



# Concentration and Diversification of Export Economy of Bangladesh: Comparison and Policy Implication with Other Asian Countries

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## Authors' contributions

*This work was carried out in collaboration of both authors. Author MF designed the study, managed the literature searches, performed the analysis, wrote the protocol and wrote the first draft of the manuscript. Author PM supervised the author MF to conduct the study. Both authors read and approved the final manuscript.*

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## ABSTRACT

Bangladesh has achieved consistent economic growth last ten years. Its export is also growing but heavily depending on garment sector. This paper measures how much Bangladesh's export concentration than other Asian countries China, Thailand and Vietnam. This paper uses n-Firm concentration to measure top 4 sector concentration, Herfindahl-Hirschman (HH) index to measure single industry domination and analyses current export for compare how much percentage contribution changes of major industries over the period. This paper finds Bangladesh's export highly concentrated on single industry whereas other countries are more diversified on different sectors. Thailand and Vietnam have the same characteristics with Bangladesh in many aspects, but their export sectors diversified very nicely over the year. It explains major reasons for extreme concentration of Bangladesh's export. This paper proposes a diversification framework for Bangladesh with identifying four major variables i.e Dynamic variables, Favourable variables, Structural Transformational Variables, and Policy and Commercial policy. It also suggests some factors with implementation guide under each variable with the experience of Thailand and Vietnam to implement the proposed framework.

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## 1. INTRODUCTION

Bangladesh is one of the rising economies in the world with record 8% growth in 2019. It achieved the highest economic growth across the world in the last 10 years where GDP has grown by 188% since 2009. With the goal of becoming a high-income country by 2041, the government has committed to achieve a growth rate at 10% by FY2023-24 and to maintain that rate until 2041 [1].

Bangladesh's export policy focuses on diversification, expanding exports, enhancing the productivity of export-oriented industries and facilitating the overall development of the export sector through capacity building of the local export-oriented industries. Bangladesh also formulated industrial policy urges diversification and encourages exporters to identify prospective exportable goods [2].

However, the data indicates a growing dependency on one sector of exports. From 1989 to 2018 the value of Bangladesh's export economy grew about 26 times. During the same period, the value of garments export grew 54 times. In 1989-90, garments export accounted for only 59.31% of total exports. Surprisingly, garment export earnings accounted for over 84% of the national exports in 2018-19.

Dependency on a single sector is a potential problem for an economy. If the sector fails, the whole economy can collapse. Concerns about the Bangladesh economy have already started to appear. In January 2020, Bangladesh's exports earnings turned in the negative territory, dropping by 3.62%. The fall is driven by the negative growth in the garment sector. Exporters and economists have blamed appreciation of the taka (currency of Bangladesh, 1taka= 0.012 USD), economic slowdown in Europe and trade tension between the US and China. Trade analysts and economists also blame a bad relationship with buyers over the Accord on Fire and Building Safety for this downtrend [3].

The main aim of this study is to determine the reasons for the increase in export concentration and a suitable strategy and action plan for diversifying it.

More specifically, the research questions of my project are as follows:

- a. Is export economy of Bangladesh more heavily concentrated than its immediate competitors?
- b. How did China, Vietnam and Thailand diversify their export basket over time?
- c. What can Bangladesh learn from the experience of China, Thailand and Vietnam in quest to diversify its exports?
- d. How can Bangladesh diversify its exports with the experience of China, Thailand and Vietnam?

## 2. LITERATURE

After independence in 1972-73, Bangladesh's exports comprised mostly raw jute and a few jute good items which accounted for about nine-tenths of the total export revenue. Its export Sector turning point was after 1980s. The labor intensive traditional export sector (jute & jute goods, leather and tea) is lagging behind and other labor intensive textile sector (knit, woven and home textile) is showing excellent performance and has become the number one export earning sector of Bangladesh. Henceforth, the export composition changed dramatically and Ready-Made Garments (RMG) emerged as the principle export items of the country while jute export stalled [4]. Bangladesh attained notable success in export expansion because of the outstanding performance of the RMG industry. The importance of country's export basket has increased steadily which is equivalent to 18% of GDP which is mostly dependent on RMG products. Any extreme dependency is not good an economy. Bangladesh's policy makers have modified industrial policy an Export policy time to time to diversify its export. But any efforts to significantly diversify export beyond jute and apparels did not bear fruit [5].

Bangladesh has gained significant success in agriculture, achieving third position in vegetable production, fourth position in rice production, and seventh position in mango production in the world. Bangladesh achieve these successes through increasing productivity with adopting climate change [6]. After meeting local demand, Bangladesh have lot of opportunities to diversify focusing on agro-based industrialization and so on.

Vietnam and Thailand are parallel countries of Bangladesh considering location preference,

geographical pattern, environmental similarities, and human composition. There have lot of evidence that those countries transform their export composition over time. But Bangladesh could not gain the expected changes like those countries. Data shows from the very beginning Vietnam's export economy are highly diversified. In 2009, Vietnam's highest export is textiles accounted for 15.65%. Though last 10 years Vietnamese textile sector has grown three times, surprisingly all other sectors of their export basket have also grown simultaneously. In 2018, highest export sector is telephones and their parts accounted for 20% whereas textiles sector accounted for 12% [7]. The growth in foreign direct investment in Vietnam, driven by its strategic location, low wages, and improvement in the business environment are the major factors that transformed Vietnam into a manufacturing hub in the region. In the long-term, this trend is expected to continue if Vietnam can maintain its competitive advantages. In addition, FTAs such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and EU-Vietnam FTA (EVFTA) will diversify the export markets for Vietnam [8]. Last two decades, Thailand has lessened its over heavy dependency on rice and rubber exports by diversifying its export basket.

Over the last four decades, China has successfully transformed from a nearly closed state into a fully integrated international economy and achieved rapid growth and transformation in foreign trade. They benefited from the rise in regional economic integration through the development of cross-country production networks, vertical integration of production chains as multinational companies (MNC) sought lower-cost manufacturing facilities beyond national boundaries and capitalized on supportive local policy initiatives [9]. As a result, China has diversified into intermediate goods.

The new conventional observation in the development literature is that poor developing countries like Bangladesh should transform their production and export structures to achieve sustained growth and poverty reduction [10]. The Sustainable Development Goals (SDGs), the Istanbul Programme of Action for the Least Developed Countries (LDCs) and the African Union's Agenda 2063 emphasize the importance of export diversification and structural transformation in achieving national development objectives [11,12,13]. Given the crucial role that

diversification is expected to play in transforming economies and achieving goals expounded in recent national, regional and global development initiatives, it is necessary to examine the determinants of export diversification in developing countries.

Existing studies do not account simultaneously for the role of energy infrastructure and services, weak domestic production structure and natural resource endowments in the diversification process. Regarding domestic production structure, there are indications that weaknesses in export performance in LDCs are associated with weaknesses in industrial performance [14]. Countries that have weak domestic production structures, as reflected in weak industrial performance, generally lack the capability to produce varieties of goods and services and so have weak trade performance. In this context, there is the need to incorporate the roles of poor energy infrastructure and services and a weak domestic production structure in studies on the determinants of diversification in Africa and LDCs. There is also the need to take into account the role of natural resource endowments given the fact that many countries in Africa and LDCs are resource-rich and the economic literature suggests that resource endowments play a role in the growth and diversification process of developing countries [10].

This paper tries to fill the existing gap in the literature of giving specific policy suggestion for export diversification of Bangladesh. It uses export data of Bangladesh, China, Thailand and Vietnam for identifying the trends of export. It analyses trade policy, industrial policy, industrial development plan etc papers of these countries to develop a more effective export diversification framework for Bangladesh.

The rest of the paper is organized as follows: Section-3 the data description and empirical strategy, section-4 export policy and trade related initiatives, section-5 the data analysis and current export status, section-6 reasons for export concentration of Bangladesh, section-8 export diversification framework for Bangladesh and section-8 concluding remarks and policy implications.

### 3. DATA DESCRIPTION AND STRATEGY

This paper uses export data of Bangladesh, China, Thailand, and Vietnam which collects primary export data from the government

websites of these countries [15,16,17,18,19]. Using those data, this paper identifies whether export economy of those countries is concentrated or diversified last a few years. For this purpose, this paper uses two important and vastly used n-Firm Concentration Ratio ( $CR_n$ ) and Herfindahl-Hirschman (HH) index.

$$n - \text{Firm Concentration Ratio } (CR_n) = \sum_{i=1}^n s_i$$

$$\text{Herfindahl-Hirschman index } (HHI) = \sum_{i=1}^n s_i^2$$

Whereas, 'n' is the number of export items or sectors based on Harmonized System (HS) code, 'i' is the number of periods taken for analysis and 's<sub>i</sub>' is percentage contribution of each sector or item to total export revenue. In the collected data, this paper uses 2 (two) digit HS code. Moreover, the countries published export data in the websites by combining related items/less important items with others as summary format.

In case of n-firm concentration ratio calculation, we use top 4 (four) sectors percentage contribution on total exports of all countries. 4-firm concentration ratio ( $CR_4$ ) shows cumulative contribution in percentage of top 4 (four) sectors. If any country's export is confined in only 4 sectors, its  $CR_4$  is 100. On the other hand, if any country's export infinitive sectors with small proportion of share, its  $CR_4$  is close to 0. So, in this case  $CR_4$  ranges between 0 to 100. Higher result shows higher concentrated export economy and vice versa.

However, n-firm concentration ratio ( $CR_n$ ) only shows the top firms' cumulative contribution which cannot show the one firm domination in the industry. In that case, Herfindahl-Hirschman (HH) index more useful to measure single firm domination in the industry. So, in this paper we also use Herfindahl-Hirschman (HH) to show the degree of single sector domination on export economy of these countries. In Herfindahl-Hirschman (HH) index percentage contribution of each sector considered as integer. To get HH each value needs to be squared and then sum the squared values. If any country's export is confined in only 1 (one) sector 100% contribution, its HH index is  $(100 \times 100) = 10000$ . On the other hand, if any country's export infinitive sectors with very small proportion of share, its HH index is near to 0. So, range of result in HH index between 0 to 10000. Higher result indicates the domination by single sector in export economy.

## 4. EXPORT POLICY AND TRADE RELATED INITIATIVES

### 4.1 Bangladesh

Bangladesh's current export policy has formulated urging on diversification. Its convergences with the existing industrial policy where government has initiated to increase the production of exportable through domestic industrialization and development of small and medium enterprises (SMEs). There has also included specific guidelines for capacity enhancement, technological development and exploring diversified world market of agricultural products, jute, leather, engineering industry and computer software etc. Bangladesh has targeted to utilize their cheap labour convert into competitive edge. They have also planned for establishing labour-intensive export industries through massive training programs, reduced loan interest, backward and forward linkage, improving utility services, installing state-of-the-art laboratories for controlling and testing the export quality, setting up product-based industrial zones or clusters, confirming easy availability of raw materials, disseminating updated information to the producers on markets and technology on a regular basis and continuous developing their Ports. To implement export diversification government identified some products as "highest priority sectors" and some products as "special development sectors" with special privilege. Five Business Promotion Councils (BPC) are already formed under public-private partnership to enhance the capacity and awareness of the exporters, mitigate the supply constraints, diversifying export, improving and ensuring the quality of products, fulfilling compliance requirements, attaining appropriate technologies, marketing of products etc [2].

Industrial Policy of Bangladesh aims to encourage and to assist in ensuring sustainable environment-friendly industrialization as well as to improve the specialized industry by maximum utilization of local agricultural, forestry, livestock, natural and ocean resources. As per policy, there are some plans to set up economic zones, industrial parks, cluster-based industries, hi-tech parks, and industrialization through the public-private partnership. To develop and diversify export, BEPZA also plays significant role in attracting foreign direct investment as well as in involving local investment, particularly through industrialization by 'Open Door Policy'.

## 4.2 China

China made great changes in its structure of trade from resource-based products to light textile products, then gradually to mechanical and electrical products and then to high-tech products in last 40 years. In 2006, they introduced 'Regulations on Adjusting the Tax Refund Rates for Certain Products and Adding the Catalogue of Prohibited Products for Processing Trade' to better guide the transformation and upgrading of processing trade. China also introduced several measures to promote exports, including the dual exchange rate, the foreign trade contract responsibility system and export rebates. In beginning, China had very high tariffs which they gradually reduced, and they signed MoU with different countries to improve trade between them. They simplified and improved transparency import licensing procedures [20].

Initially, China adopted administrative decentralization, foreign exchange retention, the foreign trade contract responsibility system, adoption of a more realistic exchange rate to improve its exports. Administrative decentralization is the redistribution of authority and responsibility for the planning, financing, and managing specific public functions among the different level/units of agencies. Foreign exchange retention is a system of retaining the rights to buy back of the foreign exchange earnings. Foreign trade contract responsibility system is an agreement between trade operator and foreign entity where contains the clauses identifying commodity, quality, quantity, price, delivery details, inspection terms etc. Realistic exchange rate measures the price of foreign goods relative to the price of domestic goods.

China's National Foreign Trade Corporations (FTCs) redistributed its powers to its provincial branches. Foreign funded enterprises authorised to import raw materials and capital machinery and to export their own products directly. A few special economic zones, provinces, autonomous regions, and municipalities were also permitted to open ports to engage in foreign trade. As a result, the number of export trade companies increased from 12 to 5,075 in 1988 within 10 years [21].

SOEs receive various central and local government financial subsidies, other special subsidies, preferential and policy loans and investment and tax subsidies under industrial

policy. These discriminate against imported goods and foreign enterprises. Industrial policies for some sectors (such as automobiles and steel) constitute trade and investment barriers. The concept of 'national economic security' is blurred when antitrust law is used to implement industrial policies, and the treatment of administrative monopolies [22].

## 4.3 Thailand

Initially in 1958, Thailand adopted the import substitution industrialization. In 1981, it switched to export-oriented industrialization. In 2016, the government has launched Thailand 4.0 policy to transform the Thai economy into a value-based economy. They have selected ten newly targeted industries as new and more sustainable growth engines under a new digital Internet of Things (IoT) plan. These industries are divided equally into two segments as 5 S-curved and 5 new S-curved industries. S-curved (S-refers to the word 'Sigmoidal') describes the mathematical arc that the industries enter market and start to undergo cycle of growth and stagnation. The five S-curved industries include new-generation automotive, smart electronics, affluent, medical and wellness tourism, agriculture and biotechnology, and food for the future. The five new S-curved industries include manufacturing robotics, medical hub, aviation and logistics, biofuels and biochemicals and digital industries which as emerge high-tech industries slated to become significant long-term growth drivers. Thailand has established the Eastern Economic Corridor (EEC) as the newest special economic zone to achieve the industrial transformation under Thailand 4.0 policy.

Thai government has formulated a few plans to harness the potential of Industry 4.0 [23]. In case of International Trade, Thailand placed significant priority on building strong relations and development partnership with neighbouring countries through key regional economic cooperation frameworks particularly Association of South East Asian Nations (ASEAN), Greater Mekong Subregion (GMS), Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS), Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Thailand also desired to exploit international economic relationships for enhancing national competitiveness. However, ASEAN and GMS are among primary main concern [24].

Thailand export manufacturers have been motivated and promoted by Thai government to building their own brands. Thailand export products within scope of country image have tried to build up their own brand, like Swiss watches, Scotch whisky, Columbian coffee, and Russian vodka [25].

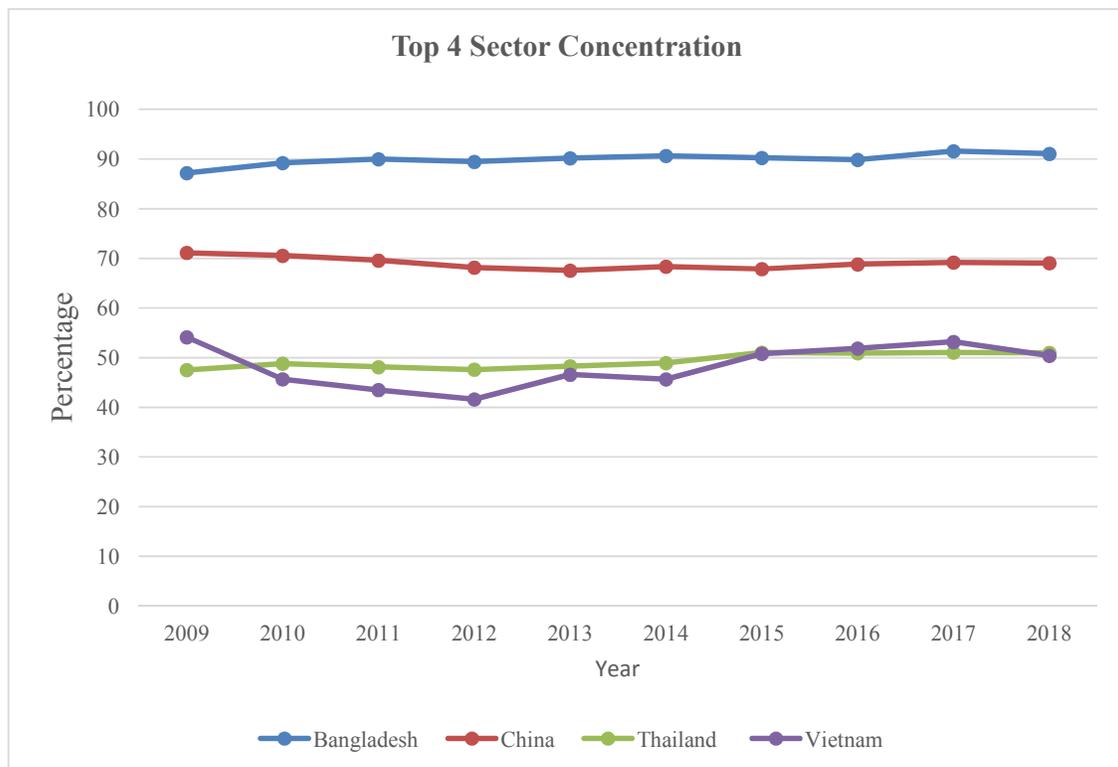
#### 4.4 Vietnam

Vietnam has made a remarkable transition from a centrally planned industrial sector dominated by administrative allocation of inputs and outputs to an industrial sector governed mainly by market forces since 1989. Vietnamese exports are twenty-fold what they were in the 1980s and industrial products sold around the world are the largest contributors to these export sales [26]. Much of the success in industrial development to date has been the result of government decisions to remove barriers to entrepreneurial efforts for both foreign direct investors and more recently for domestic private investors. The first barriers to fall were the restrictions on imports and access to foreign exchange. These steps were followed by policies designed to create a

favourable environment for foreign direct investment. More recently the most important step has been the passage of two enterprise laws that effectively removed many of the obstacles in the path of domestic private entrepreneurs leading to a boom in private industrial development activity. In recent years there also has been a large scale move to equitize many state-owned firms.

Vietnam must create a competitive environment for all industries. The central industrial policy initiative recently has been the government's decision to create state owned conglomerates mainly in the heavy industry sector. The stated goal is to create large corporations that can become internationally competitive firms with well-known brands.

From the above policy analysis of the four countries, we can say that they have taken initiative for improving their export performance with diversification. Bangladesh has taken policy initiatives, but details action plan is absence. On the other hand, China, Thailand and Vietnam specifically focus on export-based



**Fig. 1. Top 4 sector concentration**  
 Source: Authors' Calculation based on collected data

industrialization. Thailand and Vietnam also focus on branding on their resource based industrial product worldwide.

#### 4.5 Data Analysis

Based on collected data, this paper shows concentration scenario of Bangladesh, China, Thailand, and Vietnam. In concentration analysis, we use n-Firm Concentration ratio and Herfindahl-Hirschman (HH) index. After concentration analysis, we show how the major export sectors distributed each country.

#### 4.6 N-Firm Concentration

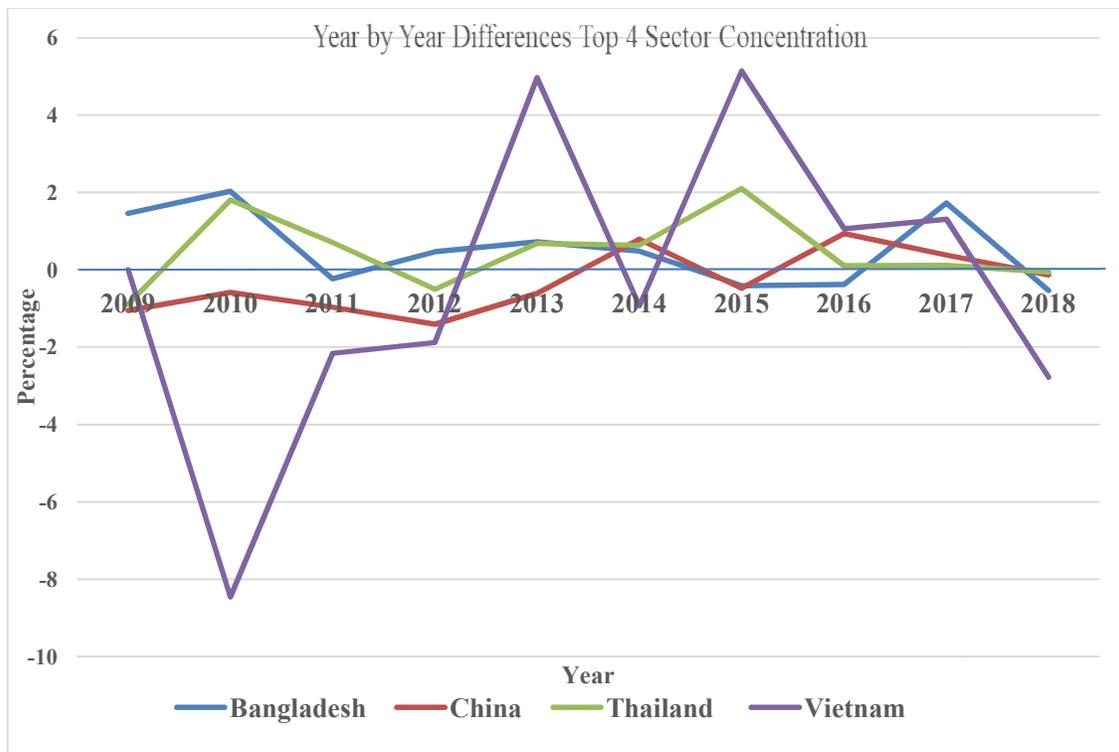
In the following Fig. 1 shows the top four export items/sectors concentration of Bangladesh, China, Thailand, and Vietnam from the year 2009 to 2018 based on percentage share of each items of total export value.

Last 10 years, Bangladesh's export is highly concentration among the top four sectors which is gradually increasing trend over the period. Whereas others three countries are much lower

concentrated than Bangladesh. Compared to Bangladesh, export sector of China, Thailand and Vietnam much more diversified. Though, China's top four sector is concentrated than Thailand and Vietnam, China have been reducing proportionately dependence on four sectors last ten years. Top four export sectors of Thailand and Vietnam fluctuate over the last ten years. Among the countries, Vietnam has showed outstanding performance through sectoral development. Four sector concentration lowering indicates next best sectors performed well at the same time. Overall, except Bangladesh other three countries successfully have lowered their concentration different period by sectoral development.

In the Fig. 2 has shown the top four sector concentration difference of the four countries. Most of the concentration change was positive in Bangladesh. Whereas other three countries concentration change was negative.

From the above n-Firm concentration analysis, Bangladesh's export economy is highly concentrated compare to other countries.



**Fig. 2. Year by year difference of top four sector concentration**

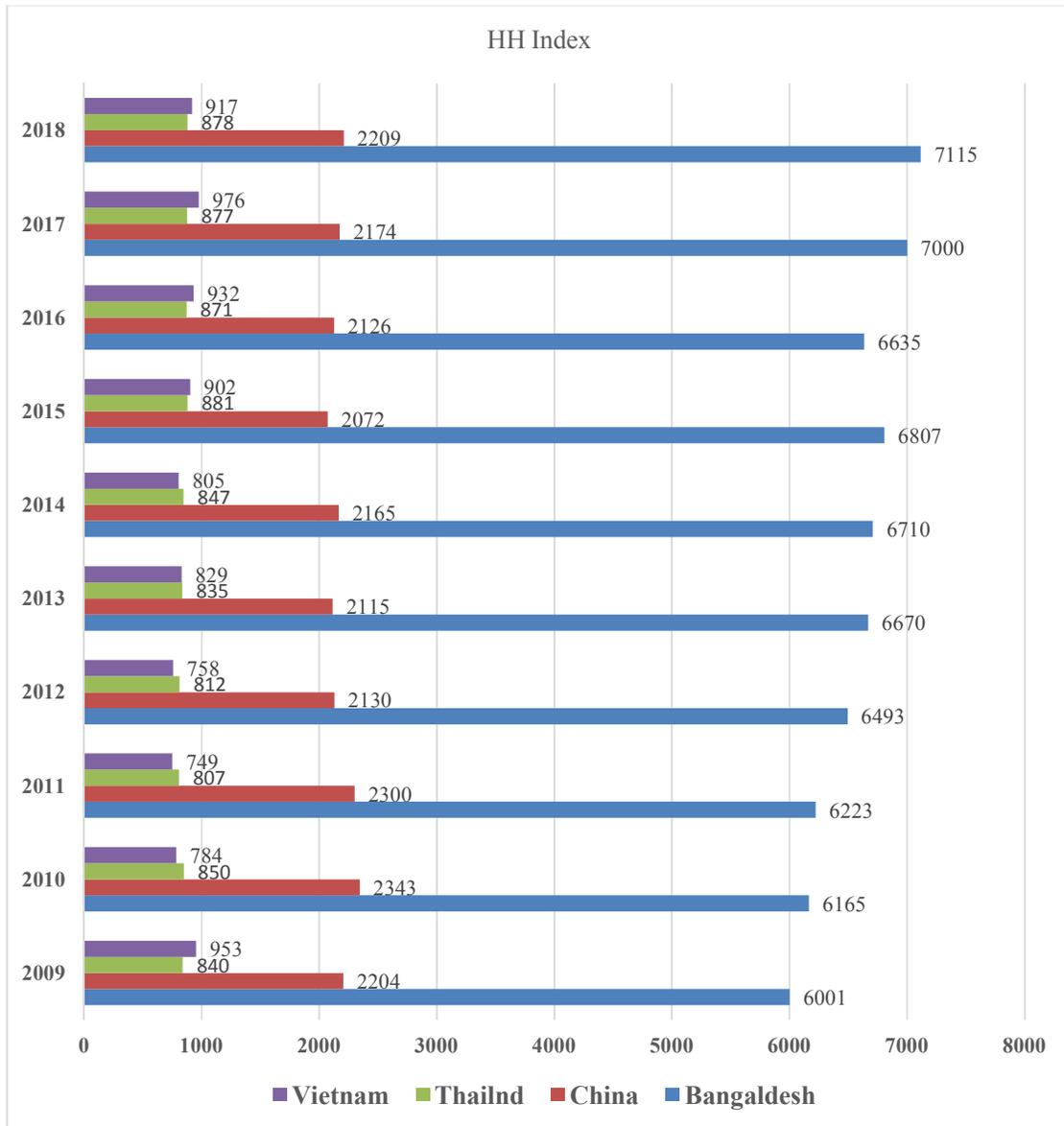
Source: Authors' Calculation based on collected data

### 4.7 Herfindahl Hirschman (HH) Index

This paper analyzes how much domination of sectors/items in the export economy of the countries through HH index. The following Fig. 3 shows the HHI values of Bangladesh, China, Thailand and Vietnam from 2009 to 2018.

HHI index identifies whether there is single sector domination in the export basket or not. If there is only one sector, then HHI would be

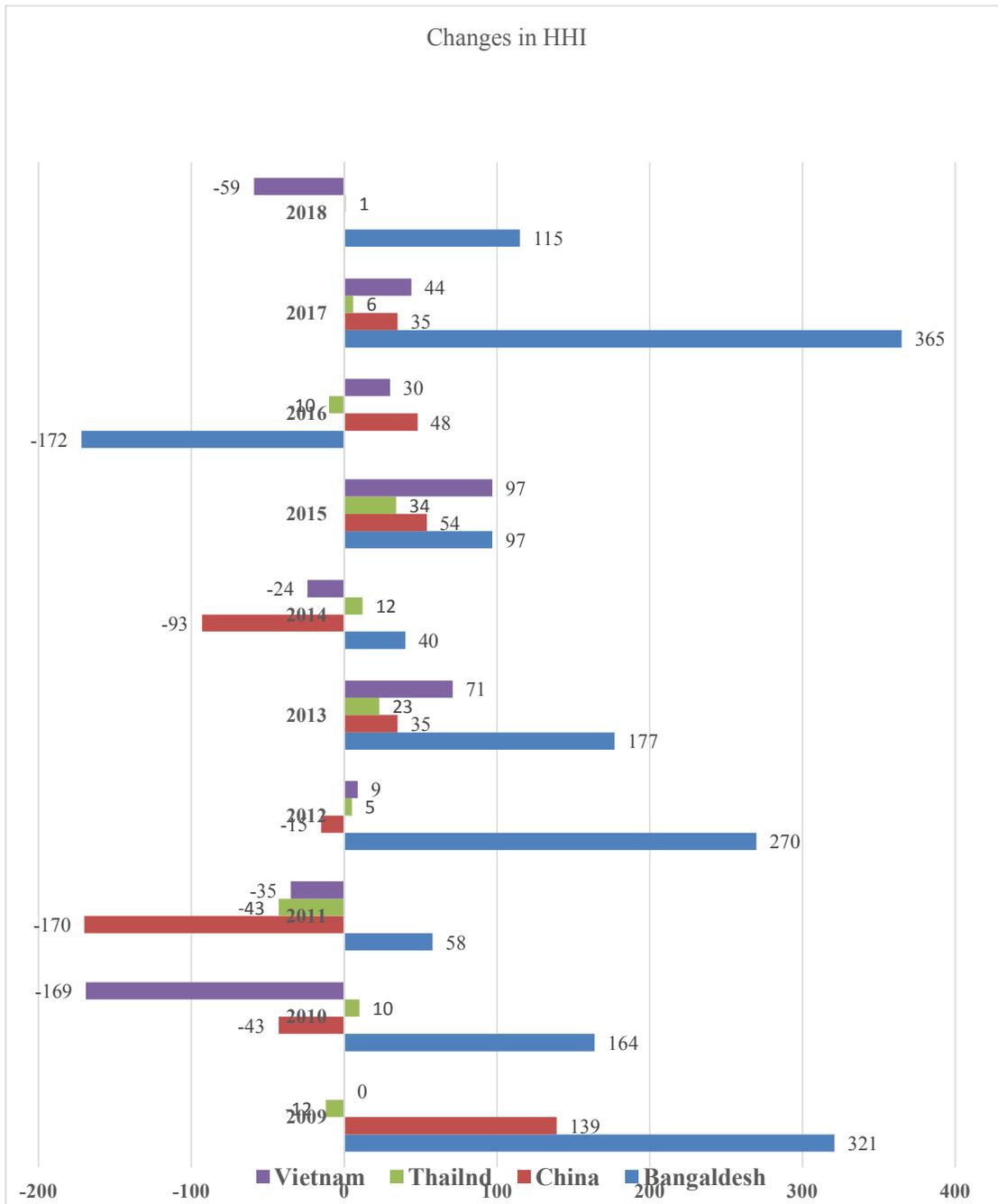
$(100 \times 100) = 10000$ . If there are only two equal sectors, then HHI would be  $(50 \times 50 + 50 \times 50) = 5000$ . From the above graph, it shows Bangladesh's export totally dependent on a single sector. There are also some sectors whose contribution is negligible. China's export economy has comparatively domination of one industry than Thailand and Vietnam, but not much as Bangladesh. However, China, Thailand and Vietnam have modified their dependency whereas Bangladesh has not.



**Fig. 3. Herfindahl-Hirschman (HH) index**  
 Source: Authors' Calculation based on collected data

In the Fig. 4 shows the changes of HHI every year. Among the four countries Bangladesh's export sector gradually extremely depending on single sectors which is clearly identified. Every year HHI has increased in Bangladesh

whereas other countries HHI has decreased. This means, other export items/sectors in China, Thailand and Vietnam is strong and those countries export is not dependent on one sector.



**Fig. 4. Changes in Herfindahl-Hirschman (HH) index**

Source: Authors' Calculation based on collected data

#### 4.8 Current Export Status

In this part, major export sectors contribution and changes over the year of Bangladesh, Thailand and China are explained. Based on the analysis, here focuses how Thailand and Vietnam changes export pattern.

##### 4.8.1 Bangladesh

From Fig. 5, we can see how much concentrated and dependence on single sector has increased over the last 30 years. This indicates that only one sector has grown, and other sectors are stagnant which is very risky for an economy. The export value is increased on the specific sector and other sectors are stagnant.

Bangladesh's export destination is also concentrated with few countries. As per Export Promotion Bureau (EPB) data, in the fiscal year 2018-19 Bangladesh earned 71.27% of the total exports came from the United States of America, Germany, the United Kingdom, Spain, France, Italy, Canada, Japan, the Netherlands and Poland whereas United States of America taking the lead with 17% exports share.

##### 4.8.2 China

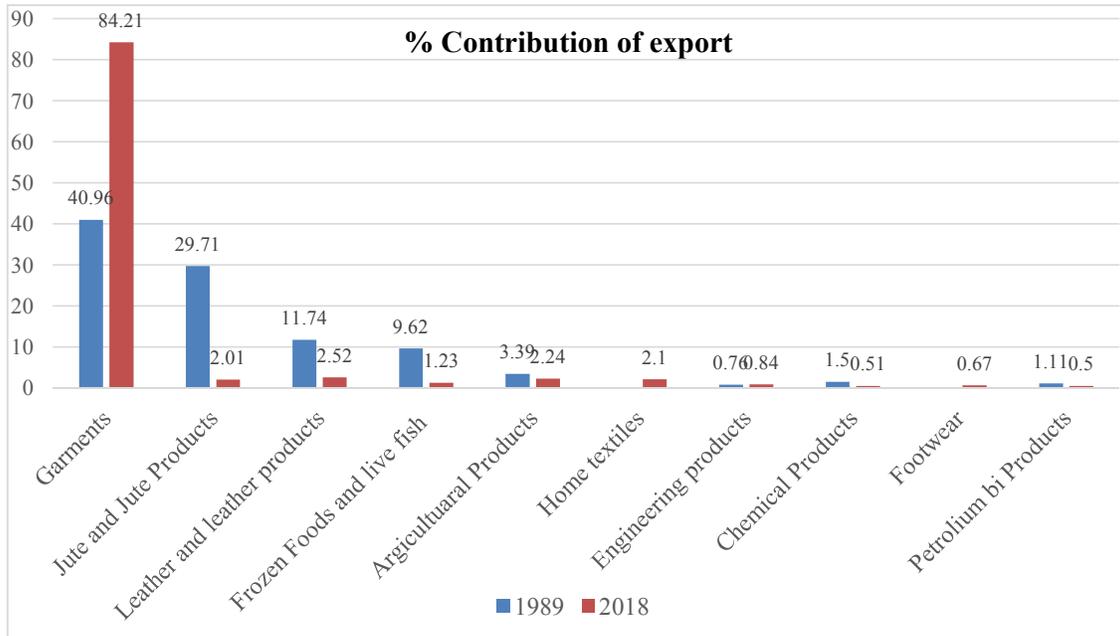
In Fig. 6 shows the major export items performance of China in 2006 and in 2018.

Though in China's export basket machinery is the largest contributor, last 12 years average performance of this sector remains almost same. Last 12 years China's export revenue increased by 2.5 times but surprising almost all the sectors has increased their share almost equally. However, slight proportionate contribution to export decreases in textiles and base metal average where and furniture, toys etc and increases in vehicles, Chemical products and plastic products sectors.

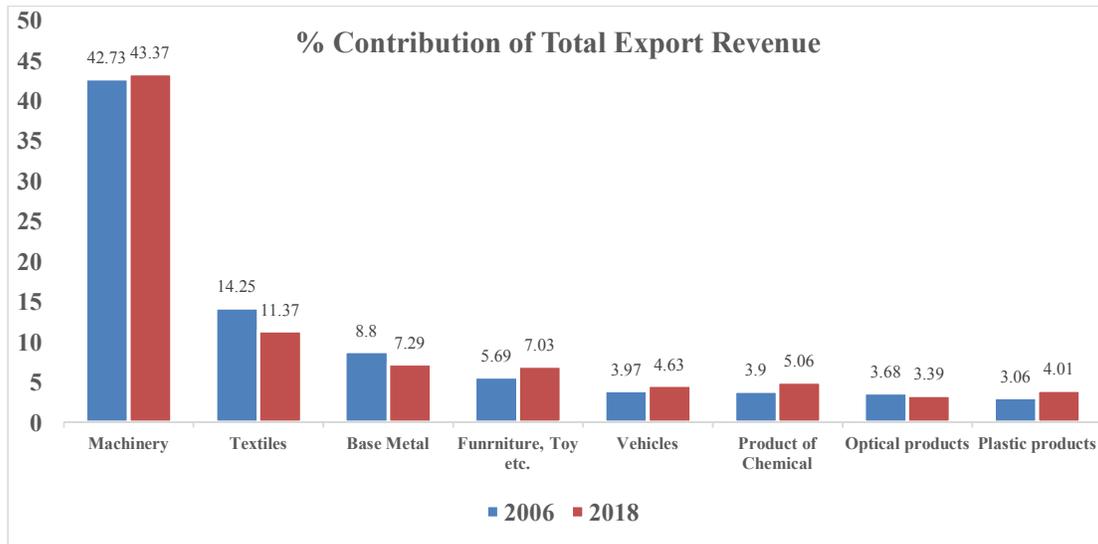
##### 4.8.3 Thailand

In the Fig. 7 shows the percentage contribution of different sector on total export of Thailand in the year 1995 and 2018. This indicates no industry dominate in export economy in Thailand. Some sectors such as electronics, textile, agriculture etc contribution was higher in 1995 but over the year export was diversified and other sector such as agro-manufacturing, machinery, automobiles etc contribution has enlarged.

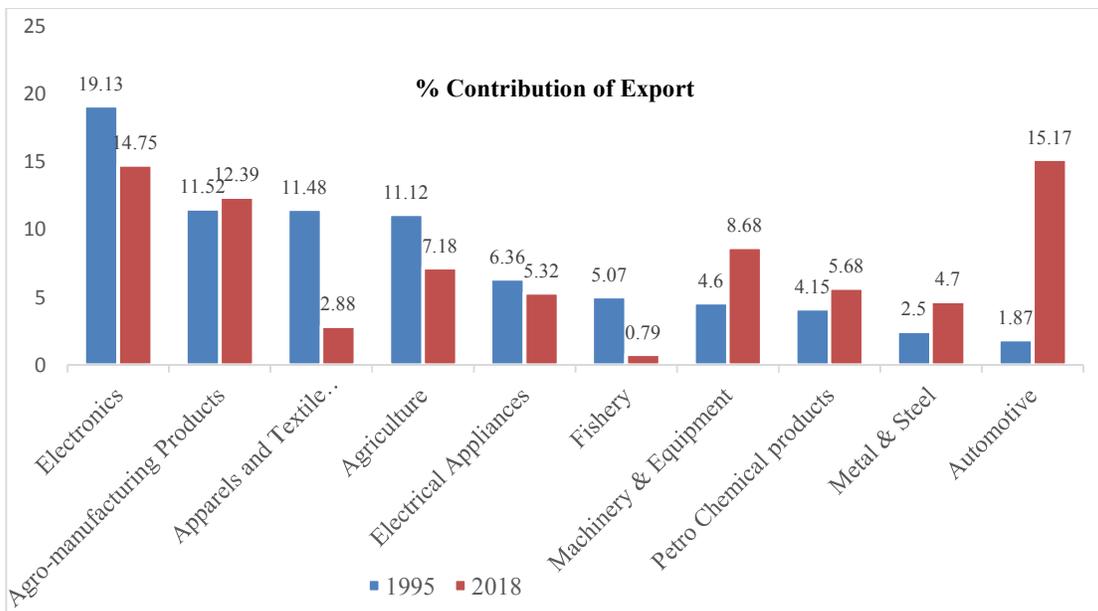
Thailand's export of agricultural products was classified into food and agricultural products and agricultural products for agro-industry. Thailand's agricultural products market is East Asia, ASEAN countries, North American countries, UK, and EU. Every year export is increasing in this market. Thailand diversified their export



**Fig. 5. Major export items performance of Bangladesh**  
Data Source: Export Promotion Bureau, Bangladesh



**Fig. 6. Major export items performance of China**  
Data Source: National Bureau of Statistics, China



**Fig. 7. Major export items performance of Thailand**  
Data source: Bank of Thailand

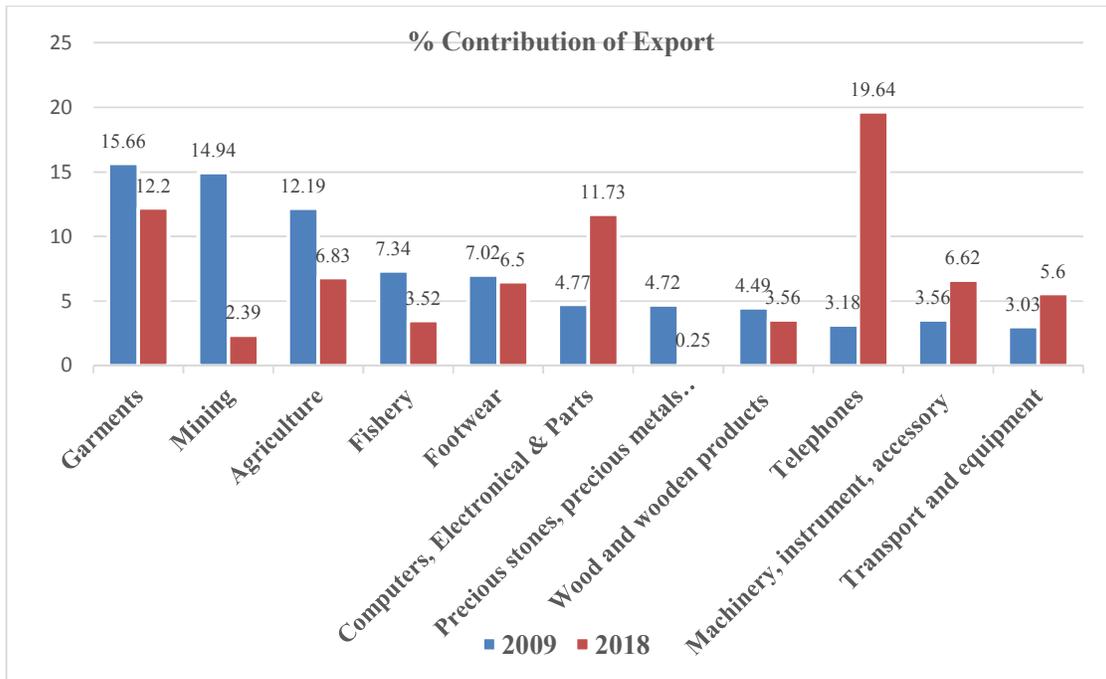
diversification through adopting a dual strategy (i) to upgrade natural resource-based industries (such as agricultural and fish products) and (ii) to encourage labour-intensive manufactured exports, most notably clothing and electronics.

#### 4.8.4 Vietnam

In Fig. 8 shows the percentage contribution of major export items of Vietnam in year 2009 and 2018. Over the ten years Vietnam diversified

their export pattern not necessarily dependent on specific sector. In 2009 major export items was garments, mining, agriculture and within next few years Vietnam included telephone and its accessories, computer and its accessories, machinery, footwear as its major export list.

Vietnam diversify its export through inviting huge Foreign Direct Investment (FDI) in economy. Foreign investors use Vietnam's liberal business environment and shift their factories here.



**Fig. 8. Major export items performance of Vietnam**  
 Data source: General Statistics office Vietnam

In a summary of analysis of current export performance, China, Thailand and Vietnam have modified export basket over the time adopting and implementing different policies. These countries have transformed their economy with establishing export-oriented industries and diversified their export. On the other hand, Bangladesh's export is extremely concentrated in single industry. Bangladesh's adopted policy cannot make its export diversified because of failing to implement. Bangladesh can take agro-manufacturing experience from Thailand. Bangladesh has record production of agriculture products among every year enormous volume products faces post-harvest loses due to absence of proper utilization. Welcoming foreign export-oriented industries use the labor force and ensure technology transfer as Vietnam.

**5. REASONS FOR EXTREME CONCENTRATION OF EXPORT OF BANGLADESH**

In data analysis, it shows that Bangladesh's export economy is highly concentrated on single industry and every year this dependence has been growing. However, Bangladesh's trade policy and industrial policy highly emphasized diversification. It can be concluded that initiative and reality is highly mismatched in case of

Bangladesh. This part finds the following issues which are mainly responsible for higher concentration of Bangladesh's export.

**5.1 Exchange Rate Protection**

Garments exports of Bangladesh are partly protected from exchange rate movements because it is backed by of the special import credit system which is called back-to-back Letter of Credit (LC). This LC covers import costs from export proceeds. To improve non-traditional items exports from local industries could be hurt by appreciation of the real effective exchange rate. So, businesses are growing in garments sector denying non-traditional sectors.

**5.2 Policy Reformation**

Bangladesh's garment industry has achieved efficiency with experience. Single industry concentration with ignoring other industries reduce firm-level productivity for other private domestic firms which hampers the economic progress. Reformation of domestic policy is crucial to diversify export of Bangladesh. Reformation policy should include trade and market liberalisation to remove local market constraints and strengthen within-firm efficiency, improvements necessary for entry into export

markets, and investments in research & development.

### 5.3 Export Competitiveness

Cost, quality, time and reliability are the four dimensions considered as competitiveness of export. To operate garment factory low level skill is enough. Bangladesh labor cost is cheap compare to other competitors in the market. So, Bangladesh has achieved competitive advantage in garments sector with long years' experience. But other sectors are far behind to achieve these advantages. Policy makers should come ahead with the collaboration with entrepreneur to create branding image of our non-traditional product.

### 5.4 Environment for Trade

Worldwide, there are two frequently used trade indicators are Enabling Trade Index (ETI) and Trade Logistics Performance Index (LPI). First one measure by World Economic Forum (WEF) and second one is measured by World Bank (WB). Unfortunately, Bangladesh's position does very poorly most of the indicators including the above indicators. Bangladesh is lagging for low scores in power and transport which appeared as serious barriers to manufacturing sector [27]. However, most of the garment factories are in major cities where these manage constraints but other industries in local level cannot overcome constraints. So, garment industry continues anyhow but other industries do not grow.

### 5.5 Doing Business

Considering facilities from the regularity agencies, ease of doing business index is prepared. Bangladesh performs poor in this index particularly for difficulties to get electricity, register property, enforce contracts etc. Barriers getting from regulators, investors are demotivated to do business in Bangladesh especially Foreign Direct Investment (FDI). Most of the garments are managed by local owners who already overcome technological barriers. But other sectors are failing to technology and experience transfer through FDI for ease of doing business barriers. So, Policy makers should be strong enough to remove the barriers for ensuring ease to doing business.

### 5.6 Skills of Labor Force

Bangladesh is a one of beneficiary country of the demographic dividend in world. Unfortunately,

Bangladesh cannot utilize this prospect because of poor skill level. Unskilled labor is the main reason for constraints productivity of Bangladesh. To operate garments required a little skill which Bangladesh's labor earn within a few days. But they are not efficient enough to employ in technology-based industry.

### 5.7 Foreign Direct Investment (FDI)

Bangladesh is facing seriously low FDI inflows which is also a constraint to export diversification. If Bangladesh can ensure FDI which will help to establish some export-oriented industries in other sectors. However, garment factories are run by local owners, so low FDI does not affect this sector. Political instability and poor infrastructure are demotivated the foreign investors. Policy makers should ensure special benefit to foreign investors to attract in Bangladesh.

### 5.8 Tariff Regime

Bangladesh is one of the Most Favoured Nation (MFN) in exporting garments items so it can easily capture specific western market in this sector. But Bangladesh's other non-traditional sectors is facing unfriendly tariffs regime which creates anti-export bias [28]. Policy makers should ensure trade policy low and uniform tariffs and a seamless export-import regime which is suitable for competitive export of non-traditional sector except garments.

## 6. EXPORT DIVERSIFICATION FRAMEWORK FOR BANGLADESH

I develop an export diversification framework for Bangladesh based on export pattern, performance and initiatives analysis of Thailand and Vietnam. Diversifying the production structure of an economy and providing better access to infrastructure and services are crucial for promoting export diversification. Natural resource endowments contribute to export concentration [10]. Thailand has showed success in development of agro processing industries. Bangladesh has strong background with huge agricultural production. Every year a big proportion of agricultural produce has been go for post-harvest loss absence proper use. On the other hand, Vietnam showed diversification success on computer, electronical, footwear, telephone and its parts export through export-oriented industrialization. Using Thailand and Vietnam experience, following diversification

framework is proposed which may best fit for Bangladesh.

## 6.1 Variable Description

There are many ways to diversify the export of a country such as product diversification, geographical diversification, intermediate goods diversification, vertical diversification, quality diversification, goods to services diversification [29].

The suggested diversification framework Fig. 9 combines four variables which are in turn supported by sub variables which elaborate the aforesaid objectives.

The main variables of the diversification framework are Dynamic, Favorable, Structural Transformation, Fiscal Commercial Policy. To get the best result with shortest period necessary strategy should be taken to implement these core variables

ED = F (DV, EV, STV, FCV)  
EP = Export Diversification  
DV = Dynamic Variables  
FV = Favorable Variables  
STV = Structural Transformation Variables  
FCV = Fiscal and Commercial policy variables  
F= factor

These four factors indicate a comprehensive policy package period. However, each factor would require a specific time frame to smooth completion of the objective.

### 6.1.1 Dynamic variables

To implement this framework, policy makers of Bangladesh should first focus on the current weak export penetration level. They need to give special attention on priority basis of identified threats. They do not need to establish any institution or entities; they just act to removal heavy weighted barriers under existing set up [30]. Under dynamic variables, they should mainly fix the export target and include the non-traditional items in export basket which are currently exported in little amount but has prospect in the targeted countries.

In this case, Bangladesh can take the experience from Thailand which is agro-processing foods exporter in world market. Thailand has produces innovative and high value processed products such as frozen meals, canned foods, halal foods,

food seasonings, food supplements, functional foods, and medical foods [25]. Thailand exports halal products to more than 57 countries, as a Muslim majority country Bangladesh can take this opportunity of halal brand.

To develop the non-tradition sector and enhance export for diversification Bangladesh should improve current Foreign Direct Investment (FDI) inflows. This will help ensure technology transfer and expertise enhancement of Bangladesh. Thailand and Vietnam have at least ten times more FDI than Bangladesh which spur their export sector to diversify.

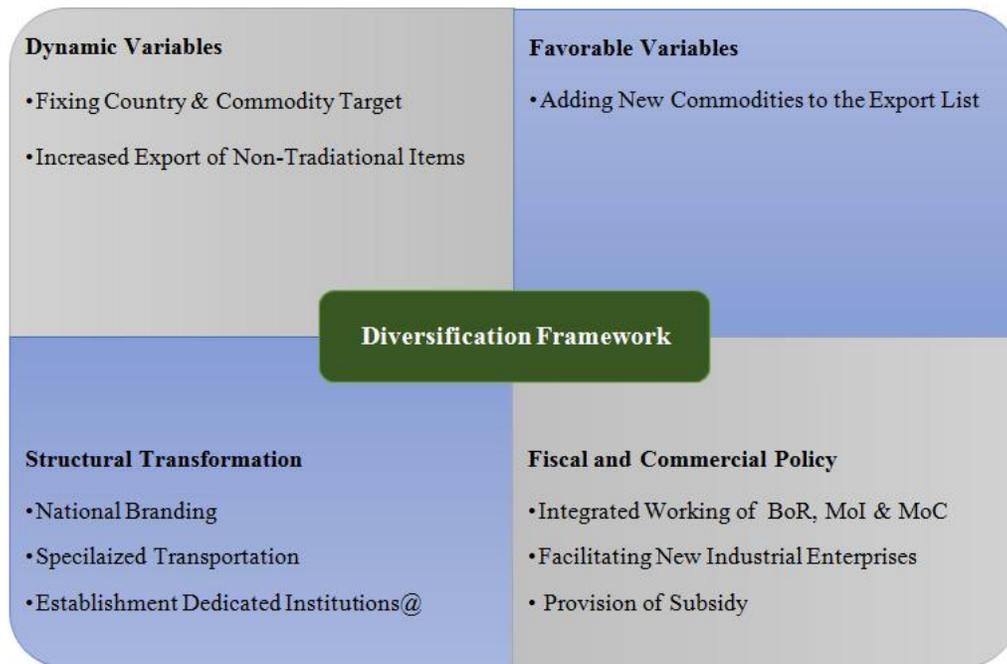
Bangladesh's export limited in USA and some European countries. On the other hand, Thai exports approaching two-thirds (63.2%) to fellow Asian countries in 2019. Bangladesh can utilize this Asian export hub by improving bilateral and regional cooperation.

### 6.1.2 Favorable variables

Under this variable, policy makers of Bangladesh should identify the new commodity to include export list. This will reduce the heavily dependence on single sector. In this case Bangladesh need to current resource-based demand driven targeting. Bangladesh has labor forces as resources. Bangladesh's labors are not train and equipped. Government can take initiative make them technically educated for best fit in demand driven industry. Worldwide have huge demand electronics, machinery parts. Bangladesh can include them in their emerging export list.

Vietnam has appeared as an important electronics exporter in world market. They have showed remarkable success in exporting telephone and parts, computer equipment exports. Vietnam's electrical and electronic products overtaking coffee, textiles, and rice to become the country's top export item. In Vietnam Samsung has invested over US\$17 billion. Bangladesh can take experience of Vietnam to develop new sector through focusing on FDI inflows [8].

Recent years international trade in intermediate goods developed as one of the most dynamic sectors focusing on export-led growth. To implement Fragmented production process across the countries (in line with their comparative advantage) with moving to lower wage economies while higher value-added



**Fig. 9. Export diversification framework**

components is important to make this possible. Fragmentation of production processes gave rise to Global Value Chains (GVCs) creating opportunities for intra-industry trade globally & also between economies within a region. Bangladesh can easily exploit GVCs to produce parts and components of final products through proposing FDI and joint ventures.

**6.1.3 Structural transformation variables**

Structural transformation variable instigates the performance of other variables effectively. In this case, the institutional development in Bangladesh will serve as a catalyst for boosting exports. Under the Structural transformation identified factors are national branding, specialized transportation and establish dedicated institutions.

Bangladesh should take initiative of national branding with ensuring buyers demand. Thailand has achieved massive success in export by creating country brand image [25]. Thai government has established the National Innovation Agency (NIA) to stimulate the level of innovation of Thai products in the three major strategic areas including Bio-business, Energy and Environment, and Design and Branding. Bangladesh can also take such initiative for banding its product manufactured through small

and medium enterprises. For taking the benefit of the economics of scale in worldwide competitive market, there has no alternative of institutionalization. For institutional development trade infrastructure needs to upgrade, efficient Containerization, efficient land ports, automation (with ICT), special focus on export processing zones or special economic zones is needed.

All exports must be brought within the fold of priority clearance mechanism that is equipped with state-of-the-art hardware and software through ensuring efficiency of customs administration. Modernizing import-export clearance by using better technology and IT software complements export diversification for Bangladesh. Land and sea-ports must be equipped with state-of-the-art facilities, container depots, gantry cranes, IT-enabled port clearance services, etc for rapid clearance of import-export cargo [27].

Bangladesh’s congested transportation and often unsophisticated logistics systems impose high costs to the economy. By making its logistics more efficient, Bangladesh can significantly optimise its connectivity, business environment, and competitiveness, putting the country on the right path to become a dynamic upper middle-income country. Efficient logistic has become one of the main drivers for global trade

competitiveness and export growth and diversification. Improving its logistics requires a system-wide approach based on greater coordination among all public institutions involved in logistics and with the private sector [27].

At present all the commercial banks in Bangladesh perform export/ import activities with other banking activities. Establishing dedicated export/import bank can accelerate export related activities. The export/import bank will focus attention on are given below: (i) Grant of Loans on Subsidized Interest Rate (ii) Relaxation in Debt–equity Ratio (iii) Establishment of Branch Network in Rural Areas (iv) Specific Commodity Funding [30].

#### 6.1.4 Fiscal and commercial policy

Fiscal and commercial policy can spur trade of a country. Bangladesh should amend related policies for improving trade. The major factors under this variable are integrated working of related institutions such as Board of Revenue (BoR), Ministry of Industry (MoI) and Ministry of Commerce (MoC), facilitating new industrial enterprises, Provision of Subsidy.

Proactive actions to eliminate anti-export and anti-intermediate goods bias need to take with the cooperation of government agencies. A liberalized investment policy needs to announce to welcome the international firms to work with local firms. Potential joint ventures will ensure diffusion of technology through GVC which ultimately improve capacity of local firms.

Vietnam has succeeded in exporting non-traditional items. Bangladesh can utilize the experience and develop new industrial enterprise [31]. Government needs to offer special facilities such as corporate tax waiver, import liberalization, property rights, and a developed financial system with upgrading relevant laws. Governments of Bangladesh also take initiative to protect the non-traditional exporters, if they face any loss from foreign exchange management.

Provision of subsidy program includes Concessional Export Credit Financing and cash Compensatory Support. Cash compensatory scheme involve (i) Exemption from payment of taxes both on imports and exports (ii) Cash payment to cover high cost of transportation in

case of agricultural exports (iii) Freight subsidy in full on a uniform basis on all export consignments [30].

## 7. CONCLUSION

Bangladesh need to focus on resource-based industrialization and improve bilateral and regional cooperation to extend international market for diversifying trade. If an industry works for export under self-selection process, it can improve its productivity from learning by doing effect. To the extent firms' learning from exporting is a critical driving force in development. It should make significant change its trade and financial markets, investment laws and the regulatory framework to focus on the dynamic and growing domestic sector. Bangladesh's market should be more liberalized as a structural adjustment process to improve the doing the business ranking to attract the FDI. Policies related to infrastructure, human capital and institutions should be improved to increase exports and associated firm-level performance. Reform and restructure the institutions is needed in Bangladesh to remove the institutional barriers. Policy makers of Bangladesh should consider diversification related policy implementation as an emergency. For any circumstances such as changing buyers' taste, losing competitiveness, failing to compliance, importers' contracts shifting etc if Bangladesh lost its market of garments for any uncertainty in garments sector whole economy will devastate because of single sector concentration. Coronavirus has given a signal showing emergency of diversification. Due to COVID-19 pandemic already \$3.17 billion worth of RMG orders have been cancelled. Moreover, Bangladesh trading partners GDP is projected to drop about 3%, so people will cut their expense on non-essential items which might impact on Bangladesh export [32]. If crisis continues, Bangladesh's GDP and employment will affect greatly. To shield economy of Bangladesh, they should focus on diversification through implementing suggested framework.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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