Measuring Global Production of Goods and Services using Trade in Value Added (TiVA): Basic Trade Indicator Approach

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INTRODUCTION

In the era of global economy, the production of one good requires inputs from several countries. Hence, the existing concept of trade statistics in recording the full value of the goods each time it crosses borders is becoming increasingly less reliable to measure the value contributed by each economy since it embodies the domestic and foreign value added in the country's exports.

Therefore, the importance of new method known as TiVA has rose significantly. There are various analyses to explore TiVA namely Basic trade indicators, Multiplier decomposition, Value added decomposition of gross exports, Revealed comparative advantage and Global Value Chains (GVC). This paper aims to focus on Malaysia's Basic Trade Indicators with its eight major trading partners.

LITERATURE REVIEW

The Apple's products which are designed in the US are assembled in China, using vast array of resources across the globe for instance from Germany, Japan and South Korea (Apple, 2021). The complex interchange of flow in goods required to assemble the Apple products led to the importance of TiVA which captures each value that is added along the production process.

OBJECTIVES

- To measure the importance of international transactions relative to domestic transactions.
- To identify imports content embedded in a country's production or in other words, import dependence.
- To illustrates the exports orientation of a particular product.

METHODOLOGY

- Data from Multi Regional Input-Output (MRIO) obtained from Asian Development Bank (ADB) for reference year 2015 – 2019.
- MRIO data is classified into 35 sectors. For this study, data are aggregated into five main sectors such as Agriculture, Mining & Quarrying, Manufacturing, Construction and Services.
- Data in USD Million dollars
- Basic Trade Indicators can be analysed into three:

TRADE TO GDP RATIO

$$TGR = \frac{Exports + Imports}{GDP}$$

IMPORTED INPUT TO OUTPUT RATIO

$$IIOR = \frac{Sum\ of\ Imported\ Immediate\ Use}{Total\ Output}$$

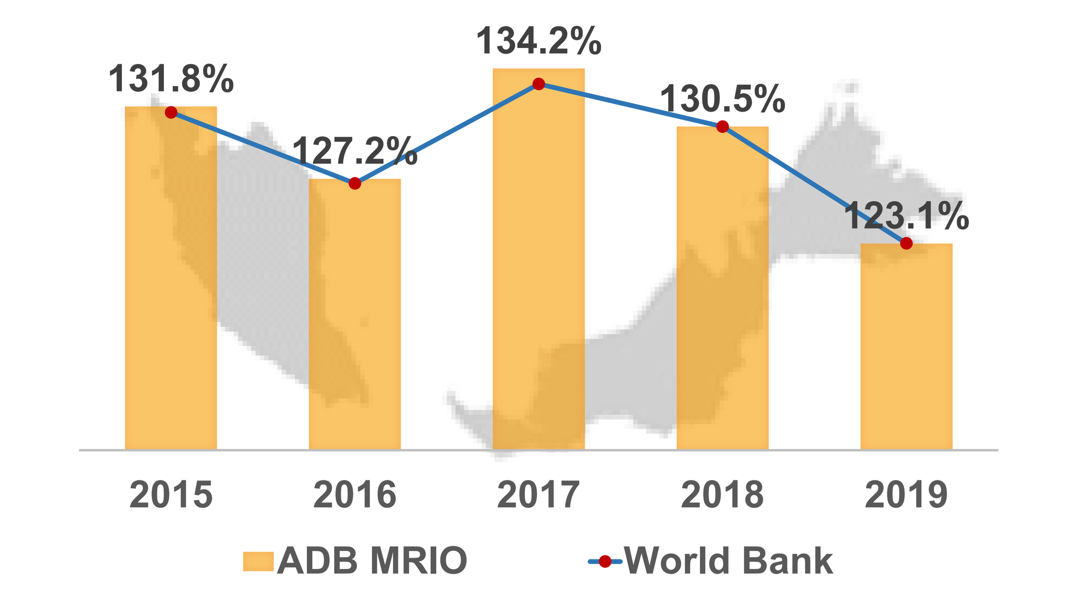
EXPORTED OUTPUT TO OUTPUT RATIO

$$EOOR = \frac{\begin{matrix} Sum\ of\ Exports \\ (Intermediate\ Use + Final\ Demand)\end{matrix}}{Total\ Output}$$

FINDINGS AND DISCUSSION

Trade to GDP Ratio

Exhibit 1. Malaysia's Trade to GDP ratio, 2015-2019

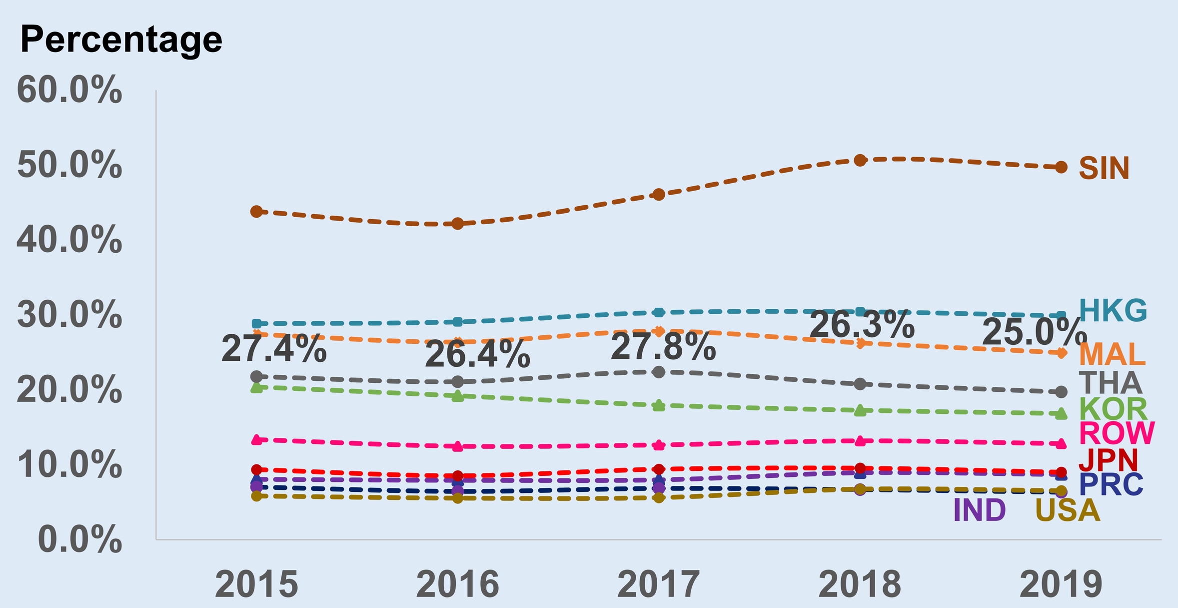


- Foreign trade represented 131.8% to 123.1% of the country's GDP in period 2015-2019. Malaysia trade to GDP ratio starting in 2018 was 130.5%, a 2.7% decline from 2017 and 2019 was 123.1%, a 7.4% decline from 2018 .
- This reflects the openness of Malaysia's economy since a ratio of trade to GDP above 100.0% indicated an open economy.

Imported Input to Output Ratio

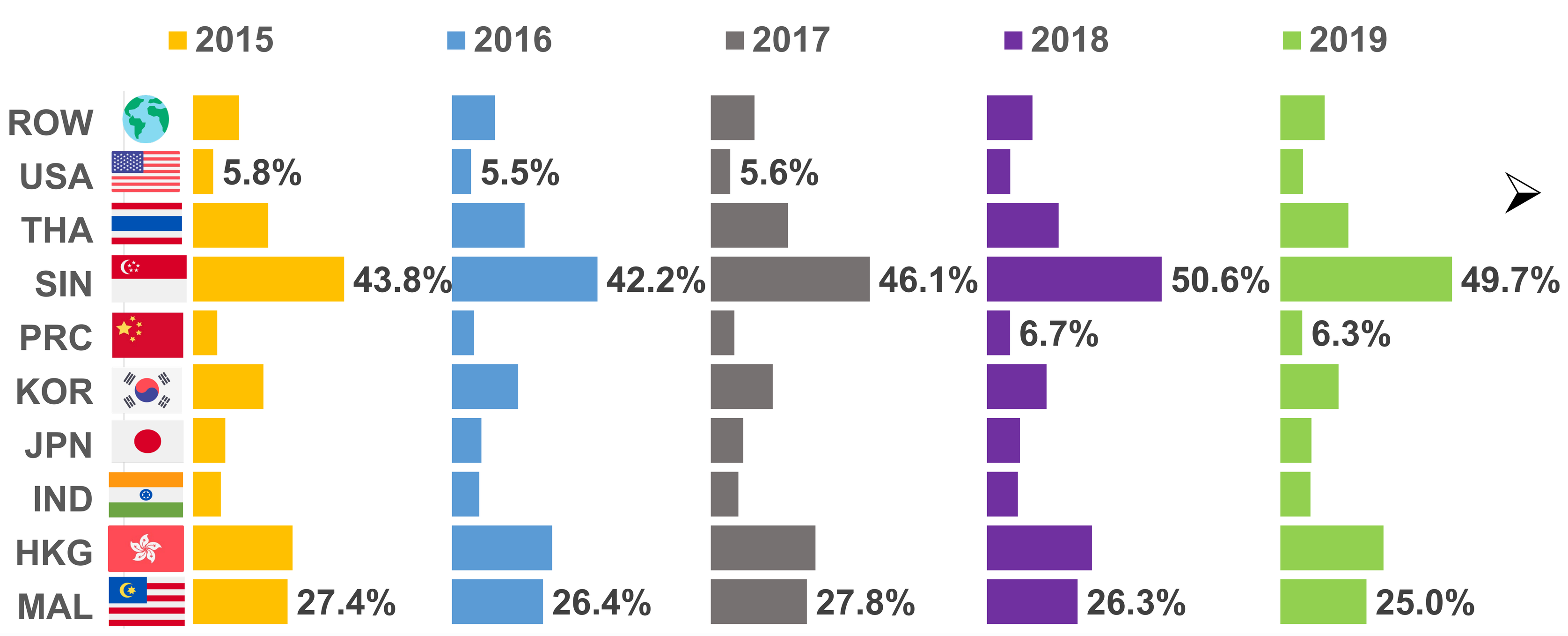
- Malaysia's share of imported inputs declined in 2019 to 14.4% compared to the previous year (2018: 15.4%).
- This reflected that the requirement for imports content has decreased over the corresponding period. Thus, the dependence on domestic content in the economy remained high.

Exhibit 2. Imported Input to Output Ratio, 2015-2019



Exported Output to Output Ratio

Exhibit 3. Exported Output to Output Ratio, 2015-2019



- Malaysia's exported output to output ratio declined to 25.0% in 2019 from 26.3% in 2018.
- This implied that the exports orientation of Malaysia's goods and services decreased over time, which in turn reflects relatively high domestic consumption.

CONCLUSION

- In 2019, Malaysia's trade to GDP ratio indicated that Malaysia is still reliant on input from abroad in producing its output.
- Nevertheless, the import content in the production marked below 20.0 per cent over the five years period. Moreover, Malaysia's domestic consumption remained over 70.0 per cent between 2015 and 2019.
- In further improving the research, several analyses on spillover effects as well as dependency between sectors and trading partners are recommended to be explored using Value added decomposition of gross exports, Revealed comparative advantage and Global value chain.

References

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- OECD (2011), "Trade openness", in OECD Science, Technology and Industry Scoreboard 2011, OECD Publishing, Paris.