 4 provides our summary statistics and data sources for all countries and for the two group of countries, respectively. Initial conditions variables include the level of per capita GDP (in logs) at the beginning of the period. The coefficient of this variable is the rate of convergence from the neoclassical model and convergence theory of Barro and Sala-i-Martin (1995, Chs. 1 and 2), which states that the long-term growth of real per capita GDP is inversely related to initial level of per capita GDP. The other initial conditions include the stock of human capital

represented by the health capital, fertility rates (in logs) and the total average years of education completed among people over age 15. The health capital is proxied by the log of the reciprocal of life expectancy at age one, (roughly the average probability of dying) (Barro 2003). Fertility affects population growth. In turn, population growth negatively affects the steady state ratio of capital to effective workers. Moreover, in the neoclassical growth model, higher fertility rates negatively affect economic growth.

Table 3. Summary statistics for all countries.

Description	Source	Variable name	All countries		
			Obs	Mean	Std. Dev.
Ave. growth of GDP per cap	WDI, World Bank (2020)	*GrGDPcap*	568	1.85	3.80
Initial conditions					
Log of GDP per capita	WDI, World Bank (2020)	*Lgdpcap*	521	8.33	1.53
Log of 1/(Life expectancy)	WDI, World Bank (2020)	*LOneLife*	567	-4.18	0.16
Log of fertility rates at birth	WDI, World Bank (2020)	*Lfertility*	567	1.14	0.55
Total years of schooling	WDI, World Bank (2020)	*Schl15Tot*	429	6.93	2.89
Time Varying Variables					
Economic freedom	Fraser Institute (2016)	*EF_ch*	477	3.25	6.78
Economic freedom square	Fraser Institute (2016)	*EF_ch_sq*	477	56.43	117.74
Gov. effectiveness	Worldwide Governance Indicator (2020)	*GEE_ch*	609	0.00	0.29
Gov. expenditure (% of GDP)	WDI, World Bank (2020)	*GovExp_ch*	543	-0.01	4.82
Inflation	WDI, World Bank (2020)	*Inflation_ch*	540	-37.06	562.82
Political freedom	Freedom House (2016)	*PF_ch*	585	0.19	1.09
Regulatory quality	Worldwide Governance Indicator (2020)	*RQE_ch*	609	0.00	0.31
Trade as % of GDP	WDI, World Bank (2020)	*TradeOpen_ch*	570	3.24	31.94
Effectiveness of anti-monopoly policies	World Economic Forum, 2020	*Antitrust_ch*	285	-0.07	0.34
Regional and multinational pressure	Authors' calculation	*RegMPr*	618	26.10	22.17
Adoption of CL	Palim (1998), Voigt (2009), Armoogum (2016)	*Adoption*	615	0.28	0.45

Notes: Scores of Economic freedom are 1 to 10, low to high. Gov effectiveness index ranges from -2.5 to 2.5 low to high. Political freedom is measured on a one-to-seven scale, low to high (we reverse the scale from the original source for comparability with other indices and easier interpretation). Regulatory quality index ranges from -2.5 to 2.5 low to high. Effectiveness of anti-monopoly policies at ensuring fair competition ranges from 1 - not effective to 7 - extremely effective.

The time-varying variables include the change in: economic freedom and its square (*EF_ch* and *EF_ch_sq*), government effectiveness (*GEE_ch*), government expenditure (% of GDP, *GovExp_ch*), inflation (*Inflation_ch*), political freedom (*PF_ch*), regulatory quality (*RQE_ch*), and trade openness (trade as % of GDP, *TradeOpen_ch*). The degree of economic freedom is a composite index capturing the size of government, legal system and property rights, sound money, freedom to trade internationally, and regulation (Fraser

Institute, 2016). Political freedom serves as a proxy for good governance   taken as the average of political rights and civil liberties indices (Freedom House, 2016). Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (Worldwide Governance Indicator, 2020). Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (Worldwide Governance Indicator, 2020).

Table 4. Summary statistics for adopting vs non-adopting countries.

Description	Variable name	Countries that adopted CL				Countries that did not adopted CL			
		Obs	Mean	Min	Max	Obs	Mean	Min	Max
Ave. growth of GDP per cap	*GrGDPcap*	170	2.62	-1.71	9.69	395	1.52	-37.00	37.99
Initial conditions									
Log of GDP per capita	*Lgdpcap*	170	9.04	5.91	11.53	348	7.96	5.13	11.88
Log of 1/(Life expectancy)	*LOneLife*	170	-4.26	-4.41	-3.77	394	-4.14	-4.40	-3.44
Log of fertility rates at birth	*Lfertility*	170	0.76	0.07	1.92	394	1.31	-0.13	2.18
Total years of schooling	*Schl15Tot*	160	8.74	1.57	12.86	266	5.81	0.61	11.71
Time Varying Variables									
Economic freedom	*EF_ch*	168	3.70	-18.08	26.80	306	3.02	-25.90	27.70
Economic freedom square	*EF_ch_sq*	168	62.90	0.00	718.08	306	53.39	0.00	767.29
Gov. effectiveness	*GEE_ch*	171	0.06	-0.99	0.84	435	-0.02	-1.28	1.28
Gov. expenditure (% of GDP)	*GovExp_ch*	169	0.18	-15.81	10.11	371	-0.09	-28.24	29.42
Inflation	*Inflation_ch*	163	-14.55	-691.24	94.66	374	-47.17	-11741.77	1849.90
Political freedom	*PF_ch*	172	0.13	-2.50	3.50	410	0.21	-3.00	5.50
Regulatory quality	*RQE_ch*	171	0.04	-1.23	1.52	435	-0.02	-1.30	1.22
Trade as % of GDP	*TradeOpen_ch*	169	5.24	-90.96	110.59	398	2.34	-345.26	220.19
Effectiveness of anti-monopoly policies	*Antitrust_ch*	165	-0.12	-1.80	1.16	117	0.01	-0.34	0.59
Regional and multinational pressure	*RegMPr*	172	44.98	2.08	70.69	443	18.63	0.00	70.69

Cognizant that adoption of competition law does not necessarily mean that implementation of the law across countries would be the same, we included the variable *Antitrust_ch* in the growth equation. This variable captures the change in the effectiveness of anti-monopoly policies at ensuring fair competition from the Global Competitiveness Report of World Economic Forum. The report is a result of a survey among executives on their perception about the business environment in their country.

Our variables for the selection equation of adopting or not adopting competition law include the initial level of per capita GDP (in logs) at the beginning of the period, economic freedom, political freedom, regulatory quality, government effectiveness, trade openness. We included the variable regional and multinational pressure (*RegMPr*), which serves as a proxy for peer pressure from multilateral organizations and from neighboring countries. The variable *RegMPr* is the proportion of countries in the World Bank's regional grouping with competition policies in a given year. The inclusion of this variable follows from the discussion in Section 4.1.

4.3.   Discussion of Results

Table 5 presents our estimates using panel fixed effects and the endogenous switching regression model estimated by full information maximum likelihood (FIML). Our dependent variable is the decadal average growth rates of GDP per capita for the periods of 1975-1984, 1985-1994, and 1995-2015. *Adoption* (one if the country adopted competition law before or at the starting year of our three decadal period and zero otherwise).   We first apply the simple approach, the panel fixed effects. The estimated parameter for *Adoption* is positive as expected and significant at the five percent level (column 1). This result can be interpreted as adoption increases decadal average growth rates of GDP per capita by 0.67 relative to countries that did not, holding other things constant. However, since this approach assumes that adoption of competition law is exogenously determined, the estimates may be biased and inconsistent. The approach also does not distinguish the potential difference in the growth of country groups. Thus, it can be misleading.

We implemented endogenous switching regression using Stata's "*movestay*" command (Lokshin & Sajaia, 2004, 2008) to estimate parameters of the model. Column (2) presents the estimated coefficients of switching equation (3), i.e., choosing either to adopt or not adopt competition law. The results of the switching equation shows that the variables log of GDP per capita and regional and multinational pressure are positive and significant at one percent level. These results are consistent with the findings in Ravago, Roumasset, & Balisacan (2021) that in in addition to the level of development there are other factors that influence adoption. This also provides support to the observation that pressure from multilateral organizations and neighboring countries, and the condition of having a competition policy imposed on being a member of regional agreements are important determinants of adoption.

Description	Variables	(1) Panel FE	(2) Adoption (1/0)	(3) Adoption = 0 Gr. GDP/cap	(4) Adoption =1 Gr. GPD/cap
Initial conditions					
Log of GDP per capita	*Lgdpcap*	-4.461***	0.258***	-1.396***	-0.864***
		(0.749)	(0.086)	(0.186)	(0.153)
Log of 1/(Life expectancy)	*LOneLife*	-1.235		0.209	-2.280
		(2.688)		(2.745)	(1.564)
Log of fertility rates at birth	*Lfertility*	-4.143***		-4.914***	-1.801***
		(0.764)		(0.617)	(0.477)
Total years of schooling	*Schl15Tot*	0.263		-0.019	0.090
		(0.181)		(0.126)	(0.079)
Time Varying Variables					
Economic freedom	*EF_ch*	0.070**	0.027	0.067**	-0.006
		(0.028)	(0.018)	(0.028)	(0.031)
Economic freedom square	*EF_ch_sq*	-0.003**		-0.004***	0.003
		(0.001)		(0.001)	(0.002)
Gov. effectiveness	*GEE_ch*	0.304	-0.196	1.713	0.328
		(0.386)	(0.562)	(1.049)	(0.499)
Gov. expenditure (% of GDP)	*GovExp_ch*	-0.000		-0.084	-0.081*
		(0.024)		(0.056)	(0.043)
Inflation	*Inflation_ch*	0.000*		0.000	0.011***
		(0.000)		(0.001)	(0.004)
Political freedom	*PF_ch*	-0.115	0.068	-0.532***	0.073
		(0.073)	(0.100)	(0.144)	(0.129)
Regulatory quality	*RQE_ch*	1.018***	-0.056	0.147	1.091**
		(0.374)	(0.526)	(0.855)	(0.481)
Trade as % of GDP	*TradeOpen_ch*	-0.009	-0.006	0.016**	0.002
		(0.005)	(0.005)	(0.008)	(0.005)
Adoption of CL	*Adoption*	0.666**			
		(0.322)			
Effectiveness of anti-monopoly policies	*Antitrust*			0.370	1.069***
				(1.437)	(0.319)
Regional and multinational pressure	*RegMPr*		0.081***		
			(0.012)		
Constant	*Constant*	36.563***	-3.709***	19.773*	1.173
		(11.972)	(0.836)	(11.447)	(6.396)
Observations		353	241	241	241
Number of countries		126			
R-squared		0.499			
lns				0.439***	0.297***
				(0.092)	(0.060)
r				-0.842***	0.278
				(0.325)	(0.264)

LR test of independence equations: chi2(2) = 8.65 | Prob > chi2 = 0.0132

Dependent variable is decadal average growth of GPD per capita, 1985-1994, 1995-2004, 2005-2015. PRobust pval se in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The *Rho* values are the correlation coefficients between the error term (η_i) in the selection equation and the error terms $(\varepsilon_{Ai}$ and $\varepsilon_{Ni})$ in the growth equations (1) and (2). These are reported using the transformation of the correlation (r). *Rho* accounts for the endogenous switching in the growth equations. Only the r for the non-adopters is significant and negative. Thus, the hypothesis of absence of sample selectivity bias may be rejected among the non-adopters. Moreover, the switching regression is more appropriate than the panel-fixed effects regression. The likelihood ratio test of independence of the selection and outcome equations indicates that we can reject the null hypothesis of no correlation between adoption and the growth equation.

We now turn to effect of adoption on long-term growth. The coefficient estimates in Table 5, columns (3) and (4) pertain to the growth equations for non-adopters and adopters, respectively. The estimates of the log of real per capita GDP are -1.396 for non-adopters and -0.864 for adopters. This result is consistent with conditional convergence reported in many studies (Barro 2003, 1991; Mankiw, Romer, and Well 1992). The estimated coefficient of the log of fertility rates are also negative and significant as expected.

Among the time-varying variables, the change-in-economic freedom and its square are positive and negative respectively, and both are significant in the growth equation for non-adopters but not for adopters. This implies that increases in economic freedom stimulate growth but that the positive influence diminishes as economic freedom increases. This also explains why economic freedom is insignificant in the growth equation of adopters. The change in the political freedom variable is negative and significant and the change in trade openness variable is positive and significant for the growth equation of the non-adopters. On the other hand, the variable, change-in-government-expenditure, is negative and significant, and the change-in-inflation variable as well as the change in regulatory quality are positive and significant in the growth equation of adopting countries.

While economic development influence adoption of competition law, once adopted and enforced, competition law may affect the trajectory of economic development (Borrell & Tolosa, 2008; Voigt, 2009; Clougherty, 2010; Ma, 2011; Petersen, 2013, and Buccirossi, et al., 2013). We included the variable *Antitrust* in the growth equation to capture the effectiveness of anti-monopoly policies at ensuring fair competition after considering endogeneity in the decision whether to adopt competition policy. The estimated coefficient of this variable is significant for adopting countries (1.07) but not for non-adopting countries.

We now compare the income growth of adopting vs non adopting countries by examining the conditional expectation, treatment effects, and heterogeneity effects (see Di Falco et al. 2011 for specification). Table 6 reports the corresponding predicted values. Table 6 are the expected average growth rates for GDP per capita of the adopting countries and non-adopting countries at 2.45 and 2.33, respectively.

By comparing actual growth in adopting countries to counterfactual growth without adoption (cells [a] vs. [c]), we see that adoption has increased growth in those countries by 0.14. On the other hand, comparing the actual growth of non-adopting countries with the counterfactual of adoption (cells [b] vs. [d]) shows that estimated growth would have been lower growth by 0.42 had they choose to adopt. These results suggest that pressuring countries to adopt law may be counterproductive. First of all, a country may have little interest in enforcing the law, as seems to be the case in Bhutan (UNCTAD 2015); Secondly, to the extent that enforcement attempts are made, they may do more harm than good.

Table 6. Conditional expectation, treatment and heterogeneity (Average Decadal Growth of GDP per Capita as Dependent Variable)

Subsample	Decision Stage		Treatment effects	
	Adopt	Not Adopt		
Adopt (A)	[a] 2.45	[c] 2.32	TT	0.14
Not Adopt (N)	[d] 1.92	[b] 2.33	TU	-0.42
Heterogeneity Effects	BH_A 0.54	BH_N -0.02	TH	0.55

Notes: Author's calculation. (a) and (b) represent the observed expected value of average growth of GDP per capita. (c) and (d) represent the counterfactual expected value. Being observed to adopt CL is like being treated, with adoption as the treatment. TT is the treatment effect on the treated. TU is treatment effect on the untreated. The heterogeneity effect is the effect of base heterogeneity for countries that adopted and those that did not. TH = TT-TU is the transitional heterogeneity.

The last row of Table 6 adjusts for potential heterogeneity in the sample, i.e., accounting for the differences in the characteristics of countries in the sample. Adopting countries have higher growth than countries in the counterfactual case (c). If the two groups include countries with diverse characteristics, the effect of the treatment is different in the portion of countries that differs between the two groups. This implies that there are other factors that explain why growth of adopting countries are higher than the non adopting countries.

## 5. Design and organization of competition authorities in Asia

5.1. The long road to competition in Asia

The first instance of competition law in Asia occurred in the Philippines in 1925 as part of the legal framework under U.S. occupation (Lin 2005). Japan formally introduced competition-policy legislation with the Antimonopoly Law of 1947. South Korea and New Zealand enacted their competition laws in the 1980s followed by Thailand and Indonesia in 1990s (Figure 6). More countries in Asia and the Pacific followed suit in the current millennium. The latest additions include the Philippines, Brunei Darussalam, Lao PDR and Myanmar. As of 2020, there are 20 countries in Asia and the Pacific, including Australia

and New Zealand, with competition laws in place. Cambodia and Afghanistan have drafted competition laws. Bhutan adopted a competition policy in 2020 instead of competition law after consideration of its enforcement capacity (UNCTAD 2015; Royal Government of Bhutan 2020). Spearheaded by the Ministry of Economic Affairs, the national competition policy of Buthan supplies a framework for ensuring coherence in public policy — promoting efficiency, competitiveness, and consumer welfare. The Office of Consumer Protection is responsible for its implementation (Royal Government of Bhutan 2020).

While competition law and policies have evolved rapidly in Asia as reflected by actions of competition authorities and court decisions (Zhang 2015), there has been tension between pro-growth industrial policies and consumer-oriented competition policies. Like the US and the Europe, the evolution of competition policies in Asia have also been intertwined with economic and political history. While competition policies in the Asian region were largely borrowed from the U.S. and Europe, Asian nations have their unique governments, legal systems, business practices, institutions, and culture. We review below the experience of South Korea, Thailand, and the Philippines, chosen to illustrate the spectrum of influence and force of competition laws in Asia.

Figure 4. Timeline of enactment of Competition Law in Asia
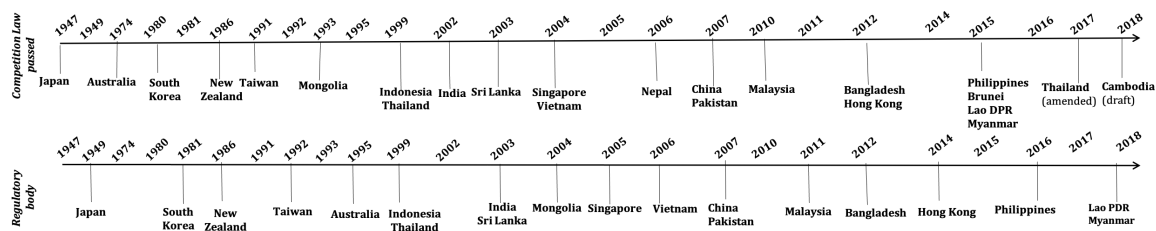
Note: **Southeast Asia** – 9 countries with competition law, 1 with draft (Cambodia); 1 no competition law (Timor Leste); **East Asia** – 5 countries + HK with competition law; 1 no competition law (North Korea). **South Asia** - 5 countries with competition law; 1 draft (Afghanistan); 1 – competition policy (Bhutan); 1 no competition law (Maldives)

South Korea has long been considered a model for economic cooperation because of the strong relationship between government policy and the family-owned industrial conglomerates (*Chaebols*), e.g., Samsung, Hyundai, LG Electronics, and SK Holdings (Roumasset and Barr 1992, World Bank 1993).[20] Following the assassination of President Park Chung-hee in 1979, the new ruling elite enacted competition law as part of sweeping economic and social reforms and in recognition of the particular need to correct and complement industrial policies for development (Lee 2015). The laws were put in place in 1980 (when per capita income was only USD1,598) followed by the creation of the Korean

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[20] Heavy and chemical industries (HCI) were also supported although their growth performance has been relatively sluggish.

Fair Trade Commission (KFTC) in 1981. The law had limited success during most of the 1980s when industrial policy continued to favor selected industries, retarding new entry and suppressing the exit of incumbents. From 1987 to 1997, competition law was refined and, along with additional enforcement mechanisms, has been regarded as one of the strongest in Asia. The KFTC has had notable success in building technical capacity, adapting procedures for timely enforcement, winning the trust of the public through competition advocacy, and securing its independence (Chang and Jung 2005). They have secured a number of convictions, notably of Choi Soon-Sil in 2017, for corruption during the Park administration.

Until recently, Thailand has been at the other end of the spectrum. Thailand's Trade Competition Act BE 2542 was legislated upon the initiative of the Ministry of Commerce in 1999 after the 1997 "People's Constitution" took effect, calling for "free and fair competition." The Thailand Trade Commission (TCC) is the body in-charge of implementing the law. Despite relatively high industry concentration[21] and more than 100 complaints, the TCC failed to punish a single violator (Thanitcul 2015, Nikomborirak 2005 and 2006). The failure stems largely from lack of independence of the TCC, whose chair is also the Minister of Commerce, a politician. The lack of TCC independence removed a potential check on rent-seeking whereby political support is exchanged for the promotion of special interests (Lowi 1969, Olson and Zeckhasuer 1966).

The Philippines has only recently enacted its competition law after four decades of attempts. The Philippine Competition Act (PCA) of 2015 also created the Philippine Competition Commission (PCC), an independent quasi-judicial body created to promote and maintain market competition by regulating anti-competitive conduct. The PCC is seen as a model for young competition agencies, and there are high hopes for its becoming one of the strongest in the region. The PCA provided a transitory period for two years (2016-2018) to allow for the businesses and industries to make voluntary adjustments and reforms in the way they conduct their business. PCA takes full effect in August 2018.

The two-year transitory period was not entirely smooth sailing for the PCC as businesses raced to consummate transactions prior to the release of the implementing rules and regulations (IRR). PCC got its baptism by fire in its case involving the potential duopoly control of the telecommunication industry. The two leading companies have argued that their acquisition and sharing of broadband spectrum from a third company is consistent with a "deemed approved" provision of the transitory merger rule, which was in

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[21] Soap, detergent, vegetable oil, and instant noodle industries have about 8-15 firms, while cement, beer, soda, mirrors, and glass industries have about 2-6 firms each (Thanitcul 2015).

place before the Implementing Rules and Regulations took effect in June 2016. The case was still pending resolution by the Supreme Court at the beginning of 2021.

The timeline for South Korea, Thailand the Philippines and other Asian countries generally conforms to the Palim's (1998) finding that the adoption of competition policy is correlated with per capita income and economic reforms. Trade-liberalization and competition policies in OECD countries were greatly stimulated by the pro-market revolution in economics during the 1980s that co-evolved with the Reagan-Thatcher administrations. Lower income countries adopted competition policies later, especially in the 1990s and the new millennium.

A crucial step in the implementation of competition law is the formation of the competition authority. The bottom panel of Figure 3 shows the timeline when competition authorities in Asia were formed after countries adopted competition laws. In Mongolia, the law was passed in in 1993 but the commission was formed in 2004. The Competition Commission Act of India was enacted in 2002 but Competition Commission of India[22] became fully operational only in 2009 (Zhang 2015). The Myanmar Competition Commission and the Lao PDR Business Competition Commission were both established in 2018.

Competition authorities in Asia are evolving rapidly due to the rise of Asia in global markets. Organizational structures vary according to historical and economic situations. We return to South Korea, Thailand, the Philippines to capture the characteristics of the authorities at various stages of maturity.

5.2. Korea

The Monopoly Regulation and Fair Trade Act (MRFTA) of 1980 prevents abuse of dominance and unfair practices cartels including price, product and quota fixing, resale price maintenance, refusal to sell, and discriminatory pricing. The law also stipulates the need for prior consultation with the trade enforcement agency when enacting competitive restrictive regulation. KFTC does not directly participate in trade policy but can be involved in trade-related regulatory reforms.

The Korean Fair Trade Commission (KFTC), established under the Economic Planning Board in 1981, is at the ministerial-level under the office of the Prime Minister and functions as an independent, quasi-judiciary body for the enforcement of competition policies. The organizational set-up of the KFTC consists of a committee and a secretariat, that function as the decision-making body and a working body, respectively. The Chairperson and the Vice-Chairperson are recommended by the Prime Minister and appointed by the President. remaining seven commissioners are recommended by the Chairperson and appointed by the President. The Commission deliberates and makes decisions on competition and consumer protection issues. The secretariat drafts and

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[22] India is in the curious position of having had a competition law for many years, but one which has been widely held to be inadequate in both its rules and the implementation.

promotes competition policies, investigates antitrust issues, presents them to the committee, and handles them according to the committee's decision.

While the KFTC was created by the MRFTA, it also enforces 11 additional laws including the Fair Subcontract Transactions Act of 1984. Since its inception, KFTC grew and its law enforcement evolved with the economic environment and demand for competition enforcement (Hur 2006). The specific economic and business environment in Korea has led to some differences relative to enforcement operations in the relatively advanced jurisdiction. KFTC pursues its competition advocacy by influencing government's decisions and regulations with the end-goal of building a more competitive market structure and fostering competitive conduct in the business sector in accordance with agreements with other regulatory agencies.

Hur (2006) noted that strength and success enjoyed by KFTC today are due to two main reasons. First, the KFTC faithfully and strongly enforces MRFTA in traditional antitrust areas of mergers, cartels and other unfair trade practices. Second, the KFTC's consumer advocacy has enhanced its reputation with the general public and with other parts of the government.

5.3. Thailand

Thailand's previous competition law and commission were created in 1999, prohibiting unlawful market dominance, mergers that allow unfair competition, collusion to restrict competition, and other unfair trade practices. The Trade Competition Commission (TCC) aims was charged with promoting competition but its power and duties were limited to creating and overseeing a Sub-committee for the investigation of violations. The TCC included senior executives from the Ministries of Commerce, Finance, and the Department of Internal Trade. Secretariat of the TCC is a bureau established within the Department of Internal Trade, Ministry of Commerce. responsible for studying, analyzing, examining and verifying the facts before passing it on to TCC. Due to its lack of independence from Commerce, the TCC was unable to exact even a single penalty for any alleged violation (Thanitcul 2015, Nikomborirak 2005 and 2006).

Due to widespread recognition that the previous TCC was ineffective, a new competition law was passed in 2017. The new TCA created a new TCC consisting of a Chairperson, a Vice Chairperson, and five other Commissioners. The extensive vetting and selection process make the new TCC less immune to regulatory capture. Additionally, the new TCA establishes a new OTCC, which is independent from other parts of the Executive branch. These two changes from the old TCA give the new competition authority independence--a crucial element for the effective enforcement of competition law. For a detailed discussion of the structure, conduct, and scope of competition policy in Thailand, see Ravago, Roumasset & Balisacan (2021).

5.4. Philippines

The Philippine Competition Act (PCA) of 2015 is perceived to be a game-changer in the country's economic landscape. It covers competition issues in all markets. The law prohibits two forms of anti-competitive agreements and behaviors: *per se* violations and those that are subject to "rule of reason." The *per* se violation includes restricting competition (e.g. price fixing) and bid manipulation (including market allocation). Anti-competitive agreements that lessen competition (e.g. by production quotas or geographical market sharing) are subject to "rule of reason". Mergers and acquisition agreements that substantially prevent, restrict or lessen competition are prohibited. Abuse of dominance (e.g. predatory pricing and other barriers to entry) by companies or individuals is also prohibited.

The same act created the Philippine Competition Authority (PCC), an independent quasi-judicial body empowered to regulate anti-competitive conduct. The Commission is composed of 1 cabinet-level Chairman, and 4 Commissioners, who serve for 7 years (without reappointment) with security of tenure. While the PCC has primary jurisdiction over all competition-related issues, sector regulators must also be consulted and allowed to submit opinions prior to the decision of the PCC. The de jure independence of the PCC can potentially be challenged through budget cuts or through challenges via the Court of Appeals or the Supreme Court. For a detailed discussion of the structure, conduct, and scope of competition policy in the Philippines, see Balisacan (2019) and Ravago, Roumasset & Balisacan (2021).

6. Conclusions

Competition policy is part of a country's infrastructure of economic cooperation. In addition to the legal infrastructure supporting property rights and contractual exchange, regulation of anti-competitive practices is needed to appropriate the potential welfare gains from the invisible hand.

The engine of economic development and structural transformation is productivity growth spurred by innovation and specialization. Specialization in particular requires deeper external governance (the growth of the transactions sector) as well as internal governance (agency costs). The challenge for competition policy is to curb anti-competitive behavior, agreements, and organizations without impinging on extra-market governance that promote specialization, innovation, and the coordination of investments. In addition, competition policy must be coordinated with the other instruments of economic development, such as infrastructure, industry, and trade policies.

The perceived tension between whether a competition authority should pursue consumer or total economic welfare may be largely illusory. Due to a bias in transaction costs, suppliers can easily "conspire against the public" while consumers have great difficulty in forming blocking coalitions. The very *raison d'etre* of competition agencies

is therefore to act on behalf of consumers to exercise exactly that kind of countervailing power.

We also provide a preliminary exploration into the nature, causes, and consequences of competition policy. Historically, competition law has evolved in tandem with globalization although with somewhat of a lag. This may indicate a degree of complementarity. For example, falling import barriers in other countries increase the efficiency losses from domestic distortions, thwart potential comparative advantage, and retard the process of specialization.

As competition policy has diffused throughout the world, we can see the changing roles of various determinants. Before the 1990s, per capita income was the most important determinant of a country's decision to adopt competition law, possibly indicating that its importance in the infrastructure of economic cooperation grows with economic development. During the recent years, however, pressure from multilateral organizations and neighboring countries became more important, including requirements for being a member of economic unions such as ASEAN.

Similar to other studies, the negative logs of real per capita GDP, for both adopters and non-adopters, are consistent with conditional convergence. The higher negative value estimates for the non-adopters is also consistent with the prediction of higher growth in response to lower starting GDP per capita, ceteris paribus. While economic development influences the adoption of competition law, once adopted and enforced, competition law may affect the trajectory of economic development. The effectiveness of anti-monopoly policies at ensuring fair competition is only relevant for and positively affects the growth of the adopting countries. The switching-regression results indicate that adoption increased the growth rates in adopting countries but would have decreased growth in non-adopting countries. Adopting countries have higher growth rates than non-adopters, partly because of adoption and partly because of other factors.

Since adoption can negatively effect growth, countries should not be pressured to prematurely adopt competition law. To the extent that international pressure and requirements are relaxed in the future, there still may be a need for more limited international or regional agreements, e.g. the harmonization of policies of Asian countries toward multinational corporations interfering with domestic competition.

The formation of competition authorities follows closely behind the adoption of competition law. While the design and organization of competition authorities in Asia varies according to each country's historical and economic situation, we focus on South Korea, Thailand, and the Philippines as case studies to capture the characteristics of the authorities at various stages of maturity. South Korea is one of the oldest and a relatively strong authority. The relatively young authority in the Philippines appears poised to be strong relative to its cohort. Despite its intermediate tenure, the old authority in Thailand

was perceived to be weak, prompting the country to amend the law. To date, the new TCC is becoming an important part of Thailand's economic environment.

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