Trade-Productivity-Institutional Nexus: Survey of Recent Literatures

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Abstract

Main task of this survey of literature to discuss satisfactory theoretical explanation over two questions: one is *does trade policy cause productivity?* Two is *does institutional set-up of economic governance cause productivity?* By taking Indonesian experiences, this paper tries to seed the light of international trade and productivity, based on the neoclassical and new institutional economic theory. In order to address main task of this survey, it elaborates recent literatures that emphasizes on two strands. First part comes from trade policy which focuses to the strategic importance of firms, as main source of research data and main point of discussion. Besides that, this paper also reviews political institutions play their role in shaping the rule of games, broadly defined as institution and how the interest group influences trade policy, to protect special interest pro-free trade or pro-protectionist measures. Second part sheds light from the productivity literatures that cover the firm level and sector level productivity. Finally, this essay offers conclusions to sum up main argument of the paper.

Keywords: trade policy, productivity, political-and-economic institution, Indonesian economic development.

Abstrak

Tugas utama survei literatur ini untuk membahas penjelasan teoretis yang memuaskan atas dua pertanyaan: *Pertama,* apakah kebijakan perdagangan menyebabkan produktivitas? *Kedua*, apakah pengaturan kelembagaan tata-kelola ekonomi menyebabkan produktivitas? Dengan mengambil pengalaman Indonesia, artikel ini coba menyemai perspektif perdagangan internasional dan produktivitas, berdasarkan teori ekonomi institusional baru dan neoklasik. Untuk menjawab tugas utama survei ini, kami menguraikan literatur terbaru yang menekankan pada dua untai. Bagian pertama berasal dari kebijakan perdagangan yang berfokus pada kepentingan strategis perusahaan, sebagai sumber utama data penelitian dan pokok bahasan utama. Selain itu, survei ini juga meninjau peran institusi politik dalam membentuk aturan permainan, yang secara luas dapat didefinisikan sebagai faktor kelembagaan dan bagaimana kelompok kepentingan mempengaruhi kebijakan perdagangan, untuk melindungi kepentingan khusus perdagangan bebas atau tindakan pro-proteksionis. Bagian kedua menyoroti literatur produktivitas yang mencakup produktivitas tingkat perusahaan dan tingkat sektor. Akhirnya, survei ini menawarkan kesimpulan untuk meringkas argumen utama makalah ini.

Kata kunci: kebijakan perdagangan, produktivitas, kelembagaan ekonomi dan politik, pembangunan ekonomi Indonesia.

INTRODUCTION

Much of research on the theme of trade, productivity, and institution has grounded either on classical theory of political economy the absolute advantage (neoclassical theory), comparative advantage or recent development of endogenous growth theory. Each school had provided deep insights and predictions over the rapid trade among regions. Absolute advantage built upon Adam Smith's idea that free trade is not only desirable but also promotes. Since free-trade is the best option for a country to increase its development. Whereas, comparative advantage built upon David Ricardo's comparative advantage because there are scarce resources among country. Therefore, it is more obvious for a country to specialize and producing a product, and later on, trade each other for achieving better off for everyone.

Extending Ricardo's comparative advantage, there are two models which generate predictions over preferences of trade policy. These two models are Hecksher-Ohlin (HO model) and Ricardo-Viner (RO model) (Alt *et al* 1996; Rogowski 1987; Plouffe 2017). The most recent theory of international trade developed in conjunction with endogenous growth theory or more commonly known as the increasing return scale under new growth theory (Romer 1986) and its relation with economic geography (Krugman 1991).

Broadly speaking, three models are useful to provide explanations for recent development over international trade in the late 20th century up to pre-Global Financial Crisis 2008. Nevertheless, one have to rigorously look at factual figures on trade share of economic growth as well as the outcome of economic development, for instance gross domestic product per capital. In order for us to have comparable narrative story of growth, in this paper I use four Asia countries – Indonesia, South Korea, Malaysia, Taiwan and Thailand- first, third and last country located in Southeast Asia region. While the second and fourth country belonged to East Asia region. To summarize their economic achievement, this article depicts table 1 consist of population, GDP per capita, trade share as percentage of GDP and changes for each comparable indicator of which compare two time points of 1965 and 2020:

Table 1. Comparing Five Asian Countries

Countries	Populations (millions)		Changes	GDP per capita		Changes	Trade share (Percentage of GDP)		Changes
	1965	2000		1965	2000		1965	2000	
Indonesia	104	275	1.64	608	3.869	5.36	24	33	37.50
Korea Selatan	29	51	0.76	1058	31.631	28.90	27	69	155.56
Malaysia	9	33	2.67	1671	10.421	5.23	80	116	45.00
Taiwan	13	23	0.77	1660	25.873	14.59	41	103	151.22
Thailand	31	69	1.23	1136	7.186	5.33	35	98	180.00

Source: Temple (2003) for 1965; CIA Fact book, World Bank, CEIC for 2020 (Indonesia, South Korea, Malaysia and Thailand) and Taiwan's figure from Trading economics

Table 1 illustrates three main comparable indicators including first population, in terms of nominal population the rank successively as follow Taiwan (less), Malaysia, South Korea, Thailand and Indonesia (most). However, in terms of changes Malaysia's changes of population is the most rapid from 1965 to 2020 approximately 2.67 percent. Second indicator GDP per capita broadly defines as total final goods and services produced by one country's economy divided by total number of population. The rank for nominal GDP per capita as follow: Indonesia (less), Thailand, Malaysia, Taiwan and South Korea (most). Moreover, two East Asian countries experienced above mean of GDP per capita changes. Last indicator is trade share as percentage of gross domestic product, three countries experienced changes of trade contribution for their GDP above 100 percent are South Korea, Taiwan and Thailand. It is not surprising that trade contribution to GDP for two East Asian country probably the source of their wealth, trade-led development hypothesis (Robertson 2000).

This literature survey emphasizes attention for a single country that is Indonesia. There are two main reasons for making Indonesia as sample study. *First*, the country experience major changes of economic landscape after the 1998 Asia Financial Crisis. MacIntyre (2001) documented the politics of economic crisis in Southeast Asia by focusing its paper to economic consequences of political institution. His paper was one of the few political economists utilizing concept of veto player to explain changes in political system of four ASEAN countries which badly effect by the financial turmoil: Indonesia, Malaysia, Thailand and Philippines. *Second*, there was profound changes that occurred in the political system of which the country entered a transition to democracy after the monetary crisis.

Built upon thoughtful work of two economists, Hausmann and Rodrik, declare that "you (the country) become what you export". When a country can only export natural resource provided by the nature, then institutional setting particularly political institution would have leanings toward extractive one rather than inclusive institution. It means that dividend of natural resources may not divide among commoners (masses) rather than belong to elites. Moreover, elites would try their best to maintain status quo for better or worse for securing their future, their children, may be grand-children and families.

Therefore, our article depicts the export product of Indonesia compared two point of time 2000 (after Asia Financial Crisis) and 2018 (prior-Indonesian economies contract). Figure 1 illustrates Indonesia's exporting product. To the right, export product is manufacturing while to the left, export product is natural resource-based – agriculture, oil and gas, or mining products. General aim, this essay provides some descriptions over empirical gaps regarding the country productivity performance based on firm level evidence. While figure below depicts broad export performance across time. Former point of time (2000) was selected due to the fact, economic growth of Indonesia already bounced back after severe crisis. Later point of time (2018) selected two years before pandemic hit. Data source from Atlas Economic Complexity, compiled from many sources.
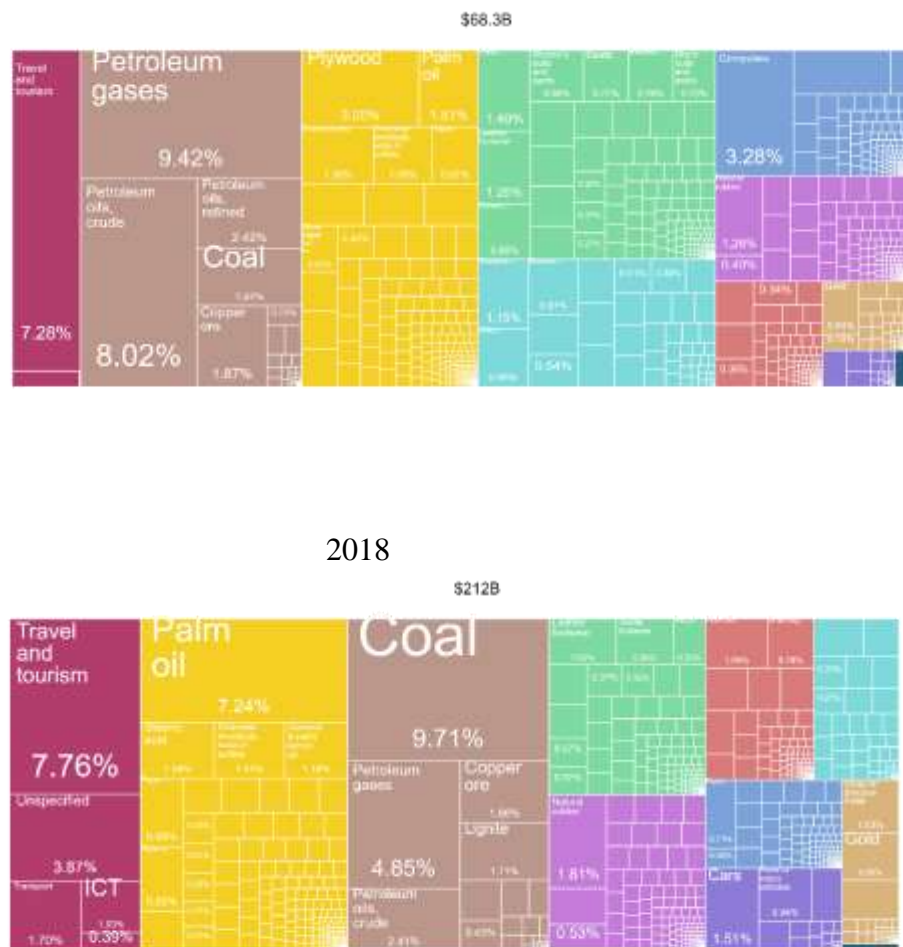
2000

2018

Figure 1: What Indonesia Export? Source: Atlas Economic Complexity

It had been obvious fact and almost every country can achieve increasing nominal export as figure 1 reports export Indonesia increase from 68.3 billion USD to 212 billion USD (2018). Nevertheless, what Indonesia export generally did not transform substantially. Petroleum gas was no longer the country main export product, it was changed by coal and palm oil. To the right position of figure 1 is value-add product than to the left position which the extractive product such palm oil, coal, copper and nickel, except far left the travel and tourism consider as service industry. The product which the firm can export would also reflect productivity of Indonesian firms. Previous study from Amiti & Konings (2007), Vial (2008) were focusing their attention to understand comprehensively on the productivity based on firm level insights. Based on the argument of conceptual problem, this survey comprehend with table 1 and figure 1 so can better understand by the reader on my research interest.

Needless to say, the research interest emphasizes on trade liberalization as mean of trade policy, as explanatory variable. Trade liberalization refers to delete trade obstacles for example of quotas, nominal and effective rate of protection also thexchange control (Todaro & Smith 2015). This survey uses trade literature based on firm-based approach as suggested by both

economics studies and political science, for instance Melitz & Trefler (2012), Helpman (2006), Kim & Osgood (2019) and Plouffe (2017).

Beside trade liberalization, the research interest also covers productivity as outcome variable, as this paper elaborates what determines firm productivity and how sector influence industry productivity (Syverson 2011), discusses also recent observation of Bloom et al (2020), Plouffe (2017) and Amiti & Koenings (2007). This survey also shall discuss concept of political institution, of which I assume play important role setting up rule of games. I shall briefly North's institution theory (1990) and encompassing interest from Olson's paper "Dictatorship, Democracy and Development" (1993). This essay structures its part into three first introduction, second selective literature survey, and thirdly conclusion.

PREVIOUS LITERATURE

To address main task of this essay, it elaborates selective literature survey that emphasizes on two parts survey of literature: **First part** comes from trade economics literature which put firms as main source of data. The sciences behind first part comes from overlapping studies between economic studies and political sciences. On the one side, economists develop their model based on self –interest framework for example HO model based on factor endowment, Grossman & Helpman (1994) "protection for sale" model also based on maximizing utility of producers and maximizing government utility function. On the other side, political scientist enhances trade policy was shaped by political competition among various domestic common interest (Krasner 1976; Keohane 1988; and Lake 1988). This paper also reviews political institutions play their role in shaping the rule of games. Therefore, this survey also introduces and briefly explains trade policy in Indonesia.

Second part of writing reveals insight from the usefulness that cover the firm level and area level efficiency. One of most recent paper firm level and productivity come from Bloom *et al* (2020), their paper examines model of since quite a while ago run development is result of two variables, first viable number of scientists and second their exploration usefulness. Next to Bloom et al paper, usefulness writing additionally profits by past work from Syverson (2011) and explicitly Vial (2008) whose overviewed all out factor efficiency (TFP) development rates for Indonesia medium-and-enormous scope producing. Vial's work additionally like Amiti and Konings utilizing study of assembling firms led by Indonesian factual office. General discoveries on TFP, usefulness improvement has been poor. Table 2 portrays past review assessed TFP as summed up in Vial's paper. It is significant admonition, this paper just report assessment result for assessed TFP regardless of various estimation and industry as object of study might contrast.

Table 2. Comparing estimates of annual TFP growth rates from previous studies

Period/Authors	Osada (1994)	Aswicahyono et al (1996)	Timmer (1999)	Aswicahyono & Hill (2002)
1975-1981			1,00%	
1976-1981		0.70%		
1976-1980				1.10%
1981-1983				-4.90%
1982-1985		1.10%	0.10%	
1984-1988				5.50%
1986-1990			7.90%	
1986-1991		2.10%		
1985-1990	3.60%			
1987-1990	2.40%			
1989-1993				6.00%
1991-1995			2.10%	
1976-1993				2.70%
1975-1995			2.80%	

Source: Vial (2008)

Several general insights can be drawn from table 2. One is all previous studies were conducted during the last decade of Indonesia's 20th century. Estimated TFP was ranged between -4.90 percent (lowest) and 7.90 percent (highest). Recent study from Amiti & Konings indicate TFP growth increase 2.1 percent as output tariff fall 10 percent. Nevertheless, it is not author interest to compare among past literature and current finding. Because every study has its own research problem to be address. Two based on Aswicahyono & Hill (2002), they conclude source for productivity from manufacturing sector. It had experienced TFP growth as direct result of deregulation of sector targeted the commercial policy to be reformed. By this conclusion, this survey get its justification for scrutinizing more detail economic consequences (i.e. productivity growth or TFP) as product of changes in political institution (i.e. deregulation policy). Three is the timing of study also important consideration. As argue by Vial (2008), period between 1975 to 1995 is interesting since during the time encompasses pre-and-post deregulation ear. Broadly speaking, history is matters for any scholars who want to study political economy phenomena. Hence, I discuss briefly trade policy in Indonesia so that any reader may get timely context.

Trade policy in Indonesia

Indonesia trade policy follows path of development similar to many developing countries. Although, important milestone for Indonesian economy more favorable toward foreign investment and openness to trade occurred after 1965, when there was profound changes from old order regime to new order regime. One observer indicated that Indonesia's remarkable growth record since 1966. In 30 years, GDP per capita has more than quadrupled, despite unfavorable initial conditions, some weak institutions and poor microeconomic policies (Temple 2003). Indonesia is probably less understood country for both pessimists and optimists. The former predicts it shall failed, but never happens. The later predicts it shall success, alas the outcome never far from mediocre.

Moreover, important milestone for Indonesia trade policy occurred in 1995 January 1st, Indonesia became a member of the WTO, promising to lower all tariffs to below 40% over a 10-year period. Since then, the rate has steadily declined. However, an important question for determining the effect of tariff cuts on productivity is whether the trade reform process is endogenous. This endogenous problem must be address, as it can lead to biased estimates (Amiti & Konings 2007). But before it, I discuss previous study addressing the same problem, it is important to understand historical context of trade liberalization (and protectionism). Historical context of trade policy flourish in accordance with manufacturing development as suggested by Vial (2008) and Pangestu *et al* (2015) following periods:

Period 1976-1980 (Oil boom period): In 1973, oil revenue quadrupled, and during the oil boom, oil trades gave genuinely necessary income to support heavy industry and enormous scope and foundation, to make linkages and empower private improvement of different enterprises. The pace of increment of TFP is low during this period.

Period 1981-83 (Recession economy): after experience oil blast following business cycle, there is steady slide in oil costs incited a downturn in the assembling area joined by regrettable TFP development rates, however no genuine arrangement reaction.

Period 1984-1988 (Deregulation period): After the sharp drop in oil revenue in 1985-1986, the public authority reacted with solid macroeconomic changes, specifically, the rupee deteriorating strongly in 1986. This likewise prompted a progression of liberation measures. It incorporates changing the microeconomic level, in the banking and capital market sector. Fabricating yield development gets and the TFP development rate starts.

Period 1989-1995 (Investment booming): During this period, firms exploited market advancement and the assembling area encountered a booming in speculation, monetary development, and TFP creation. Industrialization is driven by send out business sectors and the private area.

Period 1999-2004 (Recovery after Asia Financial Crisis and progress): The IMF program won during this period, with the lifting of all import limitations, duty decreases, imports of horticultural items, and others, likewise major institutional change occurred. The program environmental factors for the period 2002-2004 show re-imports and product limitations and instances of uncontrolled protectionism.

Period 2004-2015 (Dutch disease, reform and Global Financial Crisis): Yudhoyono government tried to improve on exchange strategy by diminishing trade imitations and expanded straightforwardness. The commodity booming somewhere in the range of 2004 and 2011 saw trades triple and trigger a second Dutch disease flare-up. From 2012 to 2014, after the worldwide monetary emergency and the breakdown of ware costs, sends out fall, making an import-and-export imbalance. Protectionism raises lead to the re-burden of many exchange limitations.

Based on trade policy historical context, two main lessons could be learned that *first* from one period to other period, role of government policy and influence from interest group have prevented new business activities growing businesses, therefore firm with political connection can remain stay inefficient while reform pursues. *Second*, the oil crisis of the 1980s as similar

event of the Dutch disease took shape on the decade of 2000s had triggered a series of deregulation and this reform may have caused increased competition and productivity growth. However, reforming during crisis always delicate policy to implement and pursue, while distributional effect of reform usually not equally divide among participants.

Trade Liberalization

This first part of survey focus on the firms in international trade, the institutional set up "rules of game" especially for international trade involving two countries or multi countries, within the same or different region, North-North, South-South cooperation and last but not least, this survey shall touch upon the interest group to influence rules and maintain benefit of open trade or protecting its market share from foreign competitors. General literatures cover topic for international trade theory in which trade liberalization consider interesting theme worth pursue, for instance Jagdish Bhagawati (1988), Dani Rodrik (2003) and Melitz & Trefler (2012). Beside those three, this paper also revisits Douglass North (1990) notion about institution and institutional change, trade liberalization here as process of institutional change, and Mancur Olson (1993) idea on theory of bandit and encompassing interest.

Bhagawati's classic work of protectionism provides framework for understanding commitments to policy (i.e. free trade or fair trade) mixture of ideological factors, interests that defines by political and economic system and institution that shapes two main features. *First*, constraint or binding rules to be followed and obey. *Second*, opportunity for maximizing benefits to self-interests. For him, institutional reform aspires making institutional change happen profoundly balancing interest better. In a democratic system, election is the legitimate instrument to aggregate aspiration in term of vote comparing pro-free trade or pro-protectionism. Nevertheless, it is not necessary society and country choose democracy as political arrangement, society and country can prefer dictatorship. While democracy might not compatible with market economy, "first blessing of invisible hand" as Olson (1993) argues. Dictatorship most likely suitable with "grasping hand".

Olson postulates the theory of bandits and introduces two key terms "roving bandits" and "stationary bandits" to illustrate difference between productive forces and destructive pressure. The former term works solely to destroy incentive to produce and invest. While the later also called a dictator that monopolize and rationalize thefts in term of taxes, make positive externality in form of employment for the rest of society, produce multiplier effect. Moreover, Olson continues his argument for autocrat with the encompassing interest. According to him, a secure autocrat has an encompassing interest in his domain that leads him to provide a peaceful order and other public goods that increase productivity. Encompassing interest is key concept to understand autocrat roles. Finally, longevity for lasting democracy the same necessary for securing two engine of economic growth that are property and contract rights.

Rodrik altered book In Search of Prosperity: Analytical stories on monetary development, it covers case from Australia, India, Botswana, Vietnam, Philippines, Indonesia, Mauritius, Venezuela, Poland, Romania, China, Bolivia, Mexico and Pakistan. Each instances of nation was ready by assortment of researchers, financial expert and political specialists too, for example William Easterly (Pakistan), Barry Weingast (Mexico), Lant Pritchett (Vietnam and Philippines), Ricardo Hausmann (Venezuela) and Jonathan Temple (Indonesia) to give some

examples. Three key detract from Rodrik's altered book are: ***first***, the central point of interest for tending to monetary development is nature of foundation. Since long haul development needs establishment as establishment, for example, secure property privileges, oversee struggle, keep law and control and adjust financial impetuses to social advantage and advantage.

Second, exchange strategy or more explicit the public authority strategy toward exchange doesn't play close to as significant a job as the institutional setting. Explicit instrumental arrangements focused on global monetary joining or crumbling don't correspond much with financial execution once one considers the proof painstakingly gauged. The country stories plainly clarifies about the second point with illustration of Australia, Mauritius and China. ***Third***, supporting high development despite antagonistic conditions requires ever more grounded organizations. The arrangements expected to start the progress from low-pay harmony to quick development might be subjectively not quite the same as those expected to reestablish development in a center pay country.

International trade as discipline of study has been equipped with three canonical model for analysis political and economic consequences of exchange goods and services across border under different specific condition relates with it. First, Hecksher-Ohlin model under the assumption factor specificity is low and all factors can move easily across industry. Therefore, HO model will predict that political cleavage based on class, as the owner factor of production) as determinant of trade policy. Second, Ricardo-Viner model with its assumption factor specificity is high and factors cannot easily move across industry (or costly). The RO model has prediction that the political cleavage based on industry-based that shape formation and coalition in trade politics. RO model was based on comparative advantage theory. However, the post-word war II has witnessed dramatic changes over international trade result with the birth of third model.

Third model is the most recent development built upon actively countries with the same comparative advantage trades each other. Increasing return to scale (IRS) model. One of important features IRS model with less clear cut of distributional impact. This meant that IRS model could not predict winners or loose due to massive trading across nations. The question of which model is superior empirically, the answer is not conclusive. As argued by Alt *et al* (1996), RO model has assumption are often implicit in empirical economics literature under tariff setting. While Rogowski (1989) had utilized the HO model for his work *Commerce and Coalition.* Hiscox (2002) extended Rogowski argument with his work over international trade and political complex emphasizing commerce, coalitions and mobility. Figure 2 depicts Rogowski's four types of endowment based on HO model with supported by Samuelson-Stopler theorem.

Type of Economy	Land-Labor Ratio	
	High	Low
Advanced Economy	Abundant: Capital, Land	Abundant: Capital, Labor
	Scare: Labor	Scare: Land

Backward Economy	Abundant: Land	Abundant: Labor
	Scare: Capital, Labor	Scare: Capital, Land

Figure 2: Four main types of factor endowments. Source: Rogowski (1988)

Rogowski argues that when land-labor ratio is high as occur in advance economy, there was potential class cleavage when labor gains power historical exemplify the United States' New Deal. But when land-labor ratio is low then potential urban-rural cleavage as Western European fascism history already taught us. In a backward economy, when land-labor ratio is high potential urban-rural cleavage as happened at Southern American populism. Last situation when land-labor ratio is low then potential class cleavage more possible as Asian and Eastern Europe fascism in backward economy. Rogoswki's exposition over advance and backward economy was based on historical evidence that contemporary changes in Asia and Eastern Europe are not supporting his claim.

The recent scholarship on firms and trade-policy stance that demonstrate similar idea like Rogowski and Hiscox, Michael Plouffe (2017). His research in international political economy explored the implication of producer heterogeneity for trade politics. By producer heterogeneity, he refers to variation in productivity and size lead to systematic variations in market behaviors, especially to firm abilities to engage foreign market. Then, he proposes testable hypothesis that *highly* productive firms are *more likely* to favor trade liberalization than their less productive counterparts. Plouffe's hypothesis divides between pro-liberalzaition and pro-protection. Pro-liberalization needs abundant factor, exporting sector and high productive firms. Whereas pro-protection needs scare factor, importing sector and low productive firms.

Trade expands the variety of products both in terms of final goods (benefiting consumers) as well as in specialized production inputs then benefiting firms that use contribution. Using Indonesian data, empirical study of Amiti & Konings showed that a 10 percentage point decrease in input prices leads to a 12% increase in productivity for firms importing their inputs. More variety means more competition, and more competition forces firms to lower their markups and prices. Melitz & Trefler (2012:105) illustrates and visualize production and export decisions for all firms based on their marginal costs. Panel A in Figure 3 below separates a company's operating profit partly from domestic sales and partly from export sales. Panel B of Figure 3 summarizes the effects of trade liberalization—a reduction in the trade cost for those firm decisions. The figure shows the same two operating profit curves from panel A both before and after (dashed curves) trade liberalization.
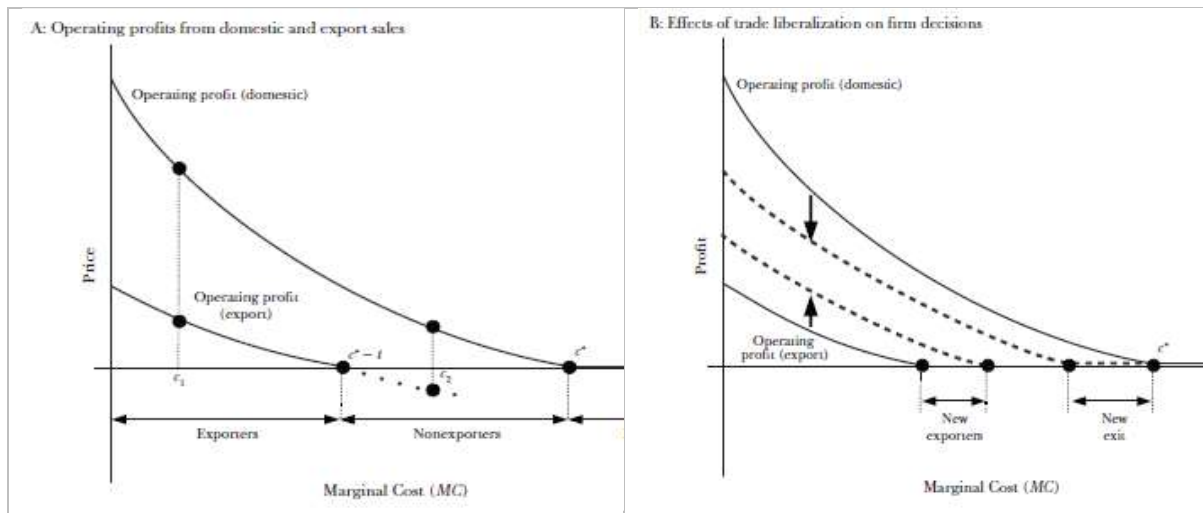
Figure 3: Export decision and trade liberalization. Source: Melitz & Trefler (2012)

According to North (1990: 3), the institutions approach defines institutions as "the rules of the game in a society", including "official" rules such as constitutions and state-enforced laws and 'informal' constraints such as 'codes of conduct, standards of behavior and conventions', are often enforced by members of the stakeholder group (North, 1990: 36). From an institutional perspective as rules, the enforcement of rules is seen as a separate matter from the formulation and content of the rules themselves. The enforcement of the rules involves "transaction costs". Formal and informal rules, together with their 'applicable features', form the institutional structure within which interactions occur. Thus, the prescriptive institutional approach uses a rational choice perspective to study the formation of institutions, but the theory of motivation - which explains why people follow rules of behavior specific - not included in the approach to analysis.

To sum up this part on trade liberalization, this article corroborates argument of Alt et al (1996) student of trade policy can learn insight from industrial organization and the new economics of institution to empirically test the extent to which specificity is an important explanatory variable. More importantly, domestic political institution matters as well taking example where political system is such that it rewards small sector group then people will not willing to pay the substantial.

Economic outcome of the political institution

It is pivotal for a better understanding of the relationships between political institutions and economic performance (productivity in this case) and trade. We illustrate two major strands of institutionalist theory are useful and giving insights. The first line of study focuses on the dependability of government promises and the significance of stable policy for investors and commercial enterprises. Particularly, first line literature culminates in the policy credibility notion. It has grown out of Douglass North's and his collaborators' work on the significance of stable and secure property rights regimes for investment and growth in Europe's economic development (North and Thomas 1973; North and Weingast 1989). The establishment of new political institutions was crucial to limiting the political executive's power, resulting in a more

stable and secure environment in which investors and business owners were less discouraged by the risk of capricious policy action in the future

Second strand of study discusses the necessity of flexible policymaking for economic change and the adaptability of the government. Second strand was addressing the impact of policy flexibility in different ways. One example of this is macro-institutionalist writing on state power and autonomy (Wade 1990; Doner 1992). The ability of various state structure to adapt to economic shocks and to encourage quick investment and development has been extensively studied in this literature. While, micro-institutionalist writing has concentrated on the configuration of the state's components and the policy implications of various institutional designs rather than the character of state as-a-whole (Tsebelis 1995; Haggard and McCubbins 2000).

Productivity

Second part of survey pays attention on the productivity based on neoclassical economics firms or plan level productivity, i.e. Aw, Roberts and Xu (2008) using Taiwan's data, survey from Eric Bartelsman & Mark Doms (2000), Chad Syverson (2011) surveyed what determines productivity and recent works from Nicholas Bloom, Charles Jones, John Van Reenen, and Michael Webb (hereafter Bloom *et al* 2020). Syverson argues that large and persistent in productivity level are ubiquitous, Productivity is quite literally a matter of survival businesses. Higher productivity producers *are more likely* to survive than their less efficient industry competitor.

Moreover, productivity has been agenda for macroeconomics, industrial organization, labor and trade. Models of economic fluctuations were driven by productivity shocks are increasingly being enriched to account for micro-level patterns. Why does business differ in their measure for productivity level? Syverson proposes answer that source of production practice (internal) and producer external operating investment. Basically productivity is a number of outputs obtained from a given set of inputs. As such, it is often expressed as an output-to-input ratio. Single factor productivity measures reflect the unit of output produced per unit of a particular input. Labor productivity is the most common measure of this type, although sometimes productivity measures of capital or even raw materials are used.

Researchers often use an invariant yield concept with an intensity using observable inputs. This measure is called total factor productivity (TFP) (it is also sometimes referred to as multifactor productivity). Conceptually, the difference in TFP reflects changes in the isobaric of a production function: the change in output produced from a fixed set of inputs. The often-used formulation of production function is Total Factor Productivity (TFP) refers invariant to the intensity of use of observable factor inputs. $Y_t = A_t F(K_t, L_t, M_t)$. Where: Y_t is output, $F(\cdot)$ is a function of observable inputs capital K_t, labor L_t, and intermediate materials M_t, A_t is the actor-neutral shifter. Although productivity is a relatively simple concept, a series of measurement problems arise when constructing productivity measures from actual production data. Syverson proposes 3 set of issues regards measurement.

First issues of inquiries concerns the estimation of result. Many firms produce more than one result. Would it be a good idea for them to be collected into a solitary result measure, and assuming this is the case, how? Besides, even nitty gritty maker miniature information regularly

don't contain proportions of amount created. Second issues of estimation problem is connected with inputs. For work, there is a decision of utilizing the amount of work, the hours worked, or the quality-changed proportion of work (payrolls are regularly utilized in a subsequent job, in light of the view that wages catch the minor result of heterogeneous units of work). Capital is normally estimated utilizing the conveying measure of its value foundation or exchanging. Third one, related with estimation issues includes conglomerating various contributions to a solitary TFP measure. As depicted over, the distinction in TFP mirrors the difference in the result while keeping the info consistent. To build the TFP estimation yield input proportion, the scholar should consider the singular information sources suitably while developing the single direction input record.

One of external drivers of usefulness distinction, proposed by Syverson, liberation or appropriate guideline. Inadequately directed business sectors can make unfavorable elements that decrease efficiency. Liberation or reformatting towards more intelligent types of guideline could turn around this pattern. For instance investigation of Bridgman, Qi and Schmitz (2009) shows how many years of guidelines in the US sugar market have obliterated usefulness drivers. Other investigation of Greenstone, List and Syverson (2011) clarifies how natural guidelines (explicitly changes to the US Clean Air Act) diminish efficiency levels in assembling plants. There are central issues still unanswered by existing writings of efficiency for example what is the job of (or trust for) government strategies that energize usefulness development? Misallocation of assets in developing business sector and nature of theoretical money to name not many riddles.

Syverson in fact that the work from Bartelsman and Doms (2000) had been a motivation for him to make stock taking on what decides usefulness. Bartelsman and Doms paper audits research involving longitudinal miniature information to record developments in efficiency and looks at the variables driving usefulness development. Their review investigates usefulness scattering among firms and organizations, the presence of efficiency holes, the results of section and exit, and the commitment of asset redistribution across firms and total efficiency development. All the more significantly, their concentrate additionally uncovers significant variables connected with usefulness development, like sensibility, innovation usage, human resources, and guideline. Further developed writing in the field has started to resolve the harder inquiries of the causal connection between these variables and usefulness development.

Besides surveying research on productivity from US cases, I also convey study from Aw, Roberts and Xu (2008). The evaluation of the micro facts for Taiwanese electronics manufacturers shows that corporation heterogeneity in productiveness or profitability and capital shares is critical to explaining variations in exporting preference. More interestingly, the facts additionally display that there may be interdependence with inside the corporation`s preference of export reputation and R&D investment, and that the chance of making an investment in R&D is expanded through earlier export market activity.

Last paper report in this part in order to comprehend concept of productivity comes from Bloom *et al* (2020). Their paper conveys evidences from numerous industries, products, and companies displaying that research attempt is growing significantly even as research productiveness is declining sharply. Main argument of their paper comes from Solow's

framework that can be clarified this framework, Bloom and friends proposes simple equation as follow:

$$Economic\ growth = Research\ productivity\ \times Number\ of\ researchers$$

Economic growth says 2 percent or 5 percent determines by increasing (decreasing) research productivity multiple by increasing (decreasing) number of researchers. Sustainable growth, as it happens, is the result of the offset of these two trends. Perhaps the best example of this discovery is Moore's Law, one of the main drivers of economic growth in recent decades. This "law" refers to an empirical pattern in which the number of transistors on a computer chip doubles approximately every two years. This doubling equates to a constant annual growth rate of more than 30 percent and may achieve 35 percent, and has remained a remarkably stable rate for nearly half a century. Since productivity has two sides of story: inputs and outputs. A substantial question may arise from Moore Law, what happens on the input side? Many commentators note that Moore's Law does not a law of nature that is the result of intense research efforts: double the transistor Density is often considered the goal or objective for research programs. Figure 4 depicts Moore's Law from the case of transistors microchip:

Figure 4: Moore's Law. Source: https://en.wikipedia.org/wiki/Moore%27s_law

Indonesia aspires to climb ladder of development from middle-income country (2020) to high income country (2045), the same year commemorates one hundred years of her independence on 1945. We aim for exponential increase GDP per capita from 3,869 USD

(2018) to reach above 12,000 USD to escape from middle-income trap. Therefore, government of Indonesia actively promotes industrialization by aggressive establishing industrial policy. As Indonesian was blessed with natural resources, figure 1 may illustrates my points, and build upon successful policy to take downstream crude palm oil into various household products. Started 2009, the government introduced also downstream policy or value-added policy for mining products such as coal, copper and nickel to name a few. Broadly speaking, surveying trade liberalization and productivity provides a perfect momentum to analyze changes in mining industry after changes of 2009 policy on downstream or value-added. Would the 21st century Indonesian industrial policy outcome different result compare to previous new order industrial policy? The answer would too early to call. Because we did not have magic lamps for foreseen the future. Then, scholar can only make range of prediction and estimation.

Broadly speaking, two approaches conduct to explain and construct trade liberalization as variable. **First**, trade liberalization as instrument for protection. The first approach usually use nominal rate of protection defines as ad valorem percentage tariff levied on import; effective rate of protection defines as degree of protection on value added as opposed to the final price of an imported product – *usually higher than nominal rate of protection* (Todaro & Smith 2015). There are couple of previous studies working on first approach of Indonesian protection data including Marks & Rahardja (2012), Fane & Condon (1996) and Fane & Phillips (1991).

Second, trade liberalization variable from production approach, by using Amiti & Konings (2007) example, uses input tariff refers to a fixed-percentage tax on the value of imported commodity levied at the point of entry into a country; output tariff refers to a fixed-percentage tax on the value of exported commodity levied at the point of entry into a country. Vial (2008) followed previous authors using panel data estimation for instance Okamoto & Sjöholm (1999), Todo & Miyamoto (2005) and Blalock & Gertler (2008). Both studies, Amiti & Konings and Vial, estimated TFP using Cobb-Douglass function. Beside two approach of trade liberalization, I follow suggestion from survey literatures provided by Alt *et al* that they argue student of trade economists can borrow notion of specificity. **Lastly**, trade liberalization can be explained and approached by using institutional economics framewrork. This line of research takes shaped through the lobbying approach (Magee 1978; Heckleman & Wilson 2013) and expert survey (Berrefjord & Heum 1993).

Contemporary study using lobbying approach published at Economics & Politics, Heckleman & Wilson (2013), they hypothesized that while spontaneous economic freedom could promote growth, the freedom gained from costly lobbying efforts may be *less* effective. In an extreme case, costly lobbying efforts may even *negate* the stimulating effect of economic freedom. Specifically, their work assumed a nonlinear relationship between economic freedom and lobbying-conditioned growth. To the extent that the observed degree of economic freedom is affected by lobbying, they hypothesized that the benefits of a given degree of economic freedom will be diminished.

For the outcome or dependent variable, I propose to use the firm or plant-level productivity. As suggested by previous work productivity defined the efficiency in production, or *how much output is obtained from a given set of inputs* (Syverson 2011). The measurement of productivity is called **Total Factor Productivity (TFP).** Based on established growth

accounting literature, we may compute TFP following macroeconomic literature of *Y = AF (K, L)* where Y refers to real GDP growth; A technology level (TFP); F define Function (.) of K (Unit of capital) and L (Unit of labor). Relationship between trade liberalization and Total Factor Productivity can be proposed with statement that the *fall in tariff (as proxy for trade liberalization) will increase a degree productivity (TFP)* and *the increase in import competition most likely foster firms searching how to enhance their efficiency, changes in policy or regulation also will benefit some firms but costly to other firms.*

Summary of previous studies

Last part of this paper reports summary of previous studies on Indonesian case with similar research interest with me: trade policy, trade liberalization, productivity and international trade policy combines with new institutional economics framework. These studies mostly published in peer-reviewed journals such *American Economic Review (AER)*, *Oxford Development Studies (ODS)*, *Bulletin of Indonesian Economic Studies (BIES)* and *Economic Development & Cultural Change (ED&CC)*. However, one important study (Mobarak and Purbasari) was mimeo of University of Colorado.

Table 3. Summary of previous studies

Author(s)	Years	Data	General findings including estimation strategy
Negara and Hutchison (BIES)	2020	Data utilized from the Manufacturing Survey of Large and Medium-Sized Firms, it analyses the growth and performance of Batam's three largest manufacturing branches (electronics; electrical goods; and ship-building) over 2004-2015.	• Analyses whether Batam's Free Trade Zone (FTZ) status is related to improved levels of output, exports, employment and efficiency. • Positive association between FTZ status and the growth in output per worker, employment and efficiency. • Access to imported raw materials has a positive relationship with firm performance. • However, FTZ status has no significant association with export growth
Pangestu, Ing and Rahardja (BIES)	2015	Overview of export, import and net trade in Indonesia for 50 years	• Indonesia's trade strategy has advanced in the course of the most recent 50 years, trade strategy was affected by country level of improvement and struggle between powers of transparency and protectionism. There were outside advancement, for example, commodity boom and busts,

Author(s)	Years	Data	General findings including estimation strategy
			worldwide trade agreement additionally formed Indonesia's trade strategy. • Pangestu and friends' paper provides comprehensive trade policy. Therefore, it does not offer causality questions.
Basri and Patunru (BIES)	2012	Trade protectionism data such as NRP and ERP	• This paper offers how to keep trade strategy open involving Indonesia as the case • By exploring trade protectionism measure such as ERP, NRP and Non-tariff Barriers (NTB). The author success provides rigorous argument that trade protectionism measure ease, but NTB keep increasing over time or what known as the rise of creeping protectionism. • There was no estimation strategy also offer. But this paper argue distributive consequences of trade reform can be used by future study.
Amiti and Konings (AER)	2007	Indonesian manufacturing census data from 1991 to 2001	• This paper estimates the productivity gains from a reduction in taxes on final goods and a reduction in taxes on intermediate inputs. Lowering tariffs on products can increase productivity by creating stiffer import competition, while cheaper imported inputs can increase productivity through learning, diversity, and quality effects. • Estimation strategy consists of unbalance panel data and instrumental variable also addressing endogeneity problems
Mobarak and	2006	Jakarta Stock Exchange (JSX) responded to adverse news about	• Their study offers evidence the connection to President Suharto on the probability that those

Author(s)	Years	Data	General findings including estimation strategy
Purbasari (Mimeo)		Suharto's health between 1994 and 1997 Survey of Manufacturing Firms	firms are granted import licenses for raw-materials and for commodities for sale in local markets. • The license often creates monopolies for connected firms, as their competitors are less likely to receive the same import license. There are indications of welfare losses from this system of corrupt protection. • Estimation strategy using Ordinary Least Squares and Linear probability model.
Vial (ODS)	2000	Survey of manufacturing plant-level panel data (1975–95)	• Both the reallocation of development outcome from low-development harvests to high-development crops and the business interaction among medium and low sized firm yields give a critical positive commitment to the general development of the TFP. • Revenue growth in the SME sector is essential for overall TFP growth, but the manufacturing catch-up has not been advanced enough to reap the full benefits • This paper uses decomposition of aggregate TFP growth.
Sjöholm (ED and CC)	1999	Survey of manufacturing plant level data (1980-1991)	• This paper suggest that there is positive spillover and high technology gaps gives raise to the large spillover. • Both inter-industry and intra-industry spillover are found, which indicates an evidence of positive horizontal as well as vertical spillover.

Sources: various publications complied by author (2023)

CONCLUSION

This survey paper has two main tasks for providing tentative explanations over the broad questions: one is *does trade liberalization cause productivity?* and two is *does institutional set-up of economic governance cause productivity?* The paper main function is providing survey a literature. After detouring on various general literatures, theoretical model, empirical tests, critical survey, and country case study, two approach to answer such question comes from economic studies and political sciences. Three models of international trade literatures are useful framework: Heckscher-Ohlin, Ricardo-Viner and Increasing return to scale model. These economic models were based on self interest model, generally consider under category of the neoclassical model, it provides rigorous evidences and insightfuls but also encounter the limitation in form of self interest model *fails* to explain adequately trade policy action that influenced by broad social and national concerns of voters and governments.

Second approach harnesses from the political science (institutional theory) similar to economic science, political science model also provides rigorous evidences as well as giving insights. Several promising theories over trade policy formations, as essence of political power struggle over trade, includes direct democracy, political support function, electoral competition and influence-driven competition. Yet, the limitation of political science model that it has not given sufficient attention to behavioral micro-foundation of key actors in their model. Therefore, in order to explain firm level productivity by using explanatory variable of trade liberalization, it *is not* sufficient only relying one discipline either economic science or political sciences. It is true that both may complement each other, like two sides of a coin. However, diligent student of political economy *must not* satisfy only combining neoclassical and institutional (political) theory, but this requires the courage to borrow-and-learn from other fields such as new institutional economics, organizational sociology, labor economics and industrial organizations to pursue fuller direction of this research into its frontiers boundary. The small step begins of frontiers boundary start through this survey of literature.

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