Research Article
Volume 9:4, 2020
DOI: 10.37421/jbfa.2020.9.378

Journal of
Business & Financial Affairs

ISSN: 2167-0234 Open Access

The Impact of Trade Facilitation on Trade Flow in Asian Countries

Waqas Ali* and Nadia Shakoor

Department of School of Economics, Jilin University, China

Abstract

The study estimates the relationship between trade facilitation indicators and trade flow in Asian countries. It prioritizes the main trade facilitation determinants that need to be improved for the faster and more international trade flow. The study consists of Asian countries based on main trade facilitation variables such as tariffs, time to import/export and cost to import/export, population, ICT. The study consist on secondary data and most of the data obtained from the World Bank doing business and economic development database and used 44 Asian countries in sample. In this study we have used fixed and random affect methodology for estimation and then uses Husman test to choose between fixed and random affect results. The obtained results shows the significant impact on imports and exports volume and it clarify that tariff and number of documents to import and export has negative affect on trade flow. A one percent change in tariff rates can affect the trade flow with 6% negatively. So for the cheaper and maximum trade flow, tariff must be brought to minimum level while the number of documents has much more affect than tariff as it shows one percent change in number of documents affects with 25% exports and 6% on imports flow negatively. That is why the number of documents should be reduced to the minimum level too. But for ICT, human capital and customs shows a positive relationship with trade flow. According to this study's results it shows that 1% improvement in ICT can increase the imports and exports by 5%. The same way trade infrastructure is most important determinant of trade facilitation, It is because infrastructure includes both time and cost, the cheaper and faster trade flow become more beneficial for both of the trading partners. The results suggest 1% reduction in trade costs results in 20% increase in imports and 16% increase in exports. And 1% reduction in time can affect the imports with 8% and exports with 14%.

Keywords: International Trade • International Business • Trade Flow • Trade facilitation

Introduction

In last few decades the international trade got more attention by developed and developing countries as a key strategy for the rapid economic development, and boosting businesses on local and international level. Asian countries are those that took biggest part international trade as Asian countries trade share is counted for highest in the world. Furthermore it has been increasing constantly as it was less than 5% in early 1970 but later on in 2008, it is counted for 22% share in world trade share (UNCOMTRAD 2009). This rapid increase in international trade just not boosted economic development but also made the business process easier with maximum output, rise in living standard, and elimination of unemployment and so on. However a smooth and transparent trade procedure enables trading countries to take full advantage of international trade which is only possible through trade facilitation and need to improve all those trade facilitation determinants which are directly or indirectly related to trade flow. Therefore, this study aims to investigate the role of trade facilitation in the growing trade flow from the perspective of Asian countries.

Trade facilitation is the process of simplification, harmonization of international trade procedures, activities, practices and formalities for collecting, presenting, communicating and processing data that is required for the physical movement of goods across borders (WTO 1998). According to United Nations (UN), the trade facilitation is the process of simplification, standardization and harmonization of the procedure that is associated to information flow required for movement of goods from seller to buyer and payment transactions. Then OECD 2001 defines that banks and other financial institutions plays a vital role in international trade. Most of the financial information can be found on invoices that are required for customs formalities. However, in some other studies defines the trade facilitation by extending it into improvements in ports efficiency, transport infrastructure, customs environment, regulatory environment, government corruptions, tariff barriers and less transparency issues.

The trade facilitation is all about improving ports efficiency, cross border trade regulations, transparent customs clearance environment, safe and reliable communication, better internet access, roads and railways related to mobility of goods from one country to another [1], said improvement in trade facilitation determinants such as ports and roads between two countries is just same as reducing the distance between them. Moreover[2], found that an improvement in ports efficiency, customs environment, regulatory environment and E-business has direct affect to increase the imports and exports volume and reduce the shipping cost while port efficiency has the higher impact in these all determinant as improvement in ports efficiency can better increase the trade flow. The author estimated 75 countries in (2005) and said that by improvement in those 4 determinants could increase the world's trade by $377 billion.

There are many studies for linking trade facilitation with trade flow and most of them strongly agree that trade facilitation support trade flow [3]. They used panel data and gravity models to identify the role of trade facilitation in the enhancement of trade flow. In their study, all of them agree ports, roads, communication and other trade facilitation determinants are responsible for the slower and expensive trade flow between trading partners. They argue that if the trade ports efficiency, roads, communication, customs

Table 1: Mergers and Acquisition Waves.

WAVES	PERIOD	FACET
First Wave	1897-1904	Horizontal Mergers
Second Wave	1916-1929	Vertical Mergers
Third Wave	1965-1969	Diversified Conglomerate Mergers
Forth Wave	1984-1989	Co-generic mergers, hostile takeovers, corporate raiders
Fifth Wave	1992-2000	Cross border, mega mergers
Sixth Wave	2003-2008	Globalization, private equity, hareholder activism

***Address for Correspondence:** Waqas Ali, Department of School of Economics, Jilin University, China. Tel: 00923452534475; E-mail: waqas.ali.dik@live.com*

Received 02 December 2020; **Accepted** 24 December 2020; **Published** 30 December 2020

environment, regulatory environments are improved it can make trade flow faster and increase the trade volume[4]. shows a positive relationship between trade volume and trade facilitation and called it important for the time sensitive products. This article compared the trade facilitation with traditional trade barriers such as tariffs, quotas, advance technology and said that improvement in these initiatives will lead to more trade volume.

The trade agenda of trade facilitation is not a new strategy or idea as it was already exists in League of Nations in 1923. But before 1950s, it was basically a strategy to build a mutual decolonization between different regimes and make a harmonize independent system which is still basic part of trade facilitation. But the differences between importers and exporters is currently a challenge to build a one standard system for customs and regulatory environments and still it seems extremely complicated to bring a single blueprint of international trade process that fit to all countries and environment. In order to standardize all these differences WTO brought a trade facilitation agreement which is affective from 2017 which helps the countries to do cross border trade. This agreement brought advancement in the procedure of international trade by lowering tariff, transfer of knowledge and communication transparent and fair customs clearance to increase the trade flow and make it easier for the international firms and businesses. This agreement of trade facilitation just not benefits developed or richer countries but it also beneficial for poor and developing countries as its helping even poor countries to take full advantage. The main objective of this agreement to reduce the trade cost and time for helping small businesses and enterprises to reach global markets, this agreement will increase the global trade by $1 trillion per year and reduce the average shipping cost for 14%.

Trade facilitation standardizes all the process that is related to physically mobility of goods across borders. Through on standardized system the trade process among different countries becomes easier and transparent. Moreover, improvement in roads, railways, ports efficiency makes all the mobility of goods faster and cheaper. When this all streamline is well-improved, smooth and cheaper mobility of goods among different trading partners, it boosts the process of imports and exports. In addition, it open-up an economy to the world to conduct international businesses and trade. It is widely believed that business and trade works as a powerful engine for the economy to grow up and raise their living standards.

Literature Review

The existing literature clarifies that improvement in trade facilitation reduce the trade costs however every reduction in shipping and trade cost reflect an increase in trade volume. That is why trade facilitation caught more attention by developing and developed countries as a trade boosting strategy for better and faster economic development.

Fink et al 2000, Serebrisky at el 2004, Mohammed and Wilmsmeier 2004, explains that trade facilitation makes the trade process easier by making streamlining all policies, custom duties, regulations and other formalities that are related to physically mobility of goods results in faster and more trade flow between trading partners. In addition to that [5]. said that tariffs, ports efficiency, railways, roads, airports and transparent regulations and customs are import determinants of trade facilitation and improvement in all these to make the all process cheaper and easier can result in increase in international imports and exportscalled trade facilitation as an operating system for international trade that take controls of all administrative process of physical movement of goods across borders [6,7]. The better this engine works the more goods can be trade internationally.

The same way slower and time-consuming international supply increase e the cost of product and makes it costly [8]. International shipment worth same focus as much as production and other factors of business. It must provide a clear and faster way of delivering goods from order to consumer[9]. estimated $3000 for administrative cost per shipment using World Bank doing business data. While these costs and other fixed costs on each shipment add burden[10]. Many researches have been conducted on this issue; different analyst used different indicators and models to approach the trade performance on trade facilitation. All of them find that delays and costly trade has negative effect on trade flows, especially for time sensitive products. Most of the studies estimated the trade flow with time, cost and customs and ports efficiency such as [11]. All of their estimations prove that improvements in these major measures can increase these measures can raise the trade flow, reduce time and cost for international trade.

Estimated intra-APEC and their results shows that improvement in trade facilitation could increase the trade by $280 billion[12]. Estimated four main trade facilitation indicators ports, customs, regulations and e-business for (APEC) countries to analyze their effect on trade flow. They found a positive effect on trade flow and found that port efficiency has higher effect on trade flow rather than others. But Eugenia Go (2018) said that only working on ports can't guarantee a positive effect on trade because roads and other trade formalities matters the same way, because if the roads that links to ports, and customs environment doesn't support trade then only ports efficiency doesn't work alone. In 2005 John S. Wilson Catherine L. Mann Tsunehiro Otsuki said that gains from trade is large and they have estimated trade facilitation efforts across 75 countries and found that improvement in these four measures could increase the world's trade for $377 billion. Hertel and Keeney (2006) find that improvement in trade facilitation could increase in trade worth $110 billion, and he also found that trade facilitation reform is getting attention of developing countries, especially in Asian countries.

According to Alberto Portugal-Perez John S. Wilson (2010) there is a positive relationship between trade facilitation and trade flow using main indicators in two ways hard and soft infrastructure for 101 countries over period of 2004-2007 and found that improvement in hard infrastructure has positive effect on trade facilitation. Ben Shepherd analyzed the ASEAN countries and found that these countries has much more to gain from an improved trade facilitation system and particularly they should focus on two main areas transport infrastructure and information technology [13]. The same way Shepherd and Wilson said that transport infrastructure is one of the main issues for trade flow in Southeast Asia [14]. Transport infrastructure, poor customs clearance system, less access to finance, businesses and poor regulatory environment affecting trade flow [15]. (World Bank 2017) estimate for world's tariffs increase the products cost by 6%. According Djankov, Freund, and Pham (2010) estimation infrastructure has a higher effect on transport cost by type of transport used and the time to deliver goods. They have also estimated using time to import and export that delay in transport decrease the trade volume by at least 1% daily basis and comparable increase the 70km distance between trading partners. And Iwanow and Kirkpatrick suggest that every improvement in trade facilitation can effect on trade volume by half of those improvements [16].

Trade facilitation remains one of the top priorities for economic development strategy for an economy to more open up, increase trade flow (imports exports) and helps an economy to achieve economic goals. There are many studies related to this topic and all of them agree that trade facilitation helps economies to open-up and improve their economy. As (Daniel Sakyi et al. 2017) explains that trade facilitation significantly increases trade flow which results for an economy to more open to the world for international trade and business [17]. (Wilson 2007) lower transaction cost can increase GDP and exports for an economy. The open economies perform far better than close or less open economies. Because this all system works as a chain where trade facilitation increase the trade flow, the higher trade flow and exports demands more products which directly results in increase in domestic production, higher demand of labor and better usage of available , cope with economic problems such as poverty elimination and increasing the domestic business environments. This chain of activities increases the rate of economic development and helps domestic businesses to perform internationally.

Policy makers also keeps trade facilitation on their top priority to make it liberalized through reducing tariffs, quotas, administrative procedure, logistics, transports connectivity, quality of ports, customs systems. (Kituyi 2014) said barriers to trade became barriers to development. But the unnecessary bureaucratic procedure, less transparency and bribes

are main troubles and slowing down this all process. It is said in (World Economic Forum 2012) that improving global logistic network by reducing the transport, communication costs and innovative managerial process enable countries to increase and make their trade flow faster with other trading partners. Moreover, it enables countries to take full advantage of their specialization as explained in trade theories "absolute advantage" and"comparative advantage" theory. An economy can be specialized in particular task rather than making final product which boost both of the economies and increase economic activities in both countries.

Many studies found that trade facilitation has positive relation to trade flow while trade flow has positive relation to economic growth. Normaz Wana Ismail, JamilahMohdMahyideen (2010) estimated Asian countries that facilitating trade can increase the trade flow and increase the GDP, for instance India, Singapore, Thailand, Veit Nam increased their GDP for 16%, Daniel Sakyi, Jos´e Villaverde, Adolfo Maza and Isaac Bonuedi estimated 138 countries for period of 2006 to 2015 using three variables trade, imports and exports, they found that improvement in trade facilitation can increase the trade flow and improve a country's economy [18]. A study by the Asia-Pacific Research and Training Network on Trade (2013) found that trade facilitation affects positively the trade volume which results in increase of domestic production and helps an economy to remove the poverty and unemployment. Kim and Lin (2009) found that trade facilitation and openness helps an economy for sustainable economic growth and development but they also found that there is two way growth link between trade and trade facilitation, the countries that are already good in trade and having huge volume of trade every day, can earn more income and more income means they can spend more money on trade facilitation to make it more better. The argument is that trade facilitation is a key strategy for the better trade flow. The increase in trade flow leads to more economic activities that will eliminate poverty, unemployment, enhance living standards, health, education etc [19,20]. It is analyzed that improvement in border efficiency for goods movement has stronger positive effect on trade flow for both developed and developing economies (Michael Engman 2005). It is because as said that trade facilitation is not just limited to cutting off the tariff amount of increasing the trade quotas, trade facilitation is all about trade related efforts including infrastructure, customs and all those efforts that can make faster the streamline of trade between countries.

According to OECD (2003) calculations shows that each 1% saving in trade transaction costs can benefit for $43 billion overall world. Trade facilitation is one of main component for overall economic success, development and growth (World Bank 2001). IMF 2001 report "imports and exports in world trade" estimations shows 2.5% to 15% trade cost charged on goods traded around the globe, The 2.5% approximately equivalent to $325 billion. This amount can be spent on more production and economic development if these costs are reduced to the minimum level through trade facilitation. Such as UN/CEFACT stated that $490 billion can be saved from trade facilitation (UN/CEFACT BPAWG meeting in Geneva 2001). This huge amount clarifies the potential gains and need of trade facilitation. That is the reason why trade facilitation getting more attention, not just by developing countries but all major international organizations called it economic development strategy. Many of the economies trying to improve trade facilitation determinants and (WTO and OECD 2008) shows about that $101 million spent on trade facilitation in 2000 and then it has increased to $391 million in 2006.

According to Duval et al. (2015a) trade cost can be reduced further by addressing non-tariff barriers [21]. Anderson and Van Win coop (2004) estimated that non-tariff barriers should be focused same as tariff barriers because trade costs between countries accounts for 170% while only 8% tariff imposed on them on average [22]. Many of the less open economies are imposing high tariffs while reduction in tariff rates can highly affect the imports and exports as Novy (2013) estimated 7% to 12% reduction in trade cost by free trade agreement between trading economies.

According to Jaén (2010) trade facilitation became strategic efforts for developing countries to get more access to international markets through a predictable, safe and efficient, simplified, standard international trading system. Martínez-Zarzoso and Márquez-Ramos (2008) says that trade facilitation reduces the shipping cost, time while this reduction in cost, and time results in increase in trade volume.

A Snapshot of Trade Flow and its facilitation in Asian Countries

According to IMF 2018 report, the Asia counted for the highest contributor to global economic growth with 62.1% as per 2017 estimate. Where China and India highest contribution to it which is 33.3% and 13.4% respectively. Only China's contribution 33.3% is much higher than whole Africa 2.2% and Europe 15.2%. Moreover, the average growth rate of Asian economies remained higher than world's growth rate as 7.1% and 7.3% in 2013 and 2014 respectively, which is far higher than world's growth 3.3% and 4% in 2013 and 2014. This growth rate is expected to remain steady for next coming years.

No doubt that trade reforms and trade facilitation can increase the trade flow as noted in world bank data (2018) China ranks on top in Asian countries for imports + exports. The total trade volume for China in 2018 were counted as $5204 billion while Hong Kong and Korea stands on second and third rank with total trade volume (imports plus exports) worth $1364 billion and $1344 billion respectively. The other top Asian countries are in this sequence Singapore $1187bn, India $1175bn, United Arab Emirates $670bn, Thailand $622bn, Saudi Arabia $520bn, Malaysia $468bn, Vietnam $459bn. If these results are compared back to year 2000 still China, Hong Kong, Korea and Singapore are in same rank with total trade flow of $477, $425, $381, $350 in billions respectively. However, India were ranking below Malaysia, Thailand, and Saudi Arabia with the total trade volume of $126 billion. In these two decades, India has conducted some remarkable efforts and improvements, which resulted in better performance than these countries. Not only this but the comparison of top three performers China, Hong Kong and Korea, China had higher trade flow than Hong Kong and Korea by 12% and 25% respectively in year 2000 but this difference has increase extremely in 2018 as it is counted for 281% higher than Hong Kong and 287% higher than Korea. Eichengreen and Greenaway confirms that China's exports got the highest increment over last few decades as compared to other countries in Asia [23,24]. At present China and India proved themselves the fastest growing economies in Asia with advanced and impressive trade strategies while Hongkong, Singapore, Korea, Japan, Malaysia and Vietnam are followed.

Generally it is accepted that trade facilitation generates trade flow while trade flow generate economic activities and boosts the economic growth, As noted in MohdMahyideen (2010) by increasing exports India, Singapore, Thailand, Vietnam increased their GDP by 16% to 60%, not only that but the countries that are more open to international trade can be benefited more than less open to trade countries, as the movability of goods, services and technology makes availability of multiple products at reasonable prices, moreover it creates opportunities for the economy to perform more better. Trade facilitation and economic growth has positive relation as noted in Sakyi et al (2015). Now the scenario suggest that trade facilitation is essential for economic growth. Developed countries have more ability to take full advantage of trade facilitation rather than developing countries (Daniel Sakyi 2017). In sum, trade facilitation provides access firms to target international markets and availability of cheaper goods to consumers.

Asian economies remained the fastest growing region in the world in last few decades; this faster speed of growth remained inspiring and became a important part of global power. Economies such as Japan, China, Malaysia, Singapore, Hong Kong and Thailand proved themselves to come out of poverty and became upper middle-income level economies. They are serving as a major economic engine for global economic growth. The major change brought to these countries by more trade.

Tariff is one of the main strategy to increase the trade flow that has been focused by Asian countries in last 2 decades and they brought the tariffs to minimum level. China is one of the leading economy which has decreased the tariff rates more than any other Asian country, The average applied

tariff rate for China were counted up to 49.5% in 1980 while in 2016 it was counted for 7.76% according to world bank database but Pakistan, India and Vietnam still counted for the highest tariff up to 13%. According to Asian development bank report (2011) theEast Asian economies performing better than south Asian economies and attracting more foreign trade. Tariff can't affect the trade flow alone on higher level but a proper business environment; infrastructure is essential part of trade. According to doing business report (2020) the Singapore and Hong Kong ranking on top for ease of doing business in Asian countries while second and third in the world. Moreover, this report shows that Asian countries are in top of the list for improving business environment from which Saudi Arabia is on top of the list while other are Jordan, Bahrain, Tajikistan, Pakistan, Kuwait, China and India. In all these countries India is the one that rapidly growing up for better business environment, while Bahrain brought improvement in almost all of the areas of doing business such financing, land, day to day business operation then China and Saudi Arabia remains behind Bahrain. In addition to that, Pakistan also stood one of the top performer by developing new business strategies and setting up steering committee for ensuring the progress.

Asian countries have continuously struggle to increase the trade flow. According to UNCOMTRAD 2009, the total merchandise export were increasing by less than 5% back to 1970 which has increased up to 22% by 2008. Moreover, it also explains that this increment of trade flow in these countries is about one-third part of the world's exports. The total trade share turn out of Asian countries (nonoil) was near about 4% in early 1970, which has achieved 25% in 2008. The people's republic of China remained the best performer over 4 decades, the market shares of China increased to the highest level among other Asian economies after 1990.

A Snapshot of Imports and Exports

Japan has the highest imports from 1990 to 2003 among all other Asian countries, which remained stable and did not increase much. Nevertheless, the same period of time China has the lowest imports as compared to other countries. But it has started rising from 2000 and overtaken all the countries in 2004 and became the biggest importer. In 2018 China reached the highest level of imports $2548 billion. The average imports of other Asian countries are about $500 billion, which is far less than China's imports. But no doubt those overall imports are increasing in Asian countries (Figures 1-3).

The same China remained on the highest level of imports it also leading in exports too. From 1990 to 2003 Japan had the highest exports which increased steady but not much high. The same period of time China's exports were even less than other Asian countries which started rising in later 1990's and started leading other countries in 2000 but still Japan exports remained higher till 2004. Thereafter China's exports rose rapidly and 2018 counted for the highest exports for China. China's exports for 2018 remained $2655 billion which is far more than Japan's exports $917 billion and Asian countries average $500 billion.

The above graph shows simple means average tariff rate applied on all products of top ten performing countries. As earlier, we have shown in above charts indicating trade flow Imports and Exports of each country. Now we can compare top ten countries having the highest trade volume to the tariff rates. Tariff rates highly affect the trade flow for an economy. The picture is very clear that lower tariff rates helps an economy to increase their imports and exports while the higher tariff rates reasons to slower trade flow. As we can see, that China has the highest trade volume of last 2 decades than any other country in Asia. The same way if we take a look at tariff rates, China impose the lowest tariff rates on goods traded. China has the lowest tariff than any other country in Asia.

Data and Estimations

The study used panel data that cover number of countries and different variables over period of time. Therefore, we use the fixed- and random effect estimation technique to capture the better picture of variables. The main advantage of using this technique to estimate the time-invariant variables such as where intercept may differ across countries but doesn't differ over time period and their specific effect on country. Moreover, it shapes a proper estimate of relationship of variables over a specified time period and avoids bias.

Pooled data assumes countries as homogeneous but fixed affect models allowed the heterogeneity and individuality among countries. Fixed affects are used when we are interested to analyze the effect of multiplier variables that differ over time. It clarifies the relationship between predictor and results for specified variable depending on its characteristics. Fixed affect models are affective when it is necessary to control the variables that are differ among countries but constant in time period. Fixed affect remove such errors and we can estimate the net effect. On the other side

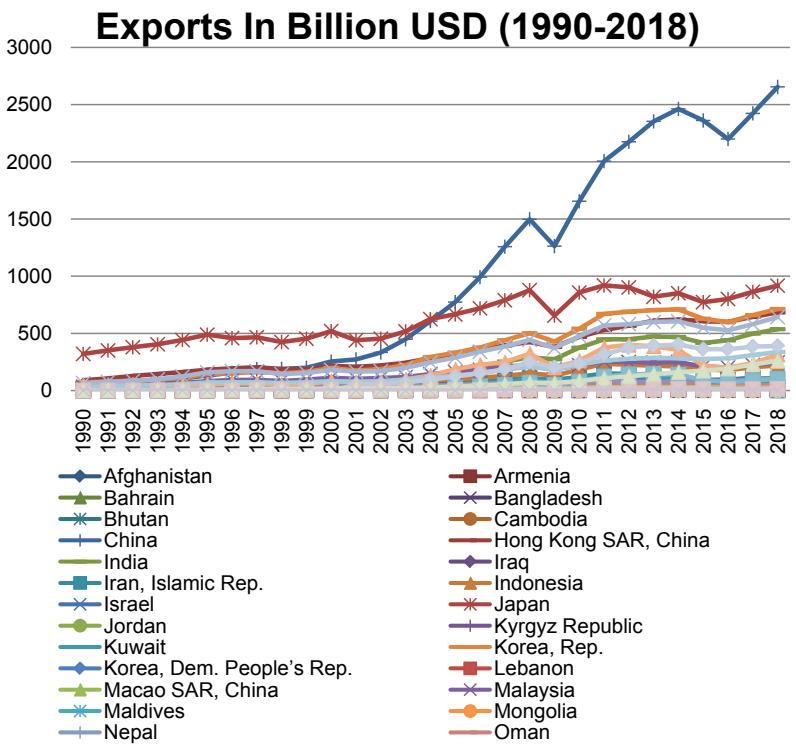

Figure 1. Asian Countries Imports over 3 Decade.

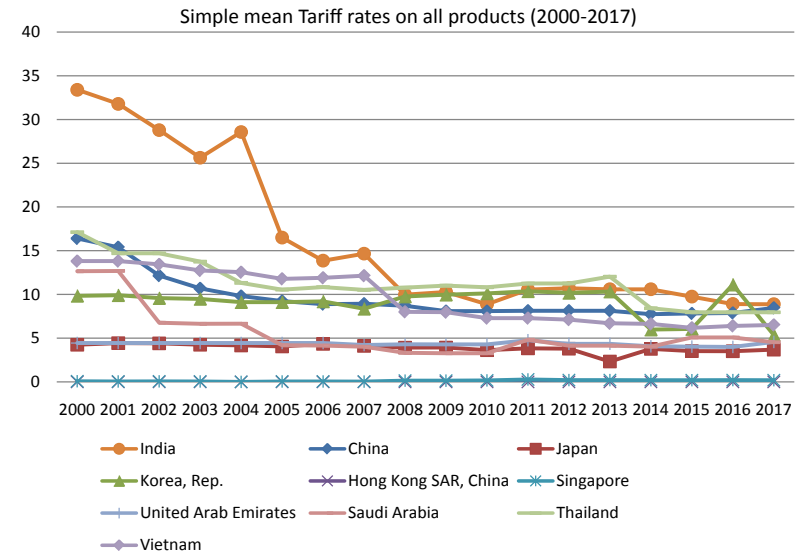

Figure 2. Asian Countries Exports over 3 Decades.

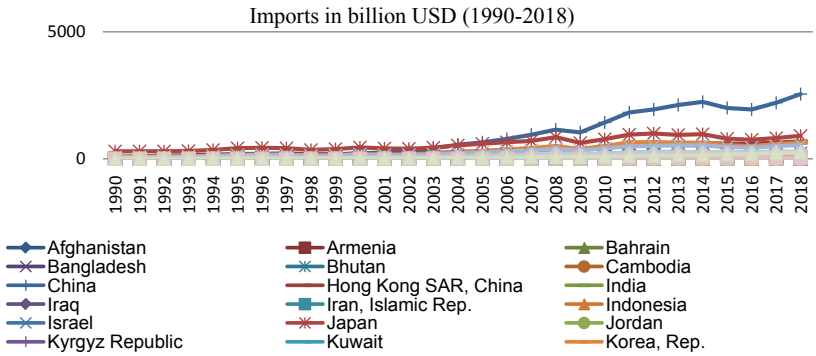

Figure 3. Tariff rates of top ten performing countries.

the variation between countries are assumed to be random affect models. The main differentiation between fixed and random affect models explained by "Green, 2008" that the unobserved individuals affect the other variables which are correlated with independent variables. If the correlation or some effect of different countries on each other or on regressor found then random affect models are used. It is assumed that countries error term is not correlated with independent variables.

To reach the proper results and have clear results the proposed study will use Hausman test to choose between the fixed and random effect models. According to "Green, 2008" that by applying Hausman test, null hypothesis recommends random affect model while the alternative hypothesis recommend fixed affect models. Moreover, If the probability value of chi-square is greater than the 10%, then we opt for the random effect. Contrary holds when the probability value is less 10%. Similarly, we use Langrage Multiplier (LM) test to choose between the random and pooled OLS models. We also ensure that our models may not suffer from the issues of heterogeneity, endogeneity, and cross-sectional dependence.

The basic concern of the study is to analyze the relationship between trade facilitation and trade flow in Asian countries. In this regard, we apply panel analysis techniques, e.g., fixed- and random-effects models. The advantage of employing the panel data's techniques is that we have large sample size and degrees of freedom. The study is based on important trade facilitation indicators that directly affect the trade flow in Asian countries. To avoid omitted variable bias, we select the most important variables for the study. The sample selection dictates the availability of data. The study relies on the secondary data. The details are given in (Tables 1-4).

Table 3 shows the correlation among the underlying variables of the study.

Table 1. List of variables used in study.

Variable	Notation	Definition	Source
Population	POP	Population of an economy	WB-DBD
GDP	GDP	Gross domestic product of an economy	WB-DBD
Labor Force	LBF	Labor force in an economy	WB-DBD
ICT	ICT	The ICT development and usage in business	WB-DBD
Time to Import/Export	TIE	Time to import and time to export	WB-DBD
Cost to Import/Export	CIE	Cost to import and cost to export	WB-DBD
Document to Import/ Export	DIE	Documents to import and documents to export (Numbers)	WB-DBD
Tariffs	TRF	Tariff imposed on imports and exports	WB-DBD

The data shows the export cost has negative correlation with trade volume. Similarly, the time to export also has negative correlation with the trade volume. The documents required for clearance the shipments has negative relationship with trade. The increase in time, cost, and documentation may reduce the efficiency and profitability of the firms. Therefore, the exporting firms are reluctant to do business in the countries, which have adverse situation of trade facilitation. The same applies on the import. The imports have negative time, cost and documents as depicted in the (Tables 5-7).

Table 2. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Exp Cost	320	1788.422	1834.183	410	11552.1
Imp Cost	320	2046.446	2208.827	368.4	16245.1
Exp Doc	320	6.70625	2.516645	3	15
Imp Doc	320	8.0625	2.762688	3	17
Exp Time	320	27.07031	20.72869	6	102
Imp Time	320	27.07031	x21.46071	4	101
Population	390	1.05e+08	2.82e+08	327487	1.37E+09
GDP	382	5.23e+11	1.44e+12	8.98E+08	1.10E+13
Labor Force	390	4.83e+07	1.40e+08	135033	7.85E+08
ICT	384	15.17575	15.20792	0.018067	62.61071

Data is without log*

Table 3. Correlation between variables in relation to exports.

	Trade Volume	Expt Cost	Exp Doc	Exp Time	Population	GDP	Infrastructure	ICT	Tariff
Trade Volume	1								
Expt Cost	-0.6152	1							
Exp Doc	-0.6403	0.759	1						
Exp Time	-0.7408	0.788	0.8008	1					
Population	0.5735	-0.1857	-0.0786	-0.1038	1				
GDP	0.9588	-0.5783	-0.5561	-0.6645	0.6799	1			
Infrastructure	0.6208	-0.2086	-0.0967	-0.1455	0.9873	0.7093	1		
ICT	0.5622	-0.2209	-0.5289	-0.5626	-0.0332	0.4738	0.0245	1	
Tariff	-0.2954	0.2682	0.3717	0.3976	0.1846	-0.1981	0.169	-0.3201	1

Table 4. Correlation between variables relating to imports.

	Trade Volume	Imp Cost	Imp Doc	Imp Time	Population	GDP	Labor Force	ICT	Tariff
Trade Volume	1								
Imp Cost	-0.2739	1							
Imp Doc	-0.4741	0.6659	1						
Imp Time	-0.3294	0.8303	0.7697	1					
Population	0.6677	0.0859	0.0559	0.0359	1				
GDP	0.8678	0.1322	0.2021	0.1219	0.8187	1			
Labor Force	0.7259	0.0887	0.0762	0.0342	0.9819	0.8805	1		
ICT	0.5175	0.3368	0.6396	0.5055	0.0536	0.1935	0.0345	1	
Tariff	0.158	0.0498	0.2622	0.1161	0.0954	0.0088	0.0921	0.398	1

Table 5. Estimation of trade flow with relation to tariff.

	Fixed effect	Random effect
POP	1.32*** (0.427)	0.73*** (0.189)
GDP	0.82*** (0.037)	0.83*** (0.031)
Labor Force	1.01*** (0.299)	0.71*** (0.188)
ICT	0.04 (0.033)	0.09*** (0.028)
Tariff	-0.06** (0.020)	-0.07* (0.031)
Cons	4.46*** (1.239)	2.00*** (0.322)
No. of observations	290	290
Hausman	14.05**	

Results

The main concern of the study is to highlight the importance of trade facilitation in determining the trade flow of the Asian countries. We established the relationship between the trade flow an trade facilitation by applying fixed- and random-effect models. The selection of the model is based on the Hausman test.

Table 5 reports the results of the trade flow in relation to the tariff and

Table 6. Estimation of trade flow with respect to export facilitation.

	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
POP	1.03**	0.45**	0.76*	0.47**	0.70*	0.36*
	(0.406)	(0.189)	(0.393)	(0.184)	(0.396)	(0.196)
GDP	0.88***	0.89***	0.91***	0.90***	0.91***	0.90***
	(0.047)	(0.040)	(0.043)	(0.035)	(0.044)	(0.037)
Labor Force	0.58**	0.37**	0.44	0.39**	0.31	0.27
	(0.284)	(0.188)	(0.278)	(0.184)	(0.284)	(0.193)
ICT	0.05*	0.08***	0.05*	0.08***	0.04	0.07***
	(0.027)	(0.025)	(0.027)	(0.025)	(0.027)	(0.025)
Exp Cost	-0.16***	-0.11**				
	(0.059)	(0.052)				
Exp Doc			-0.25***	-0.30***		
			(0.090)	(0.086)		
Exp Time					-0.14**	-0.13**
					(0.069)	(0.064)
Cons	5.12***	2.11***	3.48***	1.89***	3.91***	1.82***
	(1.293)	(0.459)	(1.090)	(0.349)	(1.150)	(0.373)
No. of observations	303	303	303	303	303	303
Hausman	15.60***		8.94*		13.56**	

Note. ***, **, * represent 1%, 5%, 10% respectively. All the data is in log form.

Table 7. Estimation of trade flow with respect to Imports facilitation.

	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
POP	1.11***	0.48**	0.76*	0.47**	0.70*	0.40**
	(0.403)	(0.187)	(0.398)	(0.186)	(0.399)	(0.195)
GDP	0.86***	0.86***	0.93***	0.92***	0.92***	0.91***
	(0.048)	(0.041)	(0.044)	(0.036)	(0.044)	(0.036)
Labor Force	0.69**	0.42**	0.42	0.38**	0.34	0.31
	(0.287)	(0.187)	(0.282)	(0.186)	(0.286)	(0.193)
ICT	0.05**	0.09***	0.04	0.08***	0.04	0.07***
	(0.027)	(0.025)	(0.027)	(0.025)	(0.027)	(0.025)
Imp Cost	-0.20***	-0.15***				
	(0.056)	(0.051)				
Imp Doc			-0.06***	-0.08***		
			(0.001)	(0.021)		
Imp Time					-0.08**	-0.08
					(0.021)	(0.057)
Cons	5.28***	2.42***	3.33***	1.62***	3.52***	1.67***
	(1.231)	(0.454)	(1.112)	(0.350)	(1.133)	(0.361)
No. of observations	303	303	303	303	303	303
Hausman	15.23***		18.95***		13.66***	

Note. ***, **, * represent 1%, 5%, 10% respectively. All the data is in log form.

other control variables, e.g. POP, GDP, labor force and ICT. The Hausman test show that fixed effect is the best model. The results reveal that that tariff has a significantly negative influence on trade flow. One percent tariff may reduce the trade flow by six percent. The results are similar to the findings in the previous research [25-41]. The tariff may raise the cost of the product directly and indirectly and influence customers to purchase the local products. Hence, tariff plays negative role that decrease the trade volume. The low tariff rates enable exporting country to export goods on cheaper prices while high tariff rate discourage exporters. While other exports restrictions have a significantly negative influence on export volumes as Table 6 reveal that one percent export cost may reduce the volume of export by sixteen percent while one percent change in the documentation may change the export volume by 25%. On the same line, the time to export significantly and negatively affected the export volume in Asian countries. One percent increase in the time to export may reduce the exports by fourteen percent. The export restriction in the form of port regulations may raise the cost of the product directly and indirectly; therefore, it reduces the exports in the sample countries. The population may provide a pool of labor force, which may be helpful in the export facilitation. The ICT has a favorable impact on export volume. The clearance of the shipments is facilitated by well-developed ICT infrastructure in the same way imports restrictions plays negative role for trade flow as Table 7 Reports the results of the import volume in relation to the time, cost, and documents to import. The Hausman test show that fixed effect is the best model. The results clarify that export restrictions has a significantly negative influence on import volumes. One percent import cost may reduce the volume of import by twenty percent. The documents required to import have negative and significant effect on the import volume. One percent change in the documentation may change the import volume by six percent. On the same line, the time to import significantly and negatively affected the import volume in Asian countries. One percent increase in the time to import may reduce the import by eight percent. The import restriction in the form of port regulations may raise the cost of the product directly and indirectly; therefore, it curb the import in the sample countries.

Moreover, the extant literature frequently documented that liberalization uplift the fortune of many countries. Trade facilitation (reduced tariffs or liberal policies) allow the best allocation of scarce resources. Firms engage in international business take advantage due to reduced tariffs, and hence the overall volume of trade increases. One can see that most of the Asian

are the members of WTO, which constantly emphasizing on the trade liberalization policies. The Asian giants, e.g. East Asian countries, have experience a huge growth in trade flow during the last couple of decades. The economic geography and liberal policies played a key role in the overall trade flow of Asia.

Conclusion

International trade is one of the most important factor the economic development, rising living standards, elimination of unemployment and better usage of available resources. International trade just not only benefits to trading partners but it works as a powerful engine for the global economy. And it is one of the most important determinant of an open economy. It is strongly believed that open economies perform much better than close or less open economies. That is why many of the economies tries their best to increase the international trade in order to internationalize their businesses and let access their small and medium enterprises to international market. But expensive or time consuming international trade doesn't benefits an economy as much as it should be. In order to take full advantage of international trade, it must be less time consuming, cheaper and accessible for all size of businesses. In order to do so, trade facilitation plays a vital role in this regard to make this all process faster and cheaper. Many of the economies believe that trade facilitation international trade procedure can be improved and economies can take full advantage of international trade when it is accessible for all size of businesses and help them to become internationalized. The main improvement should be brought in trade facilitation determinants such as ports efficiency, ICT, customs environment, reduction in time and cost to trade, tariff charges. The study clarifies the trade facilitation related to imports and exports separately to capture a better picture of scenario.

The study clarifies that trade volume can be increase by improving in trade facilitation and it helps economies to become more open for the better economic development. Cheaper and faster international trade through trade facilitation creates more business opportunities, helps in reduction of unemployment, helps smalls businesses to become internationalize and gain more profit.

Policy Recommendation

The study clarifies that trade flow is continuously increasing in Asian countries and its benefiting all those countries that are actively performing well in international trade, its helping them for the economic development and rising living standards. But there are some trade facilitation determinants that need to be improved for the better advantage. Improvement in these determinants will result in increase in trade volume with faster and cheaper trade flow.

According to the analysis the study suggest that reduction in tariff rates can increase the trade flow but most the top performing Asian countries are already using low tariff rates such as 10% or less than that. But in the same time some other countries where the trade flow is already very less but their tariff rates are higher such as Pakistan, Maldives, Sri Lanka, and Egypt. The study shows a significant effect of tariff that if one percent tariff decreased it may result in 6% increase in trade volume. So Asian countries has much more to gain by reducing tariff rates. Futher more number of documents also has higher affect that if the number of documents is decreased the trade flow becomes faster and trade volume may increase. According to the available data number documents to import and export in Bhutan, Kyrgyzstan, Iraq, India, and Cambodia is still high and similarly their trade flow is less as compared to those countries where these formalities are less. Therefore study suggest that these countries can increase trade flow by reducing documents formalities.

Information and Communication play a vital role for the faster business and dealing internationally. Here the study shows a positive effect of ICT and suggest that improvement in ICT not only increase the trade volume but it also increases the domestic businesses. In this scenario Afghanistan, Bhutan, Bahrain, Armenia, Brunei and Bangladesh need to struggle a lot and improve ICT in their countries. In addition to that time and costs in international trade has a higher effect on trade flow. The cheaper costs and timely shipping make the international trade flow faster and higher. In this regard Kyrgyzstan, Afghanistan, Iraq, Bhutan, Armenia, Bangladesh, India, Lebanon and Kuwait need to improve all those determinants that are related to shipping costs and decrease the shipping time. Ports, roads, railways, customs are one of the main determinants that affect the shipping costs and time. The better infrastructure reduces time, cots and increases the trade volume.

References

1. G,Wilmsmeier, J. Hoffmann and R. Sanchez. "The impact of port characteristics on international maritime transport costs." Port Economics, *Research in Transportation Economics*, Volume 16, edited by Kevin Cullinane and Wayne Talley, Elsevier 2006.
2. John S, Wilson, Catherine L. Mann and Tsunehiro Otsuki. "Trade Facilitation and Economic Development: Measuring the Impact." *World Bank*: 2003 Washington D.C. Martínez-Zarzoso
3. S. DjanKov, C. Freund and C. Pham. "Trading on time." *The Review of Economics and Statistics* 92 (2010).
4. A. Cristea, D. Hummels and B. Roberson. "Estimating the gains from liberalizing services trade." 2014.
5. S.I. Mohammed, and J.G. Williamson. "Freight rates and productivity gains in British tramp shipping 1869-1950." *Explor Econ HisT* 41(2004):172-203.
6. D.Bernhofen, Z. El-Zahli and R. Kneller. "Estimating the effects of the container revolution on world trade." *J Int Econ* 98(2016): 36-50.
7. Cristea, A and D. Liliana. "The extensive margin of aviation networks." 2016 Implications for urban development.
8. D. Hummels and G. Schaur, "Time as a trade barrier." *Am Econ Rev* 103(2013): 2935-2959.
9. Hornok, C and M. Koren. "Administrative barriers to trade." *J Int Econ* 96(2015): S110-S122.
10. G Alessandria, J.P. Kaboski and V. Midrigan. "US trade and inventory dynamics." *Am Econ Rev* 101(2011): 303-307.
11. I. Martínez-Zarzoso, and L. Márquez-Ramos. "The effect of trade facilitation on sectoral trade." *BE J Econ Anal Policy* 8(2008)
12. John SWilson, Catherine L. Mann, Yuen Pau Woo, NizarAssanie, et al. "Trade Facilitation: A Development Perspective in the Asia Pacific Region." 2002 Report presented to *APEC*.
13. JF Arvis, Duval Y, Shepherd, B., and Utoktham C. et al. "Trade Costs in the Developing World." 1995-2010. *World Bank Policy Research Working Paper* No. 6309.
14. A. Jean-François "Connecting to Compete 2007: Trade Logistics in the Global Economy." *Washington, D.C*., World Bank.
15. B. Hoekman, and A. Nicita. "Trade Policy, Trade Costs and Developing Country Trade. World Bank Policy Research Working Paper Series. No. 4797." 2018 *Washington, DC*: World Bank.
16. Iwanow, Tomasz and Colin Kirkpatrick. "Trade Facilitation and Manufactured Exports: Is Africa Different?." *World Dev* 37(2008):1039-1050.
17. D.Sakyi, J. Villaverde and A. Maza, "Trade Openness, Income Levels, and Economic Growth: The Case of Developing Countries, 1970–2009." *J Int Trade Econ Dev* 24(2015): 860-882.

18. B. Blonigen and W. Wilson,"Port efficiency and trade flows." *Rev Int Econ* 16(2018): 21-36.
19. J. Amoako-Tuffour, N. Balchin, L. Calabres and M. Mendez-Parra, et al. "Trade Facilitation and Economic Transformation in Africa." *paper prepared for African Transformation Forum* 2016 in Kigali, 14-15 March 2016.
20. D. Herzer. "Cross-country Heterogeneity and the Trade-Income Relationship." *World Dev* 44(2013):194-211.
21. Y. Duval, Wang, T and Malakoudi, DT. "Joint United Nations Regional Commissions Trade Facilitation and Paperless Trade Implementation Survey 2015." *Asia and the Pacific Report.* 2015a *United Nations ESCAP*.
22. J. E.Anderson, and Van Wincoop E. "Trade Costs." *National Bureau of Economic Research* 2004.
23. B.Eichengreen, Y. Rhee, and H. Tong. "China and the Exports of other Asian Countries." *Rev World Econ* 143(2007):201-226.
24. D. Greenaway, A. Mahabir, and C. Milner. "Has China Displaced other Asian Countries' Exports?." *China Econ Rev* 2008:19(2):152-169
25. L.M. Florensa, Márquez-Ramos, L., Martínez-Zarzoso, I, Recalde ML, et al. "Regional versus global production networks: where does Latin America stand?." *Appl Econ* 2015.
26. A. Kropf, and P. Sauré, "Fixed cost per shipment." *J Int Econ* 92(2014): 166-184.
27. E.Moïsé, T. Orliac and P. Minor. "Trade facilitation indicators the impact on trade costs." 2011 *OECD Trade Policy Working Papers Nr* 118.
28. C. Hornok and M. Koren. "Per-shipment costs and the lumpiness of international trade." *Rev Econ Stat* 97(2015b):525-530.
29. D. Novy "Gravity Redux: Measuring International Trade Costs with Panel Data." *Econ Inquiry* 2013.
30. A. Jaén. "La UNCTAD y la integración regional en África." *Nova Africa* 26(2010).
31. L.M Florensa, Márquez-Ramos, L., Martínez-Zarzoso, I. Recalde ML. et al. "Regional versus global production networks: where does Latin America stand?."*App Econ* 2015.
32. Á.De La Fuente, Domenéch A."Human capital in growth regressions: how much difference does data quality make?." *J European Econ Ass* 2006.
33. Econometric analysis / William H. Greene. 6th ed., "Upper Saddle River, N.J". *Prentice Hall*, 2008.
34. M. Fugazza, and Molina AC. "On the Determinants of Exports Survival, Policy Issues in International Trade and Commodities Study Series No. 46"*UNCTAD,* 2011 *New York and Geneva*.
35. K. Hayakawa. "How serious is the omission of bilateral tariff rates in gravity?." *J Japanese Int Econ* 2013.
36. F. Horwitz. "HR CAN Competitiveness advance." *Executive Business Brief* 10(2005):50-52
37. Leontief. Wassily. "Domestic Production and Foreign Trade."*The American Capital Position Re-Examined* 1953.
38. L.Marquez-Ramos, I. Martinez-Zarzoso and C. Suarez-Burgest. "Trade Policy versus Trade Facilitation: An Application Using 'Good Old' OLS." Economics: *The Open-Access, Open-Assessment E-Journal* 6(2012) 2012–11.
39. M.McMillan, D. Rodrik and I. Verduzco-Gallo. "Globalization, Structural Change, and Productivity Growth, with an Update on Africa." *World Dev* 63(2014):11–32.
40. C. Pistorius. "The Competitiveness and innovation". *Elektron*.
41. G. Riley. "Economic Growth - The Role of Human & Social Capital." *Competition & Innovation* 2012.

How to cite this article: Nadia Shakoor and Waqas Ali. The Impact of Trade Facilitation on Trade Flow in Asian Countries. *J Bus Fin Aff* 9 (2020) doi: 10.37421/jbfa.2020.9.378