



## Malaysia's Domestic Value Added Export: The Role of Governance and Strategic Policy Reforms

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### ABSTRACT

This paper evaluates Malaysia's value added export (VAE) in the light of its strategic policy reforms and governance. First, the study proposes a conceptual framework to show the role of governance and policy reforms in shaping a country in the path of VAE. Later, it undertakes an empirical analysis to evaluate the success of Malaysia's VAE with the help of WTO-OECD trade in value added database from 1996 through 2014. The empirical findings reveal a significant relationship between VAE and the governance indicators and the policy parameter proxies, indicating that the government plays a significant role in Malaysia's increased VAE.

**Keywords:** Value Added Export, Trade, Government Policies, Governance Indicators, Tariff, Trade in Value Added

**JEL Classifications:** F13, F15, F23, F43

### 1. INTRODUCTION

The content of the imported inputs in the export or the vertical specialization in trade was limited in the past (Hummels et al., 2001; Amiti and Konings, 2007; Ahn et al., 2011 etc.). But in recent years, inputs cross borders many times due to the increased participation of countries in the global supply chain (Goldberg et al., 2010; Koopman et al., 2014; Suder et al., 2015 etc.). These cross border inputs enhance firm's productivity (Amiti and Konings, 2007; Goldberg et al., 2010; and Gopinath and Neiman, 2013) and helps firms in upgrading and availing new technologies embodied in the imported inputs (Halpern et al., 2015; Bas and Strauss-Kahn, 2014). Thus the linking of countries via global supply chains has weakened the mercantilist views ("us" versus "them") of trade and has improved the vertical specialization (Yi, 2003; Bridgman, 2012) forms of trade.

The growing works in this direction have evolved the input output tables that enable researchers to trace the value added embodied in final goods back to its source. The value added export (VAE), as one component of the value added trade, measures the amount of domestic VAE embodied in the final expenditure in each destination (Johnson and Noguera, 2012; Suder et al. 2015 etc.).

Measured in this context, available databases<sup>1</sup> show that Malaysian exports in terms of value addition are not lagging behind when compared to the major developing and emerging economies of the world. With the changing global business environment and increasing competition in the international market, Malaysian firms are trying to adopt the international standard and increase their share in the global market. With this scenario, an open market access to goods and services and integration through the trade, capital and labour movement will expand the regional networks and domestic value addition.

There is no denying the fact that a stable and reliable trade and investment environment promoted through active government participation has upgraded many countries' positions in global trade (Sally, 2001; Dollar et. al., 2005; World Bank, 2011 etc.). Global competitiveness and the ability to export enhance the legislative and regulatory environment of a country. But what makes the trade in value added (TiVA) of a country increase, more specifically the VAE in this case? Of the several factors responsible for an increase in the VAE, the role of strategic policy

<sup>1</sup> Databases namely, Global Trade Analysis Project Database, World Input-Output Database, IDE-JETRO Asian Input-Output Tables, and WTO-OECD TiVA Database are the major sources available publicly for research on Value-Added exports of the origin country.

and the governance cannot be underestimated in the present order of world trade. They play a critical role in explaining performance across developing countries such as Malaysia.

While countries are moving ahead with several free trade agreements, today commodities cross borders many times before they reach the final consumer. Hence, an increase in domestically produced components in the total export cannot be automatic but rather requires a set of coherent and mutually reinforcing comprehensive trade and investment policies. This serves as a catalyst to development by providing access to production networks, markets, capital, knowledge and technology (OECD, 2013). In other words, the extent of domestic value addition in the export is more driven by the forms of policy measures and governance as there is slow progress in multilateral negotiations due to several institutional challenges (IMF, 2013). Stated differently, the government of a country could play a key role in providing an appropriate policy environment that would enable domestic firms to acquire most of the opportunities for an improved domestic value addition. In addition to this, a better and more efficient governance and institutional setup is instrumental for an effective integration of the domestic economy into world trade (Levchenko, 2007; UNCTAD, 2013; Nunn and Daniel, 2014; Lin and Fu, 2016).

Given the above, the present exercise focuses on the study of domestic value content in exports than on an absolute increase in the exports of Malaysia. With the changing approach of development and eradication of traditional boundaries and distance, it is imperative for us to evaluate the success of Malaysia in increasing the overall VAE than mere export growth. The reason for the superiority of VAE over gross exports is evaluating the bilateral export is well captured in many studies (see the detailed discussion in Johnson, 2014). In this context, the present exercise starts with the basic assumption that good governance and strategic policy reforms play an indispensable role in exports *vis-à-vis* the VAE. The improvement in governance and other aspects of policy measures have in fact enhanced the general economic ambience, industry condition, and firm's capability, strengthened the supply chain and extended many direct and indirect benefits to the producers and exporters. These improved policy measures and the norms of governance may strengthen the domestic economy, improve the value chain and transform the economy towards a more domestic value added component in the production process.

Therefore, the present attempt to study the domestic VAE from Malaysia is undertaken in hypothesizing the fact that the government strategic policy and the governance are the major factors in influencing the domestic composition in trade. Existing studies on the role of governance and government policy on trade and the value chain is a well-researched topic in economic literature. Many studies (*viz.* Acemoglu et al, 2002; Levchenko, 2007; Acemoglu and Robinson, 2010; Sheng and Yang, 2013; Sahu, 2014; Nunn and Daniel, 2014 etc.) have explored the impact of government and governance on several macroeconomic outcomes of a country. These studies explain the role of a sound institutional pattern, governance and policy reforms of the host

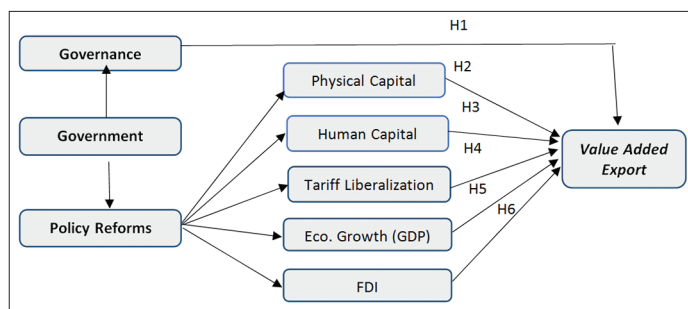
country in increasing its gross domestic product (GDP), export, FDI and so on. However, we have not come across any study in the relevant literature that empirically examines the role of governance and its policy measures in influencing the VAE. However, there are quite a good number of studies which explain the effect of VAE on several macroeconomic factors. Kee and Heiwai (2015) explain that the relative price of imported materials to domestic materials determines a firm's DVA ratio in export. Certain actions such as trade facilitation measures and tax policy lowering trade costs are crucial in promoting the value added in exports (Nakgyoon, 2016). Cruz et al. (2013) showed that industries that have a foreign content share of 50% or more account for 80% of the country's manufacturing exports. Xikang et al. (2012) study estimated how Chinese exports affected the country's total domestic value added and employment in the years 2002 and 2007. Much to the expectation, the study finds that exports and processing exports which highly depended on the imported inputs generated less DVA and employment for the Chinese economy compared to the output produced for domestic consumption. On the other hand, studies such as Banga (2015) have used some macro variables *viz.* GDP, population and tariffs in finding their influence on the VAE with the use of a theoretically justified gravity model. However, the present study, which conceptualizes a framework that theoretically establishes the link between governance and policy reforms with the VAE, is an addition to the existing literature. It explains that the improvement in governance and policy reforms strengthens several macroeconomic indicators of the country which in fact increases the VAE as is established in our conceptual framework.

Given the above, the present study is broadly organized as follows. The second section develops a conceptual framework and sets forth the hypotheses. The third section specifies the model based on the proposed conceptual framework. The fourth section assesses the findings and the last section summarizes the findings.

## 2. CONCEPTUAL FRAMEWORK AND HYPOTHESES

Governance is one of the most important features of the current development framework, including an effective and appropriate economic policy (Weller and Ulmar, 2008). The World Bank says that better governance effectively allows a government to formulate and implement sound policies. The markets and the economic activities and transactions cannot function well in its absence (Dixit, 2000). The improved governance and institutional framework is crucial in framing effective economic policies. In the light of this, the present study embraces a framework which considers that the governance and the strategic policy reforms play a principal role in increasing the VAE of a country. As the institutions affect their people and organisations as players (North, 1990), we consider the parameters of good governance and appropriate policy reforms critical in building up the physical and human capital of a country. Similarly, an effective government policy brings its people and firms closer to other nations through various trade and investment agreements and reduction of tariffs. And finally, implementation of business friendly policies helps in accelerating the economic growth and FDI of a country. A higher

FDI and GDP are expected to have more domestic value addition to the exports of a country. Considering all the above, our conceptual framework is as follows:



## 2.1. Governance, Export and VAE

The improved governance practices and institutional setups have brought dramatic transition to the economic performance of many countries. They have increased the access to the global value chain thereby transforming domestic composition into exports. A strong institutional framework and good governance along with the industry conditions and firm capabilities are reflected strongly in exports (Peng et al., 2008). Though there are few significant studies on the impact of governance on trade, its impact on investment and economic growth (Kaufmann and Aart, 2003; Mishra and Daly, 2007) is a well-researched topic. Stable and effective governance enhances the potential of firms and hence productivity. For example, corruption is likely to adversely affect trade and investment as it reduces public revenue, public investment and its productivity; it interferes with regulation to correct market failures, and acts as a tax on investment (Weller and Ulmar, 2008; Peerayuth and Shaun, 2011). Implementation of better governance through appropriate reform agenda, formal rules and institutional setup may help the economy in facilitating trade, investment and growth but this does not necessarily mean that it helps these in every economy. In support of this, Chang (2007) says there are countries with low governance scores that have performed better economically than countries with high governance scores.

Governance and institutions are most capable of handling the different aspects and activities related to trade (Goldberg, 2005). Most prominently, studies *viz.* Dixit (2011), Greif (2006), Pol and Hansberg (2009) have contributed significantly to the link between governance, institution and trade. Dixit (2011) uses game theory in modeling foreign trade and investment when property rights and contracts are not well-enforced by governments *vis-à-vis* the formal state institutions. Similarly, Wang and Wei (2010) say that competitive government policies in the form of tax favoured, high-tech zones have contributed most to the growing sophistication of China's exports. Similarly, using Chinese provincial-level panel data, Hasan et al. (2009) found a positive effect of governance on economic growth of the country. Lu and Liu (2009) finds evidence that a better institutional environment leads to an increase in the export propensity of the firms in context of the emerging economies.

Now the obvious question is how does governance help in VAE? First, the use of more domestic resources (*viz.* natural resources) would increase the share of domestic value addition in the

production and hence the exports. These resources need to be effectively managed by improving governance and the institutional framework (Conceição et al., 2011). Better governance would control the production, exploration, distribution and use of the natural resources in an efficient and effective manner. Better governance can increase the use of domestic resources in the production process with minimal effect on the environment and a country's resources. However, in the absence of good governance, the utilization of resources in the production process may not be optimal or it may utilize more imported inputs instead of domestic inputs. Second, the absence of good governance may lead to the so called "Dutch disease." This refers to some possibly unpleasant side-effects of a boom in primary commodity, which results in the outflow of capital from the non-primary sectors, huge inflow of capital to the primary activities, real appreciation in the currency, an increase in the price of non-traded goods, reduction in export of manufacturing and shift of labour and land out of non-export-commodity traded goods (Frankel, 2010). However, the presence of good governance avoids the so-called "Dutch disease" and increases the export and VAE of the manufacturing and other sectors. Third, good governance focuses on the value addition activities and diversification efforts, and facilitates the stakeholders in the industry to transform the primary commodities into refined products. Good governance helps in downstream upgrading activities, comprising investment in manufacturing industries and processing factories in line with the need for more exported value-added products, such as derivative oils rather than crude palm oil. Governance support in these lines clearly shows that good governance plays a constructive role in upgrading the domestic value addition activities. Thus, we hypothesize:

H<sub>1</sub>: Better governance leads to more VAE of Malaysia.

Promoting an effective business environment, developing adequate infrastructure along with strong human and physical capital have been a target of Malaysia since the launching of the economic plans. Careful designed development plans have made the country build strong physical capital over the years. Strategic developmental policies have increased the investment in physical infrastructure, primarily in transport and power systems. Development of physical capital moves a country from primary goods to more of manufacturing goods. This structural change is reflected in its exports and *vis-à-vis* in the VAE. Existing studies have established the fact that a better infrastructure is an effective pathway to improve export (Blyde and Iberti, 2014; Kellenberg, 2015 etc.). In this context, we undertake the below mentioned hypothesis and is tested using electricity consumption per capita (ELEC) as a proxy of infrastructure.

H<sub>2</sub>: A strong physical capital (*viz.* infrastructure) would lead to more VAE of Malaysia.

## 2.2. Government Policy and Human Capital

The improvement of human capital makes a significant difference to the economic development of many countries historically as well as contemporarily. Education, the most important factor of human capital, is critical to technological dynamism in both industry and agriculture. Historically, no country achieved successful economic development before 1914 without adult literacy rates above 50% (Adelman, 1999). And literacy was a foremost variable

discriminating among more and less successfully developing countries during the 19<sup>th</sup> century (Morris and Adelman, 1988). Higher literacy improved the skill which in fact helped Malaysia for impressive economic growth since the 1980s. Countries with more skilled labor force leads to more exports in manufacturing (Keesing, 1980; Welsch, 2006 etc.) and is empirically supported by many. The lack of a skilled labor force might affect the efficiency of manufacturing and thereby exports and domestic VAE. Skill as a proxy of human capital development is measured as the total number of skilled labour in the total labour force. Skilled labour is considered to be those who have attained the secondary and tertiary education level. The more developed a country is in terms of human and physical capital, the higher will be its manufacturing export *vis-à-vis* the value addition in manufacturing. Thus, we hypothesize.

H<sub>3</sub>: A strong human capital (*viz.* skill) would lead to more VAE of Malaysia.

### 2.3. Government policy, Trade and Tariff

There is no denying the fact that a country's policy affects the openness to trade and tariffs. One of the most important aspects in the VAE is the tariff component. Higher tariffs significantly increase the trade cost and threaten the domestic comparative advantage. Higher tariffs and other forms of trade restrictiveness negatively affect the VAE (IMF, 2013). The tariff reduction is one such prime factor in increasing the exports of the country, which comes from an effective government policy and governance. Realizing this, Malaysia continues to negotiate the applied MFN tariff with its free trade agreements (FTA) partners<sup>2</sup> and with several other countries. As per the World Bank wits database, the average applied MFN tariff of Malaysia is among the lowest in the ASEAN region. This varies across sectors, but in raw materials, and the agricultural and industrial sectors, Malaysia's tariffs are well below many of its ASEAN counterparts and FTA partners. The low tariffs of Malaysia could be credited to the government's policies and efforts in integrating with the rest of the world. In the present case, we take Average Applied MFN Tariff of Malaysia to the rest of the world. The effect of tariffs on the VAE is not straight forward. If the tariff reduction increases the import of inputs, the value addition of the host country may be reduced. But a reduction in tariffs increases the foreign technology and the investment (Baltagi et al., 2007; Cardamone and Scoppala, 2012; Yildiz, 2013; Sahu, 2015). An increase in technology and investment may be utilized to increase more domestic input in the production and hence more value addition *vis-à-vis* export. Thus, we hypothesize.

H<sub>4</sub>: Lowering the tariffs reduces the VAE of Malaysia

### 2.4. Government Policy Economic Growth and FDI

Lack of an effective government and good governance poses a major challenge to sustain economic growth (Roy, 2005)

2 As of 2015, in addition to the ASEAN economic community, Malaysia has six Free Trade Agreements (FTAs) into force (Japan, Pakistan, New Zealand, India and China) and some are under negotiations (with Turkey, EU, TPP, TPS-OIC and developing 8 countries TPA). As a member of ASEAN, Malaysia is also caught up in the bloc's regional FTAs dealing with China and Korea.

and reduces FDI inflows for a sample of transition economies (Hellman et al., 2002). Better governance plays a vital role in FDI and economic growth of a country (Globerman et al., 2004). Selective government policies, investment agreements and removal of restrictions attract FDI flows to developing countries (Banga, 2003; Cardamone and Scoppala, 2012). Similarly, studies show that effective government policies and good governance has positive impact on the economic growth and the FDI inflow of a country. But does the economic growth and FDI lead to more VAE of a country? The VAE of a country could be increased if the inflow of FDI transfers technology and increases the efficiency of the host country. In the process, an increase in domestic value addition would lead to more VAE with the support of efficient economic policies. Hence, we hypothesize that the GDP growth and FDI inflow has a positive impact on the VAE of a country.

H<sub>5</sub>: Higher GDP growth increases the VAE of Malaysia.

H<sub>6</sub>: Higher FDI inflow leads to more VAE of Malaysia.

## 3. MODEL SPECIFICATION

Considering our conceptual framework, the role of governance and the policy measures can be represented in a functional form as follow:

$$VAE = f(\text{governance and policy measures}) \quad (1)$$

$$VAE = f(\text{Governance, improvement in physical and human capital, GDP, FDI, Tariff}) \quad (2)$$

The variable "governance" is quantified from the World Bank governance indicators database. The World Bank Governance Indicators provides six dimensions of governance indicators<sup>3</sup>. This follows a normal distribution with scores lies between -2.5 and 2.5, showing higher values corresponding to better governance. In context of Malaysia, the governance database gives a relatively accurate representation as the database shows a low standard error and is based on more number of data sources on which the estimate is based.

Representing the functional form (equation-2) into an estimable equation:

$$VAE_t = \alpha_1 + \beta_1 Z_t + u_t \quad (3)$$

Where,  $Z_t$  is the set of explanatory variables and  $u_t$  is the error term. In other words, the estimable equation can be represented as follows:

$$VAE_t = \alpha_1 + \beta_1 Skill_t + \beta_2 GDP_t + \beta_3 FDI_{t-1} + \beta_4 Tariff_t + \beta_5 Elect_t + \beta_6 Govern_t + u_t \quad (4)$$

The derivation of these variables and its economic significance in present context is explained briefly below:

3 These six indicators of governance are (i) Voice and accountability, (ii) political stability and absence of violence, (iii) control of corruption, (iv) government effectiveness, (v) regulatory quality, and (vi) Rule of law.

Skill = The variable “skill” is a proxy of human capital. Holding other factors constant, it is expected that a higher skill would add more to the value added productivity thereby more VAE.

GDP = Is the GDP of Malaysia. Higher domestic production reflects higher domestic value added activities.

$FDI_{t-1}$  = The “FDI” is the inward FDI into the country. The VAE in year “t” is likely to be affected not by the FDI in the current year but by the FDI inflow of the last year. Hence, the FDI lag is included in the analysis and is taken from UNCTAD FDI statistics.

Tariff = Average Applied MFN Tariff of Malaysia to the rest of the world. This is taken from World Bank wits-database.

Elect = Electricity consumption per capita (ELEC) is taken as a proxy of infrastructure availability (physical capital) and is taken from the World Development Indicators.

Govern = Data on governance indicators is taken from the World Bank and is available since 1996. This restricted us to undertake the empirical analysis starting from 1996. The aggregate governance quality of Malaysia is found in using principal component analysis (PCA).

### 3.1. PCA

PCA is used to calculate the aggregate governance by including all the governance indicators scores of Malaysia simultaneously. Here, principal component is used to obtain a set of new variables that contain maximum amount of variation in the underlying sets of governance indicators. The singular value of each governance indicators data matrix is calculated through the First principal components (FPC). After calculating the weight of each variable in the FPC, the next step calculates the governance from each governance indicators. The FPC for each year gives a composite value what we term as the “governance efficiency” of Malaysia. The equation-4 is run by putting the value of aggregate governance efficiency.

### 3.2. Stationarity of Variables

Time series properties (unit root test) of all concerned variables in the models have been identified to test the stationarity of the dataset. We use the most widely used Augmented Dickey-Fuller (Dickey and Fuller, 1981) tests by adding the lagged variable to the dependent variable. The estimated stationarity results shows that the variables *viz.* FDI inflow (10% level), skill (5% level) are found stationary at levels. Other variables *viz.*, electricity consumption (1% level), export (1% level), GDP (1% level), governance (1% level), MFN tariff (1% level), VAE (1% level), are found stationary at first differences. It means, the past results cannot be used to predict future results of the variables which are not stationary at levels. In other words, non-stationary at levels shows that the mean and the variance do not remain constant over time. Hence, we used the variables in our regression analysis after first differentiating those which are not stationary at levels.

## 4. FINDINGS AND ANALYSIS

The WTO-OECD TiVA database provides data for the year 1995, 2000, 2005 and 2008-2011. The growth rate of VAE between two distinct periods is applied to arrive at the continuous series of VAE for the period 1995-2011. The data after 2011 until the year 2014 is extrapolated based on the 1995-2011 VAE data of Malaysia. Hence, our present empirical analysis is based on 19 years dataset covering the period 1996-2014. Our estimation is based on the equation-4 attempts to find the role of government policies and the governance in influencing Malaysia's VAE and is reported in Table 1.

After checking the stationarity (unit root test) for the concerned variables and running the regression, majority of the explanatory variables shows the expected sign except the per-capita electricity consumption. In both the time period, the co-efficient of explanatory variables *viz.* GDP, skill, FDI inflow and governance efficiency are found to be positive indicating that these variables have a positive impact on the growth of VAE. However, only three variables *viz.* GDP, skill and governance efficiency shows significant result. The effect of change in skill on VAE is found higher than that of GDP, indicating a unit increase in labour skills will add more to the VAE than a unit increase in GDP of Malaysia.

Findings shows that, the positive and significance coefficient of variables “Skill” indicates that, higher the skill greater is the VAE. In other words, the magnitude of the coefficient says that a unit change in the skill results in 1.79 unit change in the VAE of Malaysia. Similarly, a unit change in the GDP would result in 0.42 unit change in the VAE. The most significant finding of our study shows that the effect of governance efficiency is found to be positive and significant for the VAE. In other words, increase in the governance parameters is associated with the increase in the VAE of Malaysia. The other two explanatory variables *viz.* the tariff and the per capita electricity consumption are found to be negatively influencing the VAE of Malaysia. The sign of import tariff is as per the expectations, however, its influence could not be proved statistically with the insignificant results. Similarly, though the per capita electricity consumption shows a negative result but the insignificant results do not prove that the VAE is negatively influenced by the increase in the infrastructure. Hence, based on

**Table 1: Estimated results: Total value added export**

| Explanatory variables        | Dependent variable: VAE<br>1996-2014 |
|------------------------------|--------------------------------------|
| TARIFF                       | -0.161 (-0.637)                      |
| Skill                        | 1.789*** (3.719)                     |
| Governance efficiency        | 0.121** (2.020)                      |
| Electricity consumption      | -0.317 (-0.847)                      |
| FDI flow                     | 0.042 (1.234)                        |
| GDP                          | 0.424*** (3.667)                     |
| Constant                     | -19.922 (-3.422)                     |
| R <sup>2</sup>               | 0.8813                               |
| Adjusted R <sup>2</sup>      | 0.8653                               |
| Number of observation        | 14                                   |
| Standard error of regression | 0.0606                               |

Source: Estimation based on equation-3. Figure in parentheses shows the t-statistics. \*\*\* and \*\* shows the significance level at 1% and 5% level respectively. GDP: Gross domestic product, VAE: Value added export

the findings we accept three underlined hypotheses (hypothesis 1, 3 and 5) and reject the other three.

## 5. CONCLUDING REMARKS

Malaysia's total trade and the VAE post a good growth for a sustained long period on the back of an increasing swell in both the domestic and the foreign investment over the years. Better governance and policy reforms have promoted higher VAE of Malaysia even though the progress is relatively slow compared to some large emerging economies. These policy reforms not only helped Malaysian firms to increase the volume of trade but also increased the global participation of Malaysian firms, as evident from OECD TiVA database. Much to our expectations, the empirical estimation supports the fact that the governance and its strategic policies played an important role in increasing Malaysia's total DVA export. Though the long run development strategy is the key objective of Malaysia's policy reforms but the overall gain in trade, employment, income etc. should be looked carefully while promoting the VAE.

To conclude, the government should emphasize on the policies keeping the broader development framework in mind. In order to increase more DVA export, it require more targeted policies and development strategies, focusing more on fine sliced activities in the production process. Moreover, the policy dimension should be friendly towards the local firms, particularly the SMEs with strong environmental, social and governance framework. Given the present downturn of many developed countries, any cautious and strategic approach would help more to Malaysia in consolidating the domestic production and higher value addition activities, much required for its targeted growth and vision 2020.

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