Investigating the Determinants of Local Content Policy in G- 20 Countries

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Abstract

The local content policy encompasses measures governments or organizations implement to stimulate or mandate the utilization of domestically produced goods and services across various industries or sectors. This policy boosts economic growth, fosters job creation, and promotes development by prioritizing local resources and industries over imported alternatives. Within this framework, current research examines the factors influencing local content policies within G-20 countries over the period spanning from 2002 to 2021. This research employs panel data regression analysis, considering variables such as the number of listed companies as an indicator of local content, foreign direct investment, political stability, corruption, research and development expenditure, tariff rates, and exports and imports. The findings reveal an inverse relationship between corruption levels and economic growth with the number of domestically listed firms. Conversely, import volumes, political stability, research and development expenditure, and tariff rates exhibit a positive and statistically significant impact on the number of domestically listed companies. This research provides valuable insights for promoting local content and developing policies to effectively leverage domestic companies for innovation-driven, inclusive, and sustainable economic development.

Keywords: *Domestic Companies, Local Content, Corruption, Political Stability, Economic Growth.*

1. Introduction

Domestic companies play a crucial economic role by contributing to job creation, innovation, and overall economic growth. These companies are typically owned and operated within the country they are based in, and often rely on local resources and labor (Kishore & Gupta, 2020). By supporting domestic companies, consumers can help stimulate the local economy and promote national self-sufficiency. Additionally, domestic companies can help reduce reliance on foreign imports, strengthening a country's economic resilience (Singh et al., 2016).

Domestic companies operate within a particular country's borders, and they play a vital role in the economy. They contribute to economic growth by creating employment opportunities, generating revenue, and paying taxes (Sanchez at al., 2018). Moreover, domestic companies often have a better understanding of local market conditions, which enables them to tailor their products and services to meet the needs of local consumers. This, in turn, can help to stimulate demand and drive economic growth. Overall, domestic companies are an essential component of any healthy economy (Kee & Tang, 2016).

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Local content refers to the value added to products or services by using goods, services, and human resources sourced from within a particular country or region. The concept of local content is important because it helps to support local businesses, create employment opportunities, and promote economic growth. By using local resources, companies can reduce their dependence on imports and strengthen their supply chains (Autor et al., 2020). This can help to create a more stable business environment and reduce the risk of disruptions to supply chains caused by global events such as pandemics or natural disasters. Additionally, local content policies can help promote local industries' development and encourage innovation. Overall, local content is an important concept that can help to support sustainable economic development and create long-term benefits for local communities (Husted et al., 2016).

Accordingly, several studies have addressed various aspects of domestic companies and local content, however, these studies frequently lack a comprehensive analysis of the various factors and variables that shape the behaviour and performance of these entities. While previous research has delved into crucial issues surrounding domestic enterprises and local content indicators, a significant gap exists in understanding the comprehensive array of economic and non-economic factors that impact these entities. This deficiency poses a significant challenge for researchers seeking to comprehend the diverse and multifaceted determinants affecting domestic companies and their local content contributions. Therefore, current research aims to identify and integrate these distinct factors into a robust and validated indicator capable of accurately representing local content across all countries within the research sample. In addition, current research explores the role of economic and non-economic variables that affect domestic companies and local content in G 20 countries. Since the local content policies in G20 countries are often shaped by factors such as the country's economic structure, industrial capabilities, trade relationships, and political priorities. These policies may also evolve over time in response to changes in global trade dynamics, technological advancements, and shifts in domestic priorities. The current study stands out for its unique approach of using the number of local listed companies as an indicator of local content policy. It also includes variables like political stability, corruption, and tariff rates among its selected explanatory factors. To the best of our knowledge, no previous studies have explored these particular combinations of variables in this context.

The subsequent sections of this paper are organized as follows: In Section 2, an exploration into the related literature is undertaken, offering a comprehensive review of pertinent studies and scholarly work in the field. This is followed by Section 3, which outlines the data sources and the model employed for the research. Then, Section 4 conducts an in-depth analysis of the estimated results, providing valuable insights derived from our analysis. Lastly, Section 5 encapsulates the paper, summarizing the key findings derived from the research and providing policy insights based on the findings of current research.

2. Literature Review

Domestic companies, also known as domestic companies, are businesses that operate within the boundaries of a specific country or region. These companies are owned and operated by individuals or entities residing in the same country where they conduct their business activities. Domestic companies play a vital role in driving economic growth, creating employment opportunities, and contributing to the overall development of a nation (Esteves & Barclay, 2011).

One of the key advantages of domestic companies is their close proximity to the local market. They have a better understanding of local consumer preferences, cultural nuances, and market dynamics, allowing them to tailor their products or services to meet the specific needs of the local population. This localized approach often gives domestic companies a competitive edge over foreign counterparts (Mwangoma, 2019).

Moreover, domestic companies contribute significantly to the local economy by generating tax revenue, supporting local suppliers and vendors, and fostering economic stability. They also play a crucial role in building and maintaining strong community relationships by actively participating in local initiatives, supporting social causes, and creating a sense of pride and identity (Heum, 2008).

Domestic companies span various sectors, including manufacturing, retail, services, agriculture, technology, and more. They range from small-scale enterprises to large corporations, each making unique contributions to the domestic business landscape. In recent years, there has been an increasing emphasis on supporting domestic companies and promoting local industry. Governments and consumers alike recognize the importance of nurturing homegrown businesses to reduce dependence on imports, boost self-sufficiency, and stimulate economic growth (Ovadia, 2016).

Overall, domestic companies are the backbone of a country's economy. Their success and growth are vital for creating jobs, fostering innovation, driving competitiveness, and building a prosperous future for the nation as a whole.

Local businesses are subject to a variety of economic, managerial, and legal factors that can significantly affect their operations and success. The strength of local demand for products or services can affect the success of domestic companies, as high demand can lead to increased sales and revenues, while low demand can lead to decreased profits, and the level of competition in the market can also affect Local on the company's ability to attract customers and generate revenues. As for economic conditions and variables, they can significantly and significantly affect domestic companies and local content in general, such as GDP growth, inflation, and interest rates (Mushemeza et al., 2017).

Government policies and regulations can also affect the operations of domestic companies, such as changes in tax policies or labor laws that necessarily affect the company's profitability or the management of its workforce. The same applies to legal factors related to the nature of labor laws, commercial and industrial contract laws, and intellectual property (Ovadia, 2013).

In short, economic, administrative, and legal factors play a crucial role in shaping the environment in which domestic companies operate. Understanding these factors and adapting to changes is essential for domestic companies to continue in the business environment and succeed in the local market. However, a small number of studies have addressed the economic and non-economic factors that affect local content, particularly those studies that represent local content by the number of local companies. This study aims to investigate the determinants that affect the number of local companies and reflect the variable of local content.

3. Methodology and Data

To explore the factors influencing domestic companies as a measure of local content, this study utilizes a balanced panel comprising five G20 countries: Saudi Arabia, United Arab Emirates, Germany, Japan, and China. The analysis spans the period from 2002 to 2022.

Model Specification

The econometric model is a panel data regression specified as:

$$TOTAL\_LDC = \beta_0 + \beta_1(CORRUPTION) + \beta_2(EVI) + \beta_3(FDI) + \beta_4(GDP_{GROWTH}) + \beta_5(IVI) + \beta_6(POLITICAL) + \beta_7(R\_D) + \beta_8(TARIFF) + \beta_9(Covid19) \quad \text{(i)}$$

Where $TOTAL\_LDC$ is the number of listed companies with each country's stock exchange and it is used as the proxy measure of the local content policy. This metric reflects the extent to which domestic businesses are actively participating in the stock market and thus indicates the level of domestic economic activity and engagement with local markets. A higher number of listed companies suggests a greater presence of domestic enterprises within the economy, potentially indicating stronger adherence to local content policies and greater reliance on domestically produced goods and services. Whereas $CORRUPTION$ is the control of corruption index which is used to assess the level of corruption within a country or region, and it ranges from approximately -2.5 to 2.5." (World Bank, 2023). This metric provides a measure of the effectiveness of anti-corruption measures, transparency, and governance practices in combating corrupt activities. The index typically ranges from low to high, with higher scores indicating lower levels of corruption and better control mechanisms in place. In addition, EVI is the export value index and expressed as a percentage of the average for the base period (2015). This metric is used to assess the performance and trends in a country's exports over a specific period. A higher export value index indicates an increase in the value of exports, reflecting growth and competitiveness in international trade. This index is crucial for understanding a country's trade balance, economic growth, and global market presence. Furthermore, FDI is foreign direct investment which refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. FDI plays a significant role in global economic development by fostering international trade, stimulating job creation, transferring technology and knowledge, and promoting economic growth in both the investing and recipient countries. Furthermore, GDP_{GROWTH} shows the annual growth rate of GDP whereas IVI indicates the import value index which es are the current value of imports (c.i.f.) converted to U.S. dollars and expressed as a percentage of the average for the base period (2015). A higher import value index indicates an increase in the value of imports, reflecting factors such as changes in consumer demand, trade policies, and global economic conditions. POLITICAL represents the political stability and absence of violence/terrorism index and it refers to the condition within a country characterized by a peaceful and secure environment, where political institutions are robust and able to maintain order and stability. This condition signifies the absence of significant political unrest, civil conflict, terrorism, or other forms of violence that disrupt social harmony and economic activity. Political stability is essential for fostering investor confidence, promoting economic growth, and ensuring the well-being and safety of citizens. It is often considered a crucial factor for attracting foreign investment, sustaining economic development, and achieving social progress. Moreover, R_D shows the "gross domestic expenditures on research and development (R&D), expressed as a percentage of GDP. They include both capital and current expenditures in the four main sectors: business enterprise, government, higher education, and private non-profit. R&D covers basic research, applied research, and experimental development. (World Bank, 2023). Increased R&D expenditure can stimulate local innovation and technological advancements. This can lead to the development of new products, processes, or services that comply with local content requirements, thereby boosting local manufacturing

and production capabilities. Finally, TARIFF represents the percentage of tariff categories with international peaks, which signifies the proportion of categories in the tariff schedule where tariff rates are above 15 percent. This metric offers a measure of the selectivity in the application of tariffs (Table 2).

Table 1: Variables Description.

Acronym	Unit of Measurement	Definition	Source
Total_LDC	Number	Listed domestic companies, total.	World Bank database, 2023
Corruption	Index	Control of Corruption: Estimate	World Bank database, 2023
Evi	Index	Export value index (2000 = 100)	World Bank database, 2023
Fdi	%	Foreign direct investment, net inflows (% of GDP)	World Bank database, 2023
Gdp_Growth	%	GDP growth (annual %)	World Bank database, 2023
Ivi	Index	Import value index (2015 = 100)	World Bank database, 2023
Political	Index	Political Stability and Absence of Violence/Terrorism: Estimate	World Bank database, 2023
R_D	%	Research and development expenditure (% of GDP)	World Bank database, 2023
Tariff	%	Share of tariff lines with international peaks, all products (%)	World Bank database, 2023
Covid19	Binary	Dummy Variable for covid period Takes value 1 in 2019 and later.	

This research involves specifying and estimating an econometric model using panel data regression techniques. The model is formulated as a linear relationship between the total listed domestic companies and the explanatory variables described in Table 2. Current research employs the panel least squares method, which pools the data's cross-sectional and time series dimensions to generate efficient estimates of the parameters. Panel least squares control for unobserved heterogeneity across countries through fixed effects while also modelling dynamic relationships over time. Diagnostic tests are performed to check model assumptions and ensure the validity of the panel estimates.

Furthermore, recent research employs an econometric model using ordinary least squares (OLS) on Saudi time series data to investigate the factors influencing the index of local companies within this particular economy.

4. Results and Analysis

This research begins its empirical examination by presenting a descriptive overview of the chosen variables, detailing means, and standard deviations in Table 1. The dependent variable, total domestic listed companies (TOTAL_LDC), has an average value of 1250.48, suggesting an approximate count of 1250 domestic firms, with a notable range from 28 to 4154 across the sample. The mean values for the export and import indices stand at 97.4 and 86.9, respectively, while foreign direct investment inflows average 0.028% of GDP. The average GDP growth rate over the period is 3.5%. Both the political stability and corruption indices exhibit ranges from -0.657 to 1.17 and -0.617 to 1.932, respectively. Research and development expenditure constitutes an average of 1.8% of GDP.

Table 2: Panel Data Descriptive Statistics for (KSA, UAE, Germany, Japan, China) from 2002 to 2022.

	Total_Ldc	Corruption	Evi	Fdi	Gdp_Growth	Ivi	Political	R_D	Tariff
Mean	1250.483	0.797501	97.45812	-0.028126	3.542978	86.99314	0.339914	1.838567	5.952945
Median	648.0000	1.071450	103.0273	0.036313	2.762244	94.54377	0.671626	1.912140	5.339829
Maximum	4154.000	1.932908	190.8134	43.65851	14.23086	160.0791	1.176023	3.367880	26.14910
Minimum	28.00000	-0.617888	14.32156	-37.18489	-5.693836	16.19196	-0.657061	0.042300	0.025358
Std. Dev.	1322.834	0.850501	35.32604	6.878908	4.206660	32.67813	0.668899	1.087262	5.805789
Observations	105	105	105	105	105	105	105	105	105

Source: Authors' Compilation Using Eviews 12.

The scatterplot matrix in Figure (1) visualizes the bivariate relationships between the dependent variable total domestic companies (TOTAL_LDC) and each explanatory variable. The plots show positive correlations between TOTAL_LDC and import value index (IVI), political stability (POLITICAL), and research and development expenditure (R_D). As these variables increase, TOTAL_LDC also tends to increase. Meanwhile, TOTAL_LDC exhibits negative relationships with the corruption index (CORRUPTION) and GDP growth (GDP_GROWTH) – higher values in these variables are associated with lower TOTAL_LDC. The associations between TOTAL_LDC and the remaining factors – exports (EVI), FDI inflows (FDI), and tariffs (TARIFF) – appear more ambiguous.
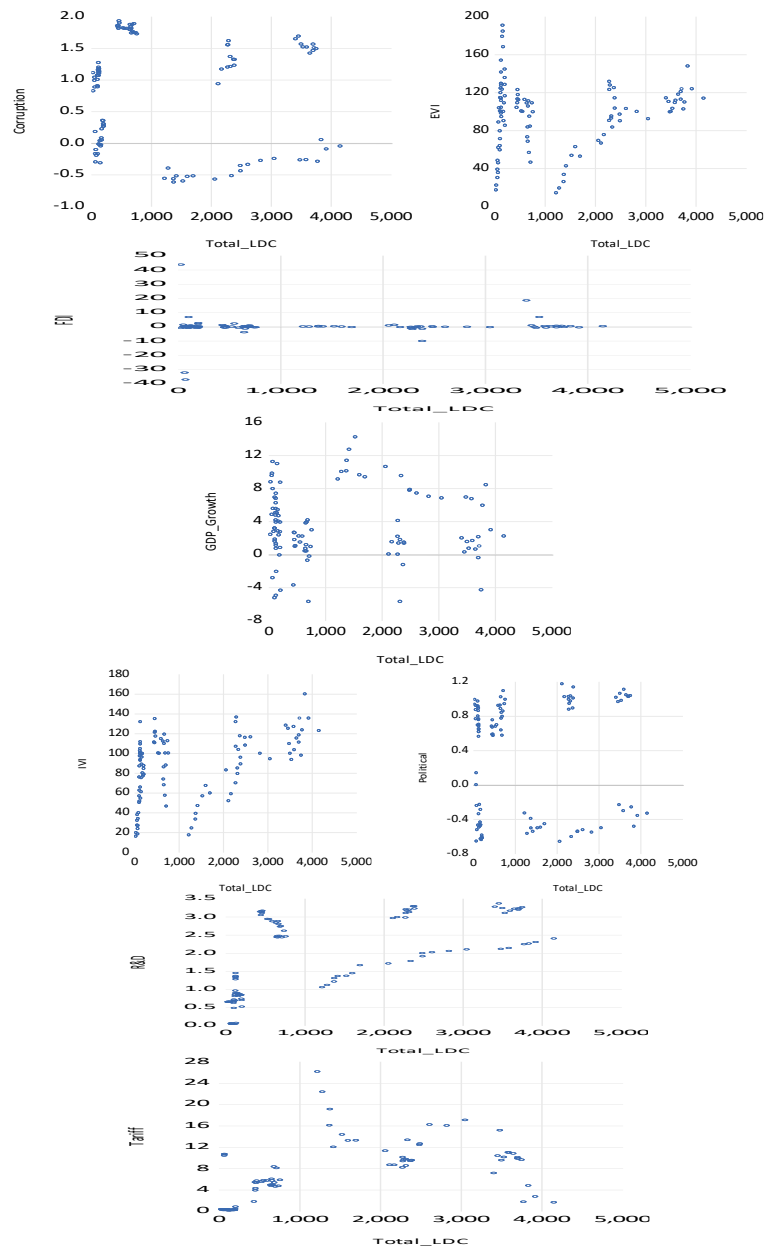
Figure 1: Scatter Plot of the Dependent and Independent Variables.

The correlation matrix in Table 1 displays the pairwise linear correlations between the dependent variable total domestic companies (TOTAL_LDC) and the explanatory variables. TOTAL_LDC exhibits positive and statistical correlations with import value index (IVI), political stability (POLITICAL), research & development expenditure (R_D), and tariffs (TARIFF). The strongest associations are with R_D (0.63) and IVI (0.45). Meanwhile, TOTAL_LDC has very weak correlations with corruption (CORRUPTION), exports (EVI), FDI inflows (FDI), and GDP growth (GDP_GROWTH). The negative link between CORRUPTION and TOTAL_LDC aligns with expectations. Among the independent variables, the highest correlations are between POLITICAL and CORRUPTION (0.89) and IVI and R_D (0.61).

Table 2: Panel Data Correlation.

	Total_Ldc	Corruption	Evi	Fdi	Gdp_Growth	Ivi	Political	R_D	Tariff
Total_Ldc	1.000000								
Corruption	-0.056851	1.000000							
Evi	0.092812	0.146316	1.000000						
Fdi	0.064095	0.103158	-0.034897	1.000000					
Gdp_Growth	-0.010606	-0.620122	-0.232855	0.114389	1.000000				
Ivi	0.445146	0.354240	0.715512	0.073670	-0.248069	1.000000			
Political	0.060598	0.889637	-0.033599	0.137798	-0.491345	0.186026	1.000000		
R_D	0.633764	0.599216	0.187192	0.099217	-0.371517	0.605289	0.531730	1.000000	
Tariff	0.579978	-0.240984	-0.397739	-0.051269	0.286812	-0.063545	-0.129471	0.389280	1.000000

Source: Authors' Compilation Using Eviews 12.

Table (4) presents the estimates from the alternative specifications of the model specified in Eq (i). This research follows a general-to-specific approach to derive the best model. The estimates in all the alternative specifications reveal a negative and statistically significant relationship between corruption and the number of locally listed companies, as corruption can deter business activities and investment by increasing costs, creating uncertainties, and distorting market competition. High levels of corruption can erode investor confidence, reduce transparency, and hinder business sector growth (Esteves & Barclay, 2011). Therefore, a higher level of corruption is often associated with a less favourable business environment (Heum, 2008). In addition, current research finds a positive and statistically significant impact of research and development expenditure(R_D) on the number of domestically listed companies, highlighting the importance of R&D expenditure as a catalyst for business growth and the development of the domestic stock market. By investing in research and development, countries and companies can foster innovation, enhance competitiveness, and attract more companies to list on the domestic stock exchange, which can have positive implications for economic growth, job creation, and overall market development (Esteves & Barclay, 2011).. Moreover, estimates in the alternative specifications show a negative relationship between the GDP growth and the number of local listed companies, indicating that while the overall economy may grow, the domestic stock market may not be expanding at the same pace (Ovadia, 2016). Various factors such as economic concentration, investment alternatives, regulatory environment, and market maturity can contribute to this inverse correlation. It signifies the importance of a supportive business environment, favourable policies, and diversified investment opportunities to foster the growth of the domestic stock market

alongside the economic expansion (Mwangoma, 2019). Furthermore, the current study finds a positive and statistically significant relationship between the import value index and the number of domestic listed companies as a higher import value index can be associated with increased trade activities, globalization, and integration with global markets (Mwangoma, 2019). This can provide local companies with access to new markets, technologies, and opportunities, prompting them to expand and seek capital through public listings. Also, our estimates reveal a positive and statistically significant impact of political stability and number of locally listed companies, which underlines the critical role of a stable political environment in fostering business confidence, stimulating investment, and promoting the growth and development of the domestic capital market (Heum, 2008). It highlights the importance of political stability as a key determinant of the domestic stock market's health, vibrancy, and attractiveness for both companies and investors. A stable political environment can create a conducive business environment with clear policies, regulations, and the rule of law. This can attract both domestic and foreign investments, stimulate business growth, and promote the development of the domestic capital market. Furthermore, this study finds a positive and statistically significant impact of tariff rates on the local listed companies, suggesting that tariff policies and trade measures can play a role in shaping the domestic business environment, influencing the competitiveness of domestic industries, and contributing to the growth and development of the domestic capital market. Higher tariff rates can protect domestic industries from foreign competition by increasing the cost of imported goods and services (Mwangoma, 2019).. This can create a favourable competitive environment for domestic companies, stimulate domestic production, and encourage more companies to go public and seek capital through the stock market. Finally, this research finds a negative and statistically insignificant impact of COVID 19 on the number of listed companies, which suggests that while the pandemic posed significant challenges and disruptions, the domestic stock market remained resilient, adaptive, and attractive for businesses.

Table 3: Model Estimation.

Dependent Variable	Total_Ldc		Ln Total_Ldc		Ln Total_Ldc		Ln Total_Ldc	
Model No.	1		2		3		4	
Variable	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
C	-159.6548	0.556	4.2244	0.000	4.2247	0.000	4.1218	0.000
Corruption	-2054.5770	0.000	-1.2304	0.000	-1.2296	0.000	-1.2153	0.000
Evi	-2.0785	0.500	-0.0020	0.339	-0.0020	0.339		
Fdi	4.9845	0.585	-0.0007	0.915				
Gdp_Growth	-49.5667	0.013	-0.0287	0.035	-0.0291	0.028	-0.0272	0.037
Ivi	11.8763	0.003	0.0083	0.002	0.0083	0.002	0.0066	0.001
Political	1412.1540	0.000	0.3592	0.015	0.3580	0.015	0.3760	0.010
R_D	923.2730	0.000	1.2013	0.000	1.1999	0.000	1.1959	0.000
Tariff	27.2733	0.180	0.0531	0.000	0.0534	0.000	0.0586	0.000
Covid19	283.2667	0.108	-0.0289	0.809	-0.0289	0.808	-0.0072	0.951
R-squared	80.39%		92.62%		92.62%		92.55%	
Adjusted R-squared	78.97%		91.92%		92.01%		92.01%	
F-statistic	56.79181		132.5464		150.6644		172.1939	
Prob(F-statistic)	0.000		0.000		0.000		0.000	

Source: Authosr' Compilation Using Eviews 12.

Table 5 presents the diagnostic tests, and the normality test suggests that the data is approximately normally distributed, as indicated by the non-significant JB test value whereas

the cross-section dependence test indicates the presence of cross-sectional dependence in the data, as evidenced by the significant Breusch-Pagan LM test.

Table 4: Diagnostics Tests.

Normality		Cross-Section Dependence Test	
JB	4.485572	Breusch-Pagan LM	25.35155
PROB	0.10616	PROB	0.0047

Source: Authors' Compilation Using Eviews 12.

5. Conclusion

This research investigates the determinants of local content policy for the selected panel of G20 countries from 2002- 2021. In this context, the current study employs the number of listed companies to measure local content policy and employs variables such as foreign direct investment, research and development expenditure, political stability, corruption, economic growth, exports value index, imports value index, and tariff rate. The estimates reveal a positive and statistically significant impact of research and development expenditure, imports value index, political stability, and tariff rates on the number of listed companies. Whereas corruption and economic growth have negative and statistically significant impacts on the number of listed companies. This research provides several key policy implications for fostering a vibrant and competitive business environment. The study, using the number of listed companies as a measure of local content policy, highlights the critical role of research and development (R&D) expenditure, imports value index, political stability, and tariff rates in influencing the growth of the domestic business environment. To capitalize on these positive factors, governments and policymakers are encouraged to prioritize and incentivize R&D investments to foster innovation and technological advancements. Additionally, strategies to enhance the import value index through trade liberalization and diversification can further support the growth of the domestic capital market by improving market access and competitiveness. Strengthening political stability through effective governance, policy continuity, and the rule of law is essential to building business confidence, attracting investments, and promoting sustainable economic growth. Moreover, optimizing tariff policies to support domestic industries and combat corruption through enhanced transparency, accountability, and governance frameworks is crucial to creating a conducive and competitive business environment. Lastly, policymakers should adopt balanced and inclusive economic growth strategies that focus on enhancing productivity, competitiveness, and employment opportunities to support the development of a resilient and dynamic domestic capital market.

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