

Export competitiveness of Indonesia to ASEAN market for three leading commodities

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Abstract. Fair trading and market access are needed for sustainable development, and export competitiveness is one of the implementations of this goal. Indonesia has three leading export commodities in the world market, namely mineral fuels, animal/vegetable fats and oils, iron and steel. This study aims to determine the sustainability of Indonesia's competitive position in four ASEAN countries (Malaysia, the Philippines, Thailand, and Singapore), based on Revealed Comparative Advantage (RCA), and to examine the factors that influence it. The results of this study indicate that Indonesia's three leading commodities had sustainable competitiveness in the ASEAN market. Indonesia's mineral fuel commodities have strong competitiveness based on RCA values > 1 , and animal /vegetable fats & oils have strong competitiveness except with Thailand in 2004-2011. Meanwhile, iron & steel commodities, which were initially weakly competitive, then had strong competitiveness along with increasing demand. The factors that determine export competitiveness have different responses for each commodity, where economic distance affects the competitiveness of all commodities, the exchange rate has a strong influence on mineral fuel commodities and animal or vegetable fats & oils, and the local currency affects the competitiveness of iron and steel exports.

1 Introduction

Each country has differences in the availability of resources, and this has an impact on the differences in the commodities produced. These differences trigger gaps in meeting human needs and make each country compete to obtain the commodities needed to gain profit, one of which is by working together through international trade. Cooperation to achieve this goal also supports the achievement of the 17th Sustainable Development Goals (SDGs). Studies related to the importance of global trade have attracted the attention of researchers. Several studies have shown that each country needs each other to cooperate [1-3]. Global trade is the answer to existing problems. By establishing international trade, countries with interests can gain greater profits compared to the risks they face. According to Xu et al.,

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international trade will have a positive impact on each country in opening up, global progress, and achieving more sustainable development [4].

According to Cavusoglu, every nation has a certain time and privileges based on the types of goods it owns, therefore, each country will demand and supply a product, creating potential cooperation with exports and imports [5]. If a country is superior in the production of a commodity, then exports can be taken into consideration gaining market share. Furthermore, if a country has higher levels of income generated and domestic needs are not met, then imports can be taken into consideration to achieve domestic demand [6].

Indonesia carries out international trade by utilizing exports as a form of driving the economy. In general, there are two categories of Indonesian exports, namely exports related to oil and gas and those not related to oil and gas, which include the mining, manufacturing, and agricultural industries. According to the Ministry of Trade of Indonesia, Indonesia has the potential to export in the oil and gas and non-oil and gas sectors [7]. Table 1 shows the development of Indonesia's export volume based on the oil and gas and non-oil and gas sectors:

Table 1. Indonesian Exports Based on Oil-Gas and Non-Oil-Gas Sectors

Years	Oil-gas (million, tons)	Non-oil-gas (thousand, tons)
2020	27,497.9	552,180.3
2021	26,890.2	594,777.6
2022	24,242.5	622,431.4

Source: Indonesian Central Statistics Agency (2023)

Based on Table 1, exports of the oil and gas sector tend to decline compared to the non-oil and gas sector which continues to increase. Based on this, Indonesia should be able to focus on the non-oil and gas sector so that export activities can reflect trade productivity [8]. Furthermore, according to data from the Ministry of Trade of Indonesia, Indonesia has commodities that contribute greatly to the development of non-oil and gas exports, namely mineral fuels, animal/vegetable fats and oils, iron and steel, with successive contributions in 2022 being 19.93%, 12.74%, and 10.08% [9].

The large contribution domestically cannot yet reflect the large contribution globally. However, based on UN Comtrade data, Indonesia's mineral fuel contribution to the world is still low (1.71%), as well as iron and steel (4.78%), while animal or vegetable fats and oils contribute quite significantly (19.54%). However, in several destination countries, exports of the three leading commodities are continuing, although not in accordance with expectations to dominate the international market. For this reason, efforts are needed from various parties so that these commodities are accepted and competitive in the international market. Because, export competitiveness describes the ability to access markets in international trade, and is one of the keys to achieving sustainable development.

Countries in the world have implemented the right strategies to increase competitiveness. According to Egger & Erhardt, a systematically structured international cooperation policy strategy can be used to reduce trade costs and potential market competition [10]. Several countries have entered into trade agreements, for example, the United States, Canada and Mexico have agreed to the North American Free Trade Agreement /NAFTA policy [11]. Furthermore, based on a study by Apiko et al., there are 55 countries in the African Union, which has agreed with the African Continental Free Trade Area (AFCFTA) policy [12]. Indonesia is also involved in utilizing cooperation, one of which is cooperation with ASEAN member countries, such as the ASEAN Free Trade Area (AFTA) policy [13].

Indonesia's cooperation with ASEAN countries based on the area will benefit members, related to demographic distance, and perhaps also economic distance. According to Mehl et al., economic distance has an inverse effect on a country's exports, meaning that if the

economic distance is low, exports will increase [14]. Based on research by Jagdambe & Kannan, greater distance automatically causes higher transportation costs [15].

In addition, the exchange rate factor also affects the value and volume of exports, as well as transaction costs. The exchange rate is considered a tool to increase export volume and reduce imports [16, 17], although in some countries the exchange rate does not influence exports [18], but Kamalyan explained that the exchange rate has a positive effect on Indonesia's oil exports [19].

Furthermore, the policy of using local currency in international trade is thought to be able to facilitate transaction activities. Indonesia has carried out this cooperation agreement between ASEAN countries since 2018, with Thailand and Malaysia as the first cooperation partners [20].

Based on the previous description, this study aims to examine whether Indonesia can compete in the ASEAN market for its three leading commodities and to examine whether economic distance, exchange rates, and the use of local currencies affect Indonesia's competitiveness in the ASEAN market. The sustainability of development through trade cooperation with ASEAN countries will be seen from the results of this study. This study will fill the gaps in previous studies, by measuring the competitiveness of Indonesia's three leading commodities and considering the use of local currencies that affect competitiveness, because the use of local currencies in these payment transactions in the past was rarely done.

2 Literature Review

Krugman states that international trade is a type of media that can increase a country's production capacity while still paying attention to the external environment and will have the opposite impact if each country takes into account its strengths and weaknesses [21]. According to Salvatore, international trade is the sale of various goods and services across customs borders, including export and import activities that can generate foreign exchange and meet the financing needs of various domestic sectors [22].

The theory used as a reference in this study is the theory of comparative advantage put forward by David Ricardo in 1817. According to the theory of comparative advantage, there is a basis for trade that benefits both parties even though a country produces two types of goods with a lower level of efficiency than other countries. If a country concentrates and exports goods that have a relative advantage, then that country can still gain profits from trade with that specialization [23].

According to Bhangu & Kaur, good regional competitiveness will reflect potential and profitable trade [24]. In economics, competitiveness refers to the idea of market competition on the success of trade competition in international exports. According to the RCA index theory by Balassa & Noland [25], each country can evaluate the export performance of each industry within a country and show how this relative share changes over time by looking at the country's relative involvement in global commodity exports. So a relative measure called Revealed Comparative Advantage (RCA) displays the relative concentration in one or more particular commodities/sectors. RCA is used to calculate the comparative advantage of a region. To find out the comparative advantage, you can look at the RCA value. If the RCA value > 1 means the commodity is competitive, and vice versa, if the RCA value < 1 means the commodity has weak competitiveness [26].

Calculation of competitiveness using the RCA formula according to Balassa & Noland (1989) [27]:

$$RCA_{ijt} = (X_{ij} / X_j) / (X_{iw} / X_w) \quad (1)$$

Equation 1 explains that RCA_{ijt} is the level of competitiveness of certain Indonesian commodities in the destination country; X_{ij} is the export value of certain Indonesian commodities to destination countries; X_j is the total value of Indonesia's exports to the destination country; X_{iw} is the value of world exports of certain commodities to the destination country, and X_w is the total value of world exports to the destination country.

Distance and borders are barriers to international trade. Analysis using the gravity model shows that there is a strong negative effect between distance and international trade. Common estimates suggest that a 1 per cent increase in distance between two countries is associated with a 0.7 to 1 per cent decrease in trade between the two countries. This decrease partly reflects the increased costs of transporting goods and services [21].

The calculation of economic distance uses the formula from Le (2017) to be as follows [28]:

$$EcD_{ij} = Dist_{ij} \times (GDP_{ijf} / GDP_{ijo}) \quad (2)$$

EcD_{ij} is the economic distance from the origin country to the destination country in year j ; Dis_{ij} is the actual distance from the origin country to each of the four destinations of ASEAN countries; GDP_{ijf} is the GDP of a certain of the destination country; GDP_{ijo} is the GDP of origin countries.

The exchange rate also influences competitiveness. According to Salvatore [22], foreign currency is used to show a list of prices or currency values in a country expressed in another country's currency. The value of a country's currency will of course vary over time. As exchange rate volatility increases, the real option value of exporting to world markets increases, which, if volatility is higher, will increase the potential gains from trade [29]. According to Dahlquist & Pénasse, the real exchange rate can be interpreted as a relative price of goods in two countries [30]. This shows the price level of goods in one country compared to other countries so that international trade can be realized.

The local currency also influences competitiveness. Uncertainty in the value of the dollar encourages the use of local currency in settling international transactions. The local currency in trading activities has been used starting in 2018, Indonesia together with Malaysia and Thailand. Furthermore, in November 2022 Indonesia together with the Philippines, Thailand, Singapore, and Malaysia signed a Memorandum of Understanding Advancing Regional Digital Payment Connectivity, as a step to expand the Local currency Settlement (LCS) becomes Local currency Transaction (LCT).

3 Methods

This research uses descriptive quantitative methods to analyze the level of export competitiveness of Indonesia's leading commodities, consisting of mineral fuels, animal/vegetable fats & oils, and iron & steel. Panel data used is in the 2003-2022 time period. The population consists of ASEAN's 5 countries (Indonesia, Malaysia, Philippines, Thailand, and Singapore). Next, competitiveness data will be used as the dependent variable (Y) and the variables economic distance (X1), the exchange rate (X2), and the local currency (X3) as independent variables. The data used comes from UN Comtrade, World Bank, and timeandate. Competitiveness is measured by the Revealed Comparative Advantage (RCA) index with the most potential commodities, economic distance is measured by the ratio of geographic distance to GDP of the destination country, the real exchange rate is measured by the nominal exchange rate multiplied by the comparison of the consumer price index of the destination country and the exporting country, the local currency is a dummy variable with the symbol "0" before implementation and "1" after implementation.

The analysis uses descriptive analysis and panel data regression equation models. The use of panel data regression equation models follows certain procedures, namely starting with selecting the model to be used, using the Chow-test, Hausman-test, and Lagrange Multiplier, to choose the best model, whether it is the best model. Common Effect Model (CEM), Fixed Effect Model (FEM), or Random Effect Model (REM), then detect whether there is multicollinearity and heteroscedasticity in the model, and carry out a normality test. If all the conditions have been met, then carry out hypothesis testing on equation (1) which has been converted into a multiple linear regression equation.

Based on the Balassa & Noland [27], Le [28], and a Memorandum of Understanding Advancing Regional Digital Payment Connectivity models, the panel data regression model used in this study is as follows:

$$RCA_{it} = \alpha - \beta_{1it} * DIST_{it} + \beta_{2it} * REER_{it} + \beta_{3it} * DLC_{it} + \epsilon_{it} \quad (3)$$

Equation (3) explains that RCA_{it} is the competitiveness of Indonesian commodities to the other four ASEAN countries; α is constant; β_1, β_2 . And B_3 are coefficient; $DIST_{it}$ is economic distances; $REER_{it}$ is real exchange rate; DLC_{it} is dummy to local currency; ϵ_{it} is errors; i are countries, and t is time.

4 Result and Discussion

4.1 Analysis of competitiveness.

In economics, the competitiveness of the Revealed Comparative Advantage (RCA) Index refers to the idea of market competition on the success of export trade. Based on the calculation results and Fig. 1, it is concluded that Indonesia has a comparative advantage for mineral fuel commodities among ASEAN 5 countries. This is shown by the RCA calculation result value always being above one. The most potential export destination country with the highest average in the observation year from 2003-2022 is Thailand with a value of 30.12, next is the Philippines with a value of 16.89, Malaysia with a value of 14.59, and in last place in Singapore with a value of 13.22.

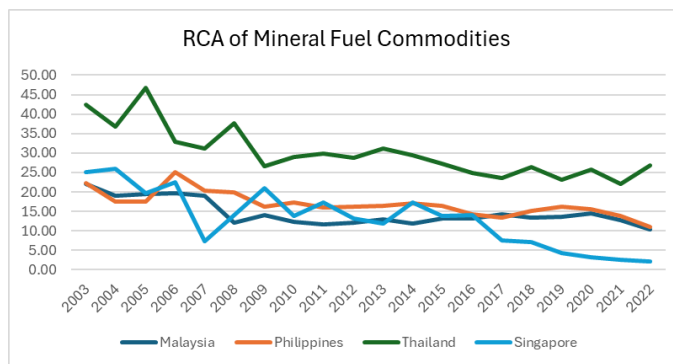


Fig. 1. Competitiveness of Mineral Fuel Commodities

Based on the calculation results and Fig. 2, it can be concluded that Indonesia has a comparative advantage for animal/vegetable fat and oil commodities. This is indicated by the large RCA value which is always greater than one in Malaysia, the Philippines, and Singapore. In contrast, Thailand in 2004-2011 (except 2009) was at a weak level of

competitiveness indicated by an RCA value below one. The potential country with the highest average is Malaysia, followed by Singapore, Thailand, and the Philippines.

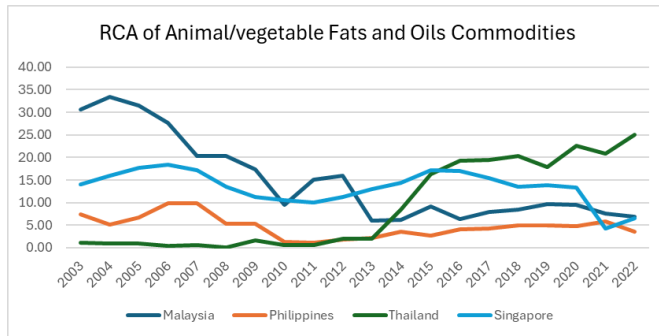


Fig. 2. Competitiveness of Animal/Vegetable Fats and Oil Commodities

Based on the calculation results and Fig. 3, it can be concluded that initially iron and steel commodity exports were not competitive in ASEAN countries, but along with demand and supply, they succeeded in making these commodities competitive. The average RCA value in the year of observation is more than one. The countries with the most potential with the highest to lowest averages are Malaysia, Singapore, the Philippines, and Thailand.

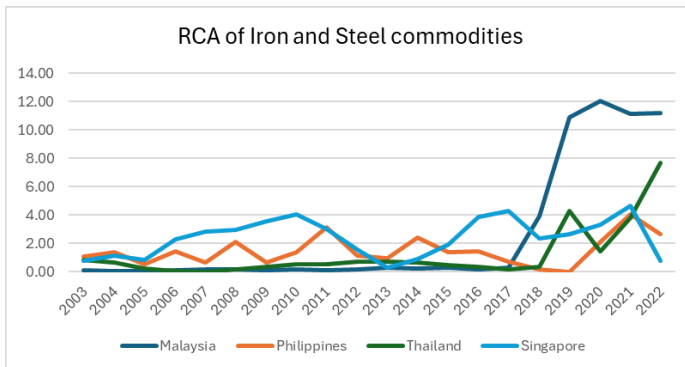


Fig. 3. Competitiveness of Animal/Vegetable Fats and Oil Commodities

4.2 Analysis of factors affecting competitiveness

This section discusses the results of hypothesis testing on the influence of economic distance, exchange rates, and the use of local currency on the competitiveness of Indonesian exports to ASEAN countries for three leading commodities. Previously, analysis requirements tests, selection of the best model, and hypothesis tests had been carried out. Based on the normality test in the analysis requirements test, all data for the three commodities have met the requirements, as well as for the classical symptom test. The best model for iron & steel commodities is the Common Effect Model (CEM), and the best model for mineral fuel commodities and animal/vegetable commodity fats & oils is the Fixed Effect Model (FEM). Furthermore, the results of the hypothesis test can be seen in Table 2. Table 2 shows that each commodity has a partially different response regarding the independent variable which influences the dependent variable. Mineral fuel commodities and animal/vegetable oil fats have a probability value of less than 0.05, only significant for the economic distance and exchange rate variables. Iron and steel commodities have a

probability value of less than 0.05, which is only significant for the economic distance and local currency variables. Furthermore, it can be seen simultaneously that the F probability value is less than 0.05, which shows that the variables of economic distance, exchange rate, and local currency have a joint influence on the export competitiveness of Indonesia's three leading commodities to ASEAN.

Table 2. Summary of Hypothesis Test

Sample	Dependent Var.	Independent Var.	Coeff.	Prob. t-stat.	Prob. F-stat.	Adj-R squared
(1) Mineral fuel commodities	Y	Ec Dist	-0.2406	0.0000***)	0.0000	0.7993
		Ex-rate	0.3503	0.0000***)		
		Loc-Curr	0.7449	0.6250		
(2) Animal/vegetable fat and oil commodities	Y	Ec Dist	-0.1382	0.0247***)	0.0000	0.3639
		Ex-rate	1.1164	0.0001***)		
		Loc-Curr	0.6238	0.8047		
Iron and steel commodities	Y	Ec Dist	-0.0195	0.0119***)	0.0000	0.4275
		Ex-rate	0.0001	0.0605**)		
		Loc-Curr	5.41034	0.0000***)		

Source: The authors

Note: Note: ***) sig. 5%; **) sig. 10%

4.2.1 *The effect of economic distance on export competitiveness.*

The close distance between one country and another is very determined in the process of exchanging a commodity. The geographic distance of a region does not change, triggering the development of geographic distance into economic distance using GDP as the calculation. Based on the results of hypothesis testing, the economic distance variable has a negative and significant influence on the export competitiveness of Indonesia's three leading commodities to ASEAN. This can be interpreted to mean that as economic distance increases, the competitiveness of Indonesia's superior commodity exports with ASEAN 5 countries will decrease.

The results of this research are in accordance with research conducted by Masood et al. that economic distance has a negative and significant influence on exports in the case of Pakistan and its partners. If a country is far away, it will reduce the potential for trade, and vice versa, if a country is close, it will increase the potential for trade [31]. In line with this, Nikensari et al. stated that economic distance (measured by the ratio of GDP per capita of the two countries of origin and destination, as well as geographical distance) has a negative influence on the increase in exports of ASEAN-5 countries to the European Union, The lower the economic distance, the more competitive trade from origin countries to destination countries [32]. This shows that there are obstacles that occur in the form of shipping costs when the distance between the capitals of the two countries carrying out transactions becomes greater. According to Jagdambe & Kannan [15], distance is a trading cost that reduces trading.

4.2.2 *The Effect of Exchange Rates on Export Competitiveness*

Based on the results of hypothesis testing, the exchange rate variable has a positive and significant influence on the competitiveness of exports of mineral fuels, fats and animal/vegetable oils. The results of this research are in accordance with research conducted by Abbas et al., namely that the real exchange rate has a positive effect on

China's exports to the United States [33]. The increase in the exchange rate will cause an increase in commodity competitiveness. Hong Nguyen et al. also stated that trade between the United States and Vietnam has the same result, namely when the real exchange rate with Vietnam increases, the exporting country, in this case the United States, will experience an increase in exports. [34].

Furthermore, iron and steel commodities have different impacts. The real exchange rate does not have a significant effect on the competitiveness of iron and steel commodity exports. This is in line with the findings of Urgessa that the rise and fall of the real exchange rate in developing countries does not have a strong impact on economic stability in that country. Iron and steel is a category of manufacturing industry [35]. Based on research by Rasbin et al., the real exchange rate did not have a significant influence on Indonesia's manufacturing exports in 1990-2015 [36]. This is based on the fact that the demand for iron and steel is not affected by the exchange rate. On the other hand, during Covid-19, demand for iron and steel was also not affected by the economic shock during Covid-19. According to UN Comtrade data, Indonesia's iron and steel exports show an increasing value, at the start of 2019 the export value was \$7,387,411,616, experiencing an increase in 2020 with an export value of \$10,861,567,212. In 2021 there will also be an increase with an export value of \$ 20,949,788,593, even though according to findings Chetty et al., the economy in the United States during COVID-19 experienced a shock to a decline in economic activity [37].

4.2.3 The Influence of Local Currency on Export Competitiveness

Based on the results of hypothesis testing, the local currency has a positive and significant influence only on the competitiveness of Indonesian iron and steel commodity exports, namely making Indonesia's competitiveness 5% greater than before the implementation of the agreement. This result is in line with research conducted by Boz et al., that the implementation of the Local Currency Settlement (LCS) agreement has increased transactions carried out by Indonesia with partner countries, namely Thailand and Malaysia [38]. The implementation of local currency can provide benefits in the form of financing efficiency in export and import transactions between domestic actors and trading partners, by buying the currency of the partner country without buying dollars. However, in the trade of mineral fuel commodities, and animal/vegetable fats and oils, the local currency does not have a significant influence on export competitiveness. This is likely due to the challenges in the mechanism for implementing the local currency itself, where business actors do not fully understand the LCS policy, so that in completing export-import transactions some still use dollars.

5 Conclusion

Based on the discussion above, it can be concluded that Indonesia's three leading commodities are competitive in the ASEAN market, with an average RCA value > 1 . However, with Thailand in certain years, Indonesian commodities have not been competitive for animal/vegetable fats and oils. Iron and steel commodities have begun to show competitiveness in recent years. These results indicate that sustainable development in Indonesia through international trade partnerships (17th SDGs) with ASEAN countries has been achieved.

Economic distance has a negative and significant effect on Indonesia's export competitiveness to ASEAN for the three leading commodities. The exchange rate has a positive and significant effect on export competitiveness for mineral fuel commodities, and animal/vegetable fats & oils. The use of local currency has a positive and strong impact on

Indonesia's export competitiveness only for iron and steel commodities. Specifically for iron and steel commodities which have begun to show strong competitiveness in recent years, the government needs to strengthen its strategy by utilizing local currency policies for payment transactions. Socialization of the use of local currency is not limited to iron and steel commodities alone, but also to the two leading commodities, as well as other export commodities.

Acknowledgments

This research was carried out in collaboration between two institutions, namely Jakarta State University and Universiti Malaysia Sabah.

Disclosure of Interests

The authors have no competing interests to declare as relevant to the content of this article.

References

1. G. Whitman, *Journal of Institutional Economics* **18**, 3 (2022)
2. P. J. Boettke & R. A. Candela, *Journal of Institutional Economics* **17**, 6 (2021)
3. M.T. Panhans & R. Schumacher, *Journal of Institutional Economics* **17**, 5 (2021)
4. Z. Xu, Y. Li, S.N. Chau, T. Dietz, Li, C., Wan, L., Zhang, J., Zhang, L., Li, Y., Chung, M. G., & Liu, *Nature Sustainability* **3**, 1 (2020)
5. N. Cavusoglu, *International Economics* **157**, 1 (2019)
6. Z. Yildirim & A. E. Arifli, *Energy* **219**, 2 (2021)
7. Kemendag (2023a). <https://satudata.kemendag.go.id/>
8. L. M. H Ambya, *International Journal of Energy Economics and Policy* **12**, 1 (2022)
9. Kemendag. (2023b). <https://satudata.kemendag.go.id/data-informasi/perdagangan-luar-negeri/ekspor-non-migas-komoditi>
10. P. H. Egger & K. Erhardt. *Quantitative Economics Journal Of The Econometric Society* **15**, 2 (2024).
11. S. Y. Khan & A. Khederlarian, *Journal of Institutional Economics* **133**, 1 (2021)
12. P. Apiko, S. Woolfrey & B. Byiers, *European Centre for Development Policy Management* **287** (2020)
13. K. Ishikawa, *Journal of Contemporary East Asia Studies* **10**, 1 (2021)
14. A. Mehl, G. Sabbadini, M. Schmitz & C. Tille, *European Economic Review* **167**, 1 (2024)
15. S. Jagdambe & E. Kannan, *World Development Perspectives* **19**, 2 (2020)
16. G. O. Doojav, M. Purevdorj & A. Batjargal, *International Economics* **177** (2024).
17. F. Ganbarov, G. Alieva & I. Babazade, *Journal of Eastern European and Central Asian Research* **7**, 3 (2020)
18. O. D. Sweidan, *The International Trade Journal* **27**, 2 (2013)
19. H. Kamalyan, *International Economics* **174** (2023)
20. A. Nofansya & H. Sidik, *Padjadjaran Journal of International Relations* **4**, 2 (2022)

21. P. Krugman, M. Obstfeld & M. Melitz, IE: TP (Addison-Wesley to be published)
22. D. Salvatore, IE (John Wiley & Sons to be published)
23. J. Paul & R. Dhiman, *International Marketing Review* **38**, 5 (2021)
24. J. Bhangu & G. Kaur, *International Journal of Economic Policy in Emerging Economies*, **1**, 1 (2021)
25. B. Balassa, *The Review of Economics and Statistics* **68**, 2 (1986)
26. K. Li, L. Song & X. Zhao. (2008). *Com. trade and China's glob. Ec. integration* (p. 71) (United Nations University, 2008)
27. B. Balassa & M. Noland, *Journal of International Economic Integration* **4**, 2(1989)
28. T. H. Le, *Cogent Economics & Finance* **5**, 1 (2017)
29. M. Lal, S. Kumar, D.K. Pandey, V.K. Rai & W.M. Lim, *Journal of Business Research* **167** (2023)
30. M. Dahlquist & J. Pénasse, *Journal of Financial Economics* **14**, 2 (2022)
31. S. Masood, N. Khurshid, M. Haider, J. Khurshid & A.M. Khokhar, *Asia Pacific Management Review* **28**, 1 (2023)
32. S. I. Nikensari, E. Nurdiyanto, S. Y. Wong & S.F. Zahra, *International Journal of Energy Economics and Policy* **14**, 4 (2024).
33. S. Abbas, L. Xiaoyong, Q. Minrong, C. Ai & G. Peng, *Transnational Corporations Review* **14**, 4, (2022)
34. N.H. Nguyen, H.D. Nguyen, L.V. Thi Kim & C.Q.K Tran, *The Journal of Asian Finance, Economics and Business* **8**, 5 (2021).
35. O. Urgessa. *Heliyon* **10**, 1 (2024)
36. M. Rasbin, M. Ikhsan, B. Y. Gitaharies & Y. Affandi, *Cogent Economics & Finance* **9**, 1 (2021).
37. R. Chetty, J.N. Friedman & M. Stepner, *The Quarterly Journal of Economics* **139**, 2 (2024).
38. E. Boz, C. Casas, G.Georgiadis, G. Gopinath, H.L. Mezo, A. Mehl & T. Nguyen, *Patterns in Invoicing Currency in Global Trade* (International Monetary Fund, 2020)