IMPACT OF FOREIGN DIRECT INVESTMENT AND INTERNATIONAL TRADE ON THE INDUSTRIAL MACHINERY AND TRANSPORT EQUIPMENT SECTOR IN VIETNAM

TEAM HOA HƯỚNG DƯƠNG

Reasons for choosing the topic

01

FDI capital flows to Vietnam mainly into the industrial sector, including the field of machinery and transportation equipment manufacturing, helping this sector to have outstanding growth in both output and product value.

02

International trade helps the machinery and transportation equipment manufacturing industry expand its market, reach a wide range of customers and cooperate with partners.

03

The last reason is that Vietnam has seen significant growth in the machinery and transport equipment industry.

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Vietnam witness a remarkably growth rate in the machinery and transport equipment industry

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The last reason is that Vietnam has seen significant growth in the machinery and transport equipment industry.

(i) What impact does FDI have on the machinery and transportation equipment manufacturing industry in Vietnam?
(ii) What role does international trade, here is the trade balance, play in the development of the machinery and transportation equipment manufacturing industry in Vietnam?
(iii) What implications need to be considered to accelerate the machinery and transportation equipment manufacturing sector in Vietnam?

CONTENTS

04. Conclusion and policy implications

03. Research results and discussion

02. Research methodology

01. Literature review

01. LITERATURE REVIEW

Theoretical studies

- Machinery and transportation equipment manufacturing area.
- Theoretical studies about the impact of FDI.
- Theoretical studies about the impact of international trade.

Empirical researches

- Foreign direct investment affect the machinery and transportation equipment manufacturing area.
- International trade affect the machinery and transportation equipment manufacturing area.

Justification of research gap

Theoretical studies

Machinery and transportation equipment manufacturing area

According to the OECD, the machinery and transportation equipment manufacturing sector is a part of the construction materials and equipment industry. This economic area includes: machinery, equipment, electrical appliances and their electrical components (including non-electric machines); general industrial machinery and equipment; road vehicles (including air cushion vehicles). Classified according to ISIC, machinery and transportation equipment corresponds to industry groups 29, 30, 32, 34, 35 (World Bank).

Theoretical studies

Capital accumulation

Samuelson's "vicious circle" and “external push" theories: Low savings from residents lead to low ability to accumulate capital for investment, thus labor productivity may not be improved, workers' income is low, and the country is stuck in a vicious cycle of poverty.
MacDougall - Kemp theory: when there is a shift of capital from a developed country to a developing country, the output generated can increase.

The effect of spillovers

Spillover effects refer to positive or negative external effects arising from interactions between domestic and foreign factors in the host economy.

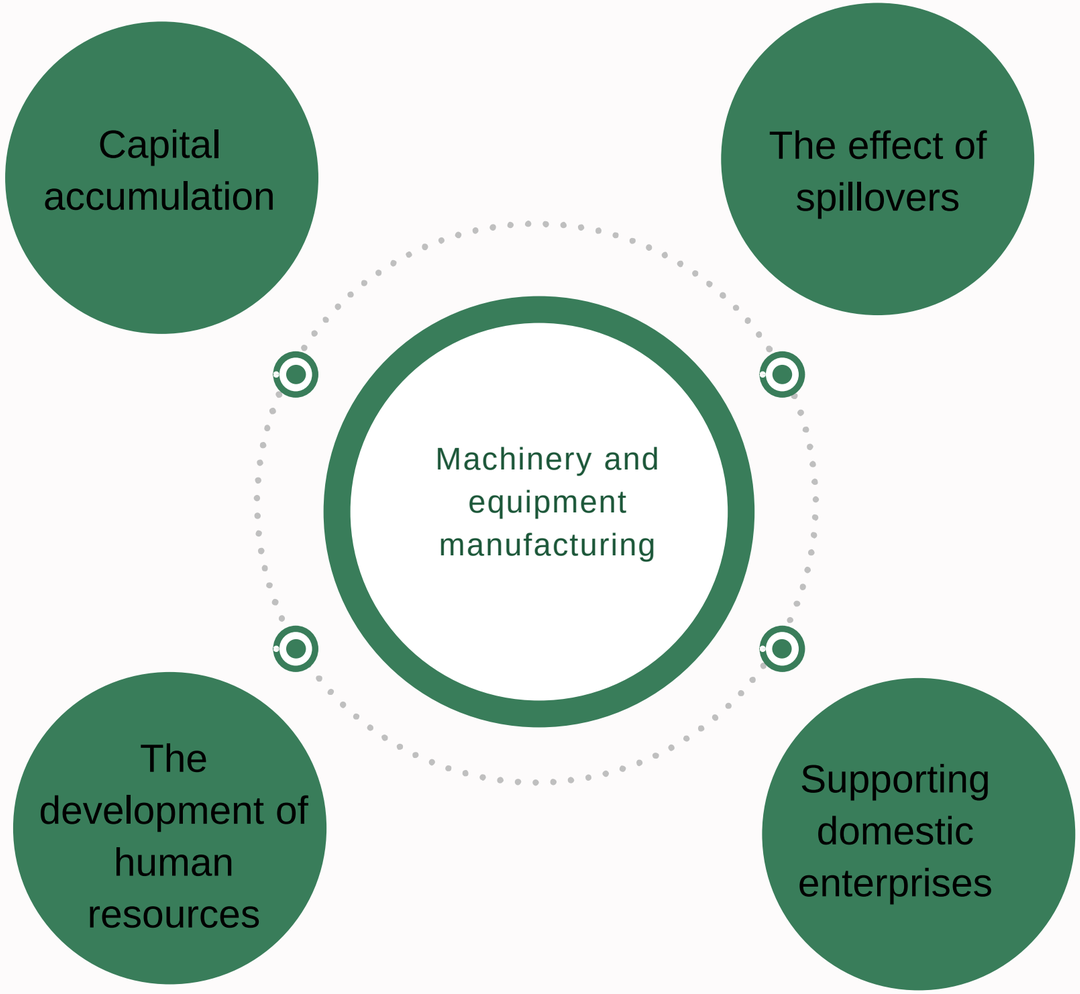
The development of human resources

FDI enhances the quality of human resources by the need of training and forming a high-quality workforce that meets the requirements of specialized knowledge and high skills.

Supporting domestic enterprises to participate in the global value chain

The demand for input materials as well as joint venture enterprises supporting stages in the production process are very great.

Theoretical studies about the impact of FDI



Theoretical studies

Theoretical studies about the impact of international trade

Participating in international trade allows countries to make technological progress through spillover effects (Grossman and Helpman, 1991).

The presence of imported goods can be a motivation for domestic businesses to advance technologies with more efficient production processes.

The growth of capital- and technology-intensive sectors such as machinery and transportation equipment manufacturing is more closely related to the aggregate knowledge source and technological progress of the economy.

Empirical researches

Foreign direct investment affect the machinery and transportation equipment manufacturing area

Positive	Negative	No relationship
Zhao (2011)	Afolabi et.al (2019)	Samantha & Liu (2018)
Bitzer (2005)	Nathan (2016)	
Bjorvatn (2001)	Marson & Yusop (2007)	
Keshari (2013)		
Blomstrom (2000)		
Dunning (1992)		

Source: Synthesized by the authors, 2023

Empirical researches

International trade affect the machinery and transportation equipment manufacturing area

Positive	Negative	No relationship
Guglielmo et al. (2015)	Okoye et al. (2016)	
Chikabwei et al. (2017)	Khobai & Moyo (2021)	
Adamu và Dogan (2017)	Nishimizu & Robinson (1984)	

Source: Synthesized by the authors, 2023

Justification of research gap

i)There are few studies on the impact of FDI or international trade on the machinery and transportation equipment manufacturing sector.

ii) Regarding the research model, most previous studies chose the OLS regression model. However, this model has many disadvantages such as: being sensitive to outlier data, requiring a linear relationship, having problems with multicollinearity and assuming an error-free condition.

iii)Regarding macro factors, previous studies have not mentioned other macro factors such as GDP growth or ODA capital received.

02. Research methodology

i. Data collection sources

ii. Research model and control variables included in the model

iii. Data analysis method

i. Data collection sources

Source

The World Bank development indicators database and General statistics office

Period of data set

From the fourth quarter of 2005 to the fourth quarter of 2022

ii. Research model and control variables included in the model

Research models

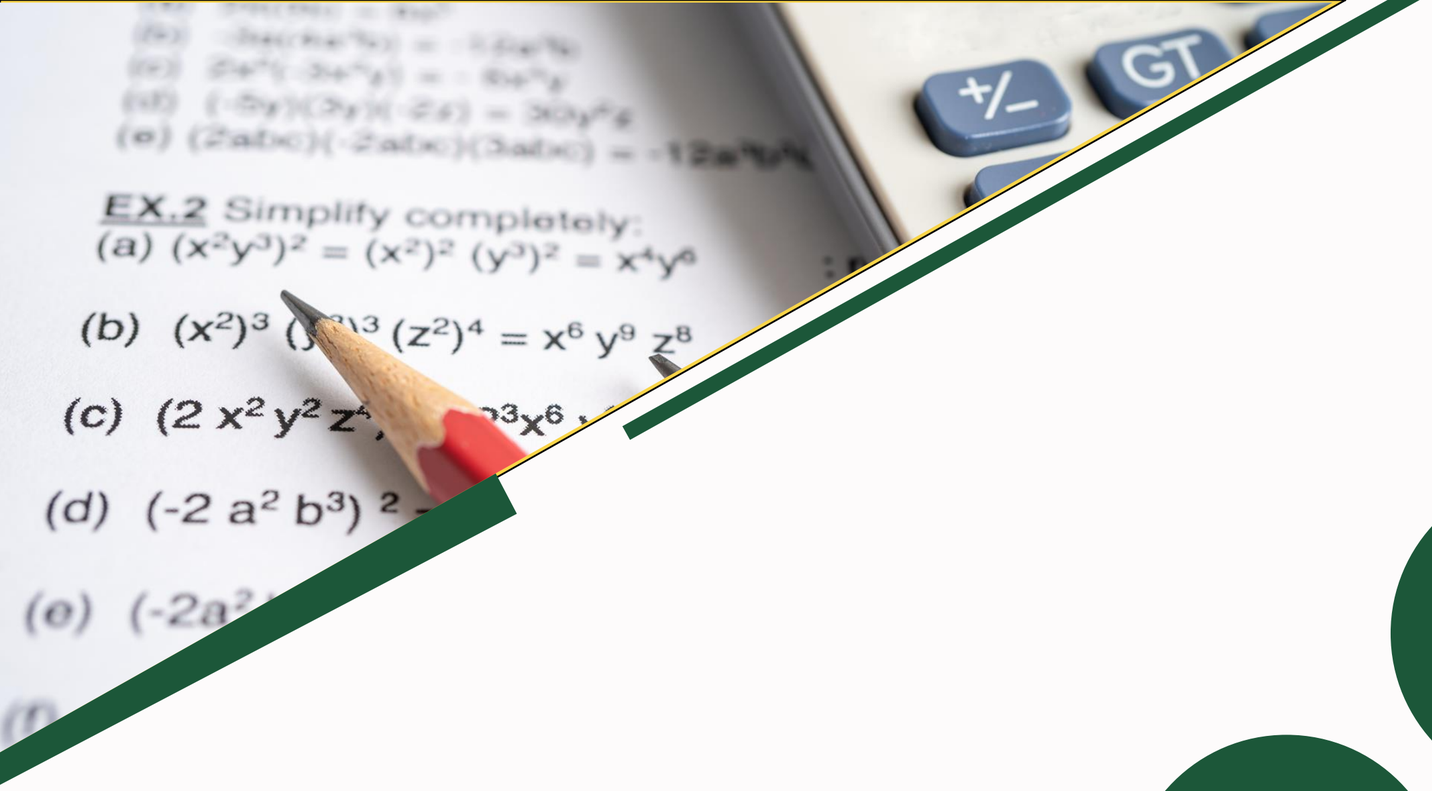
$$\Delta MTE_t = \beta_0 + \sum_{i=1}^{\rho} \beta_{0i} \Delta MTE_{t-1} + \sum_{i=1}^{\rho_1} \beta_{1i} \Delta FDI_{t-1} + \sum_{i=1}^{\rho_2} \beta_{2i} \Delta OPEN_{t-1} + \sum_{i=1}^{\rho_3} \beta_{3i} \Delta GDP_{t-1} + \sum_{i=1}^{\rho_4} \beta_{4i} \Delta MHT_{t-1} + \sum_{i=1}^{\rho_5} \beta_{5i} \Delta ODA_{t-1} + \sum_{i=1}^{\rho_6} \beta_{6i} \Delta TAX_{t-1} + \sum_{i=1}^{\rho_7} \beta_{7i} \Delta UB_{t-1} + \theta_0 MTE_{t-1} + \theta_1 FDI_{t-1} + \theta_2 OPEN_{t-1} + \theta_3 GDP_{t-1} + \theta_4 MHT_{t-1} + \theta_5 ODA_{t-1} + \theta_6 TAX_{t-1} + \theta_7 UB_{t-1} + \varepsilon_t$$

Source: Synthesized by the authors, 2023

Control variables included in the model

Var name	Expected results	Empirical Researches
FDI	+	Zhao (2011); Bitzer(2005),…
	-	Nathan (2016); Afolabi (2019);…
	No relationship	Samantha & Liu (2018)
OPEN	+	Adamu & Dogan (2017); Chikabwei et al. (2017);….
	-	Khobai & Moyo (2021); Okoye et al. (2016)
GDP	+	Yunus Kara;…
	+ and -	Rodrik, 2009;…
MHT	+	Gerschenkron (1962); Zahra (2020);…
ODA	+	Tiến (2012)
	-	Sahoo and Bishnoi (2016); Watanabe (2013);…
TAX	-	Boskin (1973); Trinh and Phong (2023);…
UB	No relationship	Gollin et al. (2016); Xiong et al. (2017);…

Source: Synthesized by the authors, 2023



iii. Data analysis method

Step 4: Diagnosing the ECM model

Step 3: Interpreting the results of the ARDL model

Step 2: Taking bound test

Step 1: Taking unit Root Test

03.RESEARCH RESULTS AND DISCUSSION

Verify ARDL bound

Independent variables	Dependent variable MTE			
	Coefficient	Standard error	t-statistics	p-value
MTE	-0.001062	0.000145	-7.328433	0.0000
FDI	-2.851.883	0.349150	-8.168081	0.0000
OPEN	1.016.930	0.203768	4.990618	0.0000
GDP	1.024.164	0.017827	5.745126	0.0000
MHT	-1.188.361	0.181674	-6.541169	0.0000
ODA	-1.695.071	0.245510	-6.904285	0.0000
TAX	-0.637695	0.212265	-3.004247	0.0052
UB	6.571.705	1.266.933	5.187096	0.0000
C	-0.001062	0.000145	-7.328433	0.0000

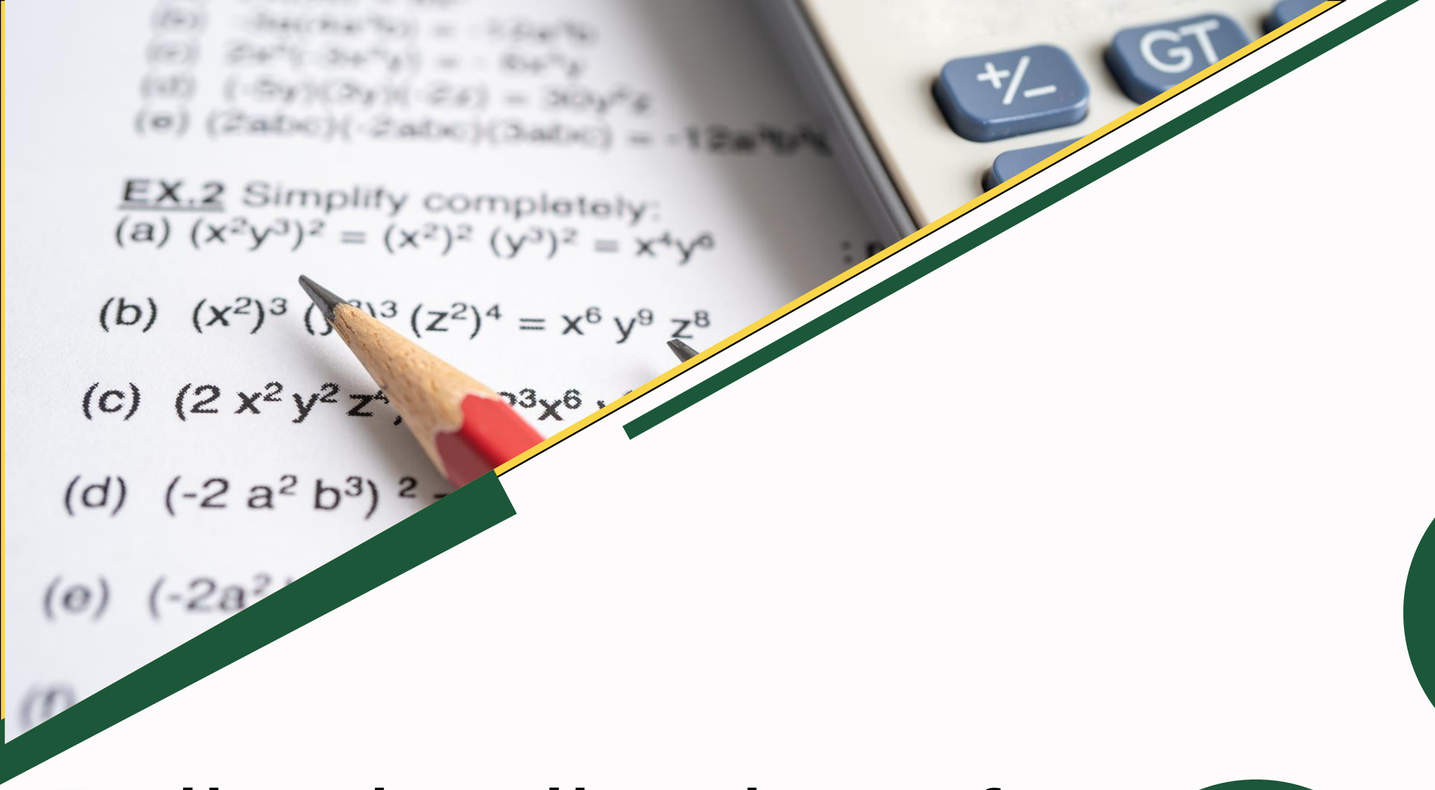
Source: Synthesized by the authors, 2023

04. CONCLUSION AND POLICY IMPLICATIONS

Conclusion

Independent variables	Long-term	Short-term
FDI	-	+
OPEN	-	+
GDP	+	-
MHT	+	+
ODA	-	+
TAX	-	+
UB	+	-

Source: Synthesized by the authors, 2023



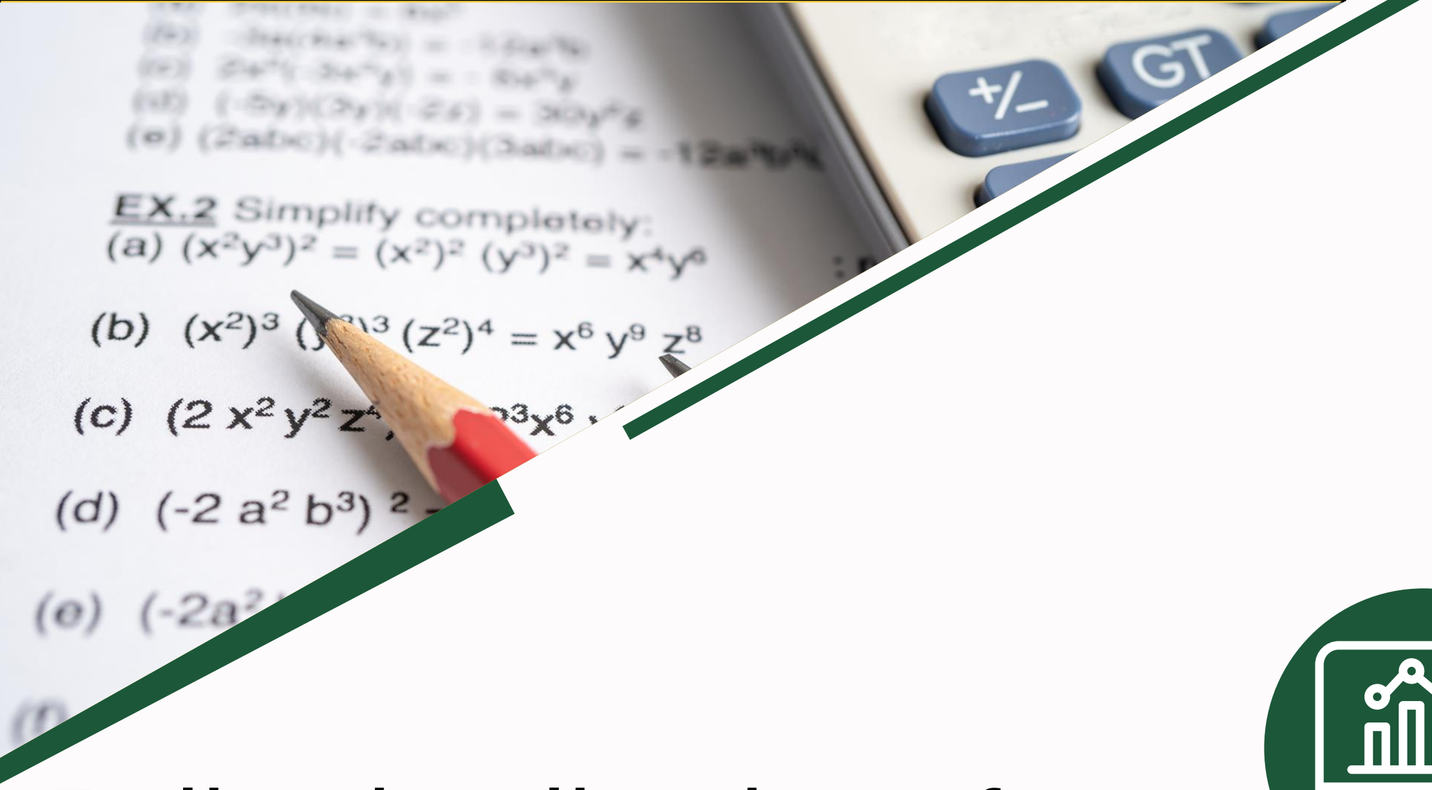
Policy implications for improving FDI

4. There needs to be post-investment support services.

3. The Vietnamese government should pay attention to improving and enhancing the quality of utility services and public services.

2. The government should support business activities of foreign investors.

1. Vietnam needs to have a establish strategies to selectively attract FDI capital capital with high technology content.



Policy implications for improving international trade

1. Encouragement for the establishment of R&D departments at enterprises in the field of domestic machinery and transportation equipment manufacturing should be offered.

2. Free and open international trade could be promoted by continuing to participate in bilateral and multilateral Free Trade Agreements in the region.

3. For the ODA capital received, the government should have a detailed distribution plan.

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THANK YOU!