Regulatory Determinants of FDI Inflows in the SAARC Region: A Lasso Regression Analysis Post-DB Report Era

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Abstract

In the wake of the World Bank's discontinuation of the Doing Business Report due to acknowledged irregularities, this study provides a timely assessment of the factors affecting Foreign Direct Investment (FDI) inflow within SAARC countries using variables from the revised DB 17-21 methodology. With a keen focus on the post-report era, the research examines the significance of individual Ease of Doing Business factors, juxtaposed against the backdrop of the report's cessation in September 2021. Utilizing a comprehensive dataset spanning the variables obtained from the DB 17-21 methodology, this paper aims to delineate the regulatory dimensions that significantly influence FDI influx into the South Asian region, particularly SAARC Countries.

The objectives of the study are twofold: to critically evaluate the impact of each regulatory factor on FDI and to propose data-driven policy recommendations that could bolster investment attractiveness in the SAARC region. The research employs Lasso regression, a refined statistical tool adept at handling multicollinearity without omitting crucial variables, thus ensuring a robust analysis amidst an array of interlinked business factors.

The study's significance lies in its methodological rigor and contextual relevance. By adopting the DB 17-21 framework, the research fills a critical gap in current literature, offering fresh insights into the investment landscape of SAARC nations post-2016. The findings are expected to be instrumental for policymakers, investors, and researchers, providing a nuanced understanding of the determinants of FDI in a changing global business environment.

Keywords: FDI Inflow, SAARC Countries, DB 17-21 Methodology, Regulatory Impact, Ease of Doing Business.

Introduction

Foreign Direct Investment (FDI) has long been the linchpin of economic growth strategies in developing nations, acting as a catalyst for technological innovation, employment generation, and integration into global markets (Alfaro, Chanda, Kalemli-Ozcan, & Seek, 2004). Particularly in the SAARC (South Asian Association for Regional Cooperation) region, the allure of FDI is pronounced, given its burgeoning markets and investment potential (Agarwal, 2002). However, the attractiveness of a country to foreign investors is not merely a function of market potential but is intricately linked to the regulatory environment, which is encapsulated in the World Bank's Ease of Doing Business (EODB) Index (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002).

The discontinuation of the Doing Business Report by the World Bank in September 2021 has precipitated a methodological void, rendering the erstwhile EODB Index an historical artefact rather than a forward-looking metric (World Bank, 2021). This cessation, catalyzed by irregularities and ethical concerns, disrupts a long-standing benchmark for evaluating business environments and compels a re-examination of the determinants of FDI using novel approaches (Romero, 2021). The present study heeds this call by leveraging the DB 17-21 methodology, an approach retaining the rigor of the World Bank's analytical frameworks while eschewing the compromised aspects of the former index.

Within the SAARC countries, FDI serves as a critical avenue for economic fortification. The economic landscapes of these nations are varied, with disparities in industrialization levels, market sizes, and regulatory frameworks, all of which hold sway over FDI inflows (Pandya & Sisombat, 2017). The significance of FDI in this context is multifaceted, impacting not only the economic but also the socio-political fabric of the recipient countries (Sahoo & Dash, 2009). It is, therefore, imperative to dissect the constituents of the business environment that are pivotal to FDI inflow post-2021, when the Doing Business Report's influence has waned.

The research question that this study posits is both timely and consequential: In the absence of the Doing Business Report, which regulatory factors, as gauged by the DB 17-21 methodology, significantly influence FDI inflows into the SAARC countries? This inquiry is not merely academic; it holds substantial implications for policy formulation, investor decision-making, and the broader ambit of development economics. By delving into the empirical nuances of this question, the study endeavors to elucidate the regulatory prerequisites for FDI enhancement in the SAARC context, postulating that the insights gleaned will be instrumental in navigating the post-Doing Business Report epoch.

In forging ahead with this inquiry, the study aligns itself with the scholarly trajectory that underscores the EODB Index's pivotal role in determining FDI, albeit with a renewed methodological lens that accounts for the recent discontinuation of the Report (Busse & Groizard, 2008; Morris & Aziz, 2011). The subsequent sections will unfurl the intricate tapestry of regulatory dimensions and their empirical associations with

FDI, underpinned by a robust methodological apparatus that respects the complexity and contemporaneity of the subject matter at hand.

Literature Review

The nexus between the Ease of Doing Business (EODB) and Foreign Direct Investment (FDI) has been a perennial subject of empirical scrutiny. The seminal work by Djankov et al. (2002) posited that regulatory simplicity and transparency directly enhance the investment appeal of a country, promoting FDI inflows by mitigating information asymmetry and operational risks. This proposition has been empirically validated in diverse contexts, with studies demonstrating that improvements in a country's EODB rankings are positively correlated with increases in FDI (Busse & Groizard, 2008).

The EODB Index, developed by the World Bank, has been pivotal in these studies, serving as a proxy for the regulatory environment of a country (World Bank, 2020). Researchers have utilized the EODB Index to assess its individual components' impact on FDI, such as starting a business, obtaining credit, and protecting minority investors (Klapper, Laeven, & Rajan, 2006). Moreover, the EODB's comprehensive nature has allowed for nuanced analyses of the differential impact of these components on various FDI types, such as greenfield investments and mergers and acquisitions (Demirbag, Tatoglu, & Glaister, 2010).

However, the methodology employed in these studies has evolved alongside the EODB's own methodological changes. Earlier research predominantly used simple OLS regressions, assuming a direct and linear relationship between EODB rankings and FDI (Asiedu, 2002). Subsequent studies have adopted more sophisticated econometric models, including fixed and random effects models, to account for unobserved heterogeneity among countries (Henisz, 2000). Dynamic panel data methods, such as the System GMM, have also been employed to address endogeneity concerns and the dynamic nature of FDI (Blonigen & Piger, 2014).

Despite these methodological advancements, the abrupt discontinuation of the Doing Business Report due to documented irregularities has created an empirical lacuna (World Bank, 2021). This termination has not only called into question the reliability of past findings but also necessitated the formulation of alternative methodological approaches that can sustain the investigation into the EODB-FDI relationship.

The present study aims to bridge this gap by employing the DB 17-21 methodology, which retains the conceptual underpinnings of the original EODB Index while ensuring methodological integrity. This approach is particularly germane for SAARC countries, which have demonstrated a positive trajectory in both EODB rankings and FDI inflows (Morris & Aziz, 2011; Pandya & Sisombat, 2017). The study also expands the analytical scope by incorporating all 11 variables of the EODB, a comprehensive assessment not previously undertaken.

Furthermore, this study uniquely situates itself within the SAARC context by selecting countries devoid of reported irregularities, as per the World Bank's 2021 statement. This selection criterion not only enhances the validity of the findings but also offers a focused regional perspective on the EODB-FDI interplay (Sahoo & Dash, 2009).

By deploying the DB 17-21 methodology for data compilation, this research navigates beyond the constraints presented by the cessation of the Doing Business Report. The innovative approach offers a rigorous analytical framework, poised to furnish the extant literature with an updated, empirically robust examination of how various regulatory factors encapsulated by the EODB influence FDI inflows, with the spotlight on the SAARC region's dynamic investment milieu.

Central to this inquiry is the evaluation of the significance of 11 distinct regulatory variables on FDI inflows in the SAARC countries. This comprehensive approach employs a refined econometric model, articulating the relationship between normalized FDI and a suite of regulatory indicators as per the DB 17-21 methodology. Specifically, the model posits that the normalized FDI in the subsequent year $FDI_{Norm_{t+1}}$ is a function of scores assigned to dealing with construction permits (DCP), enforcing contracts (EC), getting credit (GC), getting electricity (GE), paying taxes (PT), the postfiling index (PSI), protecting minority investors (PMI), registering property (RP), resolving insolvency (RI), starting a business (STB), and trading across borders (TAB), all assessed during the year t. This formulation not only enhances the predictive accuracy of FDI inflows but also ensures that each variable's impact is meticulously discerned, thereby providing a granular analysis of regulatory influences on FDI within the SAARC context.

Study Objectives and Methodology

The primary objective of this study is to analyze and ascertain the impact of regulatory factors on Foreign Direct Investment (FDI) inflows into SAARC countries. These factors are based on the World Bank's DB 17-20 data, which serve as proxies for the ease of doing business within these nations. The study's rationale stems from the need to investigate the efficacy of these variables in the wake of the discontinuation of the Doing Business Report due to reported irregularities, thereby necessitating an alternative yet robust analytical approach to understand their implications on FDI.

The DB 17-20 data comprises eleven regulatory domains hypothesized to influence FDI inflows. These domains include scores for dealing with construction permits (DCP), enforcing contracts (EC), getting credit (GC), getting electricity (GE), paying taxes (PT), the postfiling index (PSI), protecting minority investors (PMI), registering property (RP), resolving insolvency (RI), starting a business (STB), and trading across borders (TAB). These scores are utilized as independent variables within a regression framework, with the FDI values normalized to current U.S. dollars in millions to ensure comparability and consistency across different economic sizes and timescales. The Econometric function that we are using is:

$$FDI_{Norm_{t+1}} = \beta_0 + \beta_1 DCP + \beta_2 EC + \beta_3 GC + \beta_4 GE + \beta_5 PMI + \beta_6 PSI + \beta_7 PT + \beta_8 RI + \beta_9 RP + \beta_{10} STB + \beta_{11} TAB + \epsilon$$

Given the complexity of economic data and the potential for multicollinearity among explanatory variables, Lasso regression is employed to distill the regulatory factors that are genuinely predictive of FDI inflows (Tibshirani, 1996). This approach is particularly advantageous in scenarios where predictor variables may be highly correlated, as it enforces sparsity through penalization, thereby reducing the risk of overfitting and enhancing model interpretability (Hastie, Tibshirani, & Friedman, 2009).

Preliminary data analysis began with the computation of descriptive statistics to understand the distributional characteristics of the variables under consideration. For example, the average score for dealing with construction permits (DCP) was found to be 59.42, with a standard deviation indicative of variability across the SAARC countries. The initial diagnostic tests, including the Durbin-Watson and Breusch-Pagan tests, showed no significant issues with autocorrelation or heteroskedasticity, respectively, thus validating the subsequent regression analysis.

The regression analysis revealed the differential impact of the regulatory factors on FDI inflows. Notably, variables such as getting electricity (GE) and resolving insolvency (RI) exhibited non-zero coefficients, implying a significant predictive relationship with FDI, while others like starting a business (STB) and trading across borders (TAB) did not demonstrate a substantial impact within the Lasso regression model.

In the construction of the econometric model for this analysis, the Lasso (Least Absolute Shrinkage and Selection Operator) regression is employed, which is formally articulated as a constrained minimization

problem. This statistical method is particularly chosen for its proficiency in integrating both variable selection and regularization, enhancing the model's predictive accuracy while simultaneously addressing the potential issue of multicollinearity. The Lasso regression function for the present model is delineated as follows:

Let ($FDI\_Norm_{(t+1)}$) denote the normalized Foreign Direct Investment inflows for the subsequent year, and let ($DCP, EC, GC, GE, PMI, PSI, PT, RI, RP, STB,$) and ($TAB$) represent the regulatory factors as per the DB 17-20 methodology. The Lasso regression aims to estimate the coefficients ($\beta_0, \beta_1, \dots, \beta_{11}$) that minimize the penalized residual sum of squares given by the equation:

$$\hat{\beta}^{lasso} = \arg\min\left\{\sum_{i=1}^{n}\left(FDI_{Norm_{i_{t+1}}} - \beta_0 - \beta_1 DCP_i - \beta_2 EC_i - \cdots - \beta_{11}TAB\right)^2 + \lambda\sum_{j}^{11}|\beta_j|\right\}$$

Here, λ is the tuning parameter that dictates the strength of the penalty imposed on the coefficients. This penalty term is instrumental in the Lasso regression's characteristic feature of shrinking some coefficients towards zero, effectively excluding less significant predictors from the model. The optimal value of λ is ascertained through cross-validation techniques, ensuring that the model neither overfits nor underfits the data.

The solution to this optimization problem yields the Lasso estimates $\widehat{\beta^{lasso}}$, which are then interpreted within the context of the model to discern the relative influence of each regulatory factor on FDI inflows. It is noteworthy that the Lasso regression's intrinsic selection mechanism is particularly advantageous in high-dimensional datasets where the number of predictors may be large relative to the number of observations.

The R programming language was utilized for the execution of this empirical analysis. The data was reshaped from its original long format into a wide format suitable for regression analysis, with FDI values shifted to align with the future period in which the investment would materialize (R Core Team, 2020). The application of the Lasso regression was methodically executed using the glmnet package, which is specifically designed for such econometric analyses (Friedman, Hastie, & Tibshirani, 2010).

In summary, the methodology of this study is underpinned by a robust analytical framework that leverages advanced statistical techniques to interpret complex economic data. The Lasso regression approach is well-justified given the nature of the data, and the findings contribute to a nuanced understanding of the determinants of FDI inflows in the SAARC region post the Doing Business Report era.

Analysis and Discussion

Descriptive Statistics

The descriptive statistics form the bedrock of our empirical analysis, offering a quantitative synopsis of the regulatory factors that are theorized to influence Foreign Direct Investment (FDI) in the SAARC region. Our analysis encapsulates 40 observations across 11 metrics of the Doing Business (DB) data, reflecting a multifaceted regulatory landscape.

Table 1

Descriptive Statistics

Metrics	*Observations*	*Mean*	*Min*	*Max*	*Std_Dev*
DCP	40	59.42524	33.70269	78.65826	13.74795
EC	40	43.01902	22.21285	69.98871	13.14698
FDI_Norm	40	0.10537	0.00000	1.00000	0.25234

GC	40	45.62500	25.00000	80.00000	14.81456
GE	40	59.39808	18.57784	90.27301	19.77059
PMI	40	54.50000	10.00000	80.00000	19.91649
PSI	36	43.31229	4.46429	95.49885	26.36355
PT	40	58.38774	41.53880	80.98735	10.79579
RI	35	40.14211	23.61883	60.55790	10.71549
RP	40	45.37279	27.08333	72.57139	15.78872
STB	40	83.97021	71.74225	92.04130	5.31581
TAB	40	62.32813	28.90345	94.24843	21.64774

Source: Generated by Author(s) using R Studio

The mean score for dealing with construction permits (DCP) is 59.43, with a standard deviation of 13.75, indicating a moderate level of variance within the SAARC countries. This suggests a diverse range of experiences in navigating the construction permit process across these nations. Notably, enforcing contracts (EC) and getting credit (GC) show similar means (43.02 and 45.63, respectively), but their spread—captured by their standard deviations (13.15 and 14.81, respectively)—reveals that the ease or difficulty of enforcing contracts and obtaining credit differs markedly across countries, a disparity that could significantly affect investment decisions.

The normalized FDI (FDI_Norm) has a mean of 0.105, a minuscule figure indicating that, on average, the FDI inflows, when adjusted to a uniform scale, are modest across the SAARC nations. The standard deviation for FDI_Norm is relatively low at 0.25, which underscores the absence of wide disparities in normalized FDI values within the dataset. This uniformity could imply a level playing field for FDI across these countries or a universally low investment attractiveness within the region.

The postfiling index (PSI) exhibits the greatest variability (a standard deviation of 26.36), with scores ranging from as low as 4.46 to as high as 95.50. Such variation indicates that postfiling procedures, such as tax refunds and audits, vary extensively in their efficiency and clarity across the SAARC countries, potentially influencing investor sentiment and behavior.

Starting a business (STB) is the highest-scoring metric, with an average of 83.97 and a narrow standard deviation of 5.32, suggesting a relatively homogenous and potentially less cumbersome process for entrepreneurs across the region. In stark contrast, the scores for trading across borders (TAB) have a substantial spread (a standard deviation of 21.65), highlighting the differing degrees of complexity in cross-border trade among the countries studied.

When comparing these results with existing literature, the findings resonate with the work of Djankov et al. (2002) and Ayyagari et al. (2007), who postulated that regulatory efficiency and transparency are crucial for attracting FDI. However, our study departs from these earlier analyses by focusing on post-2021 data and employing the DB 17-20 methodology, thus offering updated insights that reflect the current regulatory landscape's nuances.

The forthcoming discussion of the Lasso regression results is anticipated to shed light on the complex dynamics between these regulatory factors and FDI inflows. The pertinence of this study is accentuated by its response to the gap left by the discontinuation of the Doing Business Report. Consequently, this research does not simply replicate existing studies; rather, it seeks to thoughtfully contribute to the discourse on the interplay between the ease of doing business and FDI, particularly within the transforming regulatory environment of the SAARC nations.

Diagnostic Tests for Regression

Ensuring the validity of regression analysis demands a meticulous assessment of underlying statistical assumptions. The Lasso regression model applied in this study aims to elucidate the impact of regulatory factors on FDI inflows within the SAARC region, premised on the fidelity of these assumptions.

Table 2: Diagnostics Tests for Regression

Test	Statistic	P-value
Durbin-Watson	1.47554082	0.16738
Breusch-Pagan	10.8119114	0.45915
Shapiro-Wilk	0.95960919	0.40675

Autocorrelation

To examine the independence of residuals, we employed the Durbin-Watson test. The resulting statistic was 1.48 (Durbin-Watson statistic = 1.47554081844901), and the p-value was 0.167 (p = 0.167378285591794), suggesting that autocorrelation does not pose a concern for our regression model (Durbin & Watson, 1950).

Homoscedasticity

The Breusch-Pagan test was conducted to verify constant variance across the residuals of the model. The computed statistic stood at 10.81 (Breusch-Pagan statistic = 10.8119113791674), with a p-value of 0.459 (p = 0.459152771343692), indicating homoscedasticity of errors—a condition that our model satisfactorily meets (Breusch & Pagan, 1979).

Multicollinearity

The Variance Inflation Factor (VIF) was calculated to assess multicollinearity among predictors. The VIF scores (see Table 3) revealed that certain variables, such as EC and TAB, had elevated values, signifying potential multicollinearity.

Table 3
Variance Inflation Factors of Variables

Variables	VIF
DCP	8.420819
EC	15.431587
GC	5.24756
GE	11.569566
PMI	13.215659
PSI	7.845508
PT	7.087425
RI	13.029467

RP	12.920838
STB	12.091083
TAB	54.18923

Nonetheless, the Lasso regression inherently addresses this by penalizing the regression coefficients of correlated predictors (James, Witten, Hastie, & Tibshirani, 2013).

Normality of Errors

The Shapiro-Wilk test assessed the normality of the regression residuals. With a W statistic of 0.960 (W = 0.959609186232347) and a p-value of 0.407 (p = 0.406745686493002), the test did not suggest a deviation from normality (Shapiro & Wilk, 1965).

In light of these diagnostic evaluations, the Lasso regression is demonstrated to be a propitious methodological choice. Its intrinsic penalty mechanism not only addresses multicollinearity but also conduces to a model that is parsimonious—eschewing superfluous predictors—without sacrificing the explanatory power needed to illuminate the nexus between regulatory environments and FDI inflows. Therefore, the application of Lasso regression in this study is justified and appropriate, reinforcing the model's capacity to provide insightful and reliable inferences.

Results of Analysis

In the scholarly examination of the determinants of Foreign Direct Investment (FDI) within the SAARC region, our methodological recourse to Lasso regression has facilitated a parsimonious model from a multitude of regulatory variables. The Lasso regression outcomes reveal a discerning narrative about the regulatory factors that stand as significant in influencing normalized FDI inflows (FDI_Norm), as well as those whose influences are rendered non-significant within the model's context.

Table 4
Lasso Regression Results

Variable	Coefficient	Lag_Coefficient
FDI_Norm	0.216929917	0
STB	0	-0.021006711
DCP	0	-0.016809502
GE	0.011974227	0
RP	0	0
GC	0	0
PMI	0	0
PT	0	0
PSI	0	0
TAB	0	0
EC	0	0

	RI	-0.00591	0.00000

Significant Variables and Their Implications

The positive coefficient for normalized FDI ($FDI_{Norm} = 0.216929917$) substantiates the direct and potent influence of FDI inflows in the current period on subsequent FDI inflows, connoting perhaps a momentum effect or a sign of sustained investor confidence (Ayyagari, Demirguc-Kunt, & Maksimovic, 2008). The lagged negative coefficient for dealing with construction permits ($lag\_DCP = -0.016809502$) intriguingly implies that the efficiency or inefficiency in obtaining construction permits in the preceding period inversely impacts future FDI. This could be interpreted as the time lag between regulatory compliance and its tangible effects on investment decisions, where investors may factor past experiences into their future commitments (Klapper, Laeven, & Rajan, 2006).

Conversely, the score for getting electricity ($GE = 0.011974227$) emerges with a relatively modest positive coefficient, reflecting its incremental but affirmative impact on FDI inflows. The accessibility and reliability of electricity supply are often pivotal concerns for investors, with its adequacy being a determinant for operational viability and hence investment attractiveness (World Bank, 2020).

The negative coefficient for resolving insolvency ($RI = -0.005908675$) suggests a somewhat counterintuitive relationship; a higher efficiency in resolving insolvency correlates with a reduction in FDI inflows. This may reflect a more complex investment climate where efficient insolvency processes may also imply a higher frequency of business failures, potentially deterring investment (Djankov, McLiesh, & Ramalho, 2006).

Non-significant Variables: Contextualization:

A host of regulatory factors, including starting a business (STB), enforcing contracts (EC), and trading across borders (TAB), amongst others, manifest as non-significant within the Lasso model—coefficients driven to zero. This outcome does not necessarily invalidate their theoretical or practical importance but suggests that within the model's scope and the penalization parameter applied, their isolated effects on FDI are subsumed or overshadowed by the effects of other variables. It is plausible that the aggregated regulatory environment or other macroeconomic variables not included in the model play a more substantial role (Busse & Groizard, 2008).

The absence of significance in the lagged coefficients for most variables further indicates that the immediate past performance of regulatory measures may not have a lingering effect on future FDI, contrary to what might be hypothesized. This could be reflective of a dynamic investment landscape where past regulatory efficiencies or inefficiencies are either rapidly rectified or superseded by other factors in investors' decision-making processes (Asiedu, 2006).

Synthesis and Logical Inference

The Lasso regression results, grounded in robust statistical diagnostics, provide a compelling synthesis of the regulatory determinants of FDI. The significant variables suggest a nuanced interplay between regulatory efficiency and investor behavior, where immediacy and past experiences shape future investment inflows. Meanwhile, the non-significant variables, reduced to zero coefficients, invite a re-examination of the broader regulatory framework and its interaction with other macroeconomic and institutional factors that influence FDI.

The insights garnered from the Lasso regression analysis bear significant implications for policymakers in the SAARC region. The emphasis on the immediate past efficiencies in dealing with construction permits

and the current period's FDI inflows underscores the criticality of maintaining a conducive regulatory environment for sustained investment growth. Simultaneously, the findings advocate for a holistic perspective on the regulatory ecosystem, recognizing that the interdependencies between different regulatory domains and the broader economic context are pivotal in shaping FDI dynamics.

In conclusion, the Lasso regression model serves not merely as an econometric tool but as an analytical prism through which the complex tapestry of regulatory influences on FDI can be discerned with greater clarity and specificity. This study's findings contribute to the burgeoning literature on investment climates, offering empirical insights that resonate with the theoretical underpinnings of regulatory impact on economic development.

Limitations of the Study

Within the ambit of this research, several methodological and contextual constraints necessitate circumspection in the interpretation and extrapolation of its findings. The limitations, while not detracting from the study's substantive contributions, provide a scope for further scholarly inquiry.

The study's temporal framework is confined to data from the DB 17-21 dataset, spanning merely five years from 2016 to 2021. This window, while offering a snapshot of regulatory impacts on FDI, may not capture the longitudinal effects of regulatory changes on investment trends. The temporal breadth of the data, therefore, presents a caveat to the depth of historical analysis and the robustness of inferences drawn about investment trajectories over a more extended period.

A geographical delimitation is also apparent in the study's focus on the SAARC region. While this regional concentration allows for an exploration tailored to the socio-economic fabric of these countries, it also restricts the universality of the study's applicability. The unique developmental, regulatory, and investment climates of SAARC countries mean that the findings are not necessarily generalizable to other regional blocs or economic conglomerates.

Moreover, the study is conducted against the backdrop of the World Bank's cessation of the Doing Business Report, attributed to surfaced irregularities in some data points. This discontinuation casts a shadow of uncertainty over the unblemished accuracy of the DB 17-21 data. While the study utilizes the available data with academic rigor, the potential for as-yet-unidentified discrepancies remains a limitation that must be acknowledged, underscoring the necessity for a cautious approach to the data's interpretative application.

Finally, the Lasso regression, though an advanced statistical approach celebrated for its precision in variable selection and multicollinearity circumvention, is not without its limitations. The Lasso's proclivity for parsimony, while often an asset, can result in the attenuation or outright exclusion of variables that may hold significance in a less constrained regression framework. Furthermore, the Lasso's penalty mechanism may mask the interplay of regulatory factors whose collective influence on FDI inflows is more nuanced than can be captured in a singular coefficient.

These limitations, integral to the study's structure, invite a humble recognition of its bounds. They also articulate the contours of a research frontier yet to be charted, beckoning future investigations to broaden the empirical vista, deepen the analytical corpus, and enrich the dialogue on the interdependencies of regulation, investment, and economic development.

Conclusion and Recommendations

The empirical analysis, underpinned by the Lasso regression, reveals a complex interplay between regulatory factors and FDI inflows. It is concluded that the regulatory environment, particularly the aspects

of construction permitting and electricity provisioning, plays a pivotal role in influencing FDI. The study's finding that the efficiency of construction permit processes and the reliability of electricity have notable impacts on FDI suggests that these factors should be key focal points for reform and improvement.

Additionally, the lack of significant influence of certain regulatory areas on FDI inflows does not diminish their potential impact but rather indicates a more intricate relationship with FDI that may be contingent on a broader array of factors. This points to the nuanced nature of FDI determinants and the need for comprehensive policy approaches that consider the cumulative effects of the regulatory environment.

Recommendations

There is a clear imperative for SAARC nations to initiate and sustain regulatory reforms, particularly targeting areas identified as impactful on FDI, such as the processes surrounding construction permits and electricity access.

The study advocates for a systemic review of the regulatory procedures linked to starting a business and trading across borders, despite their non-significant coefficients, to uncover potential areas for improvement that could collectively enhance the business climate.

Future research directions should encompass a more extended time frame and a broader economic context to capture the dynamic nature of FDI flows and the evolving landscape of regulatory impacts.

The adoption of a diversified methodological approach in subsequent studies can provide a more comprehensive understanding of the investment climate, ideally incorporating alternative models that account for a broader set of macroeconomic variables.

Following the cessation of the Doing Business Report, the development of alternative indices is recommended to ensure the continued rigorous assessment of the investment climate and to validate the robustness of future research findings.

The conclusions and recommendations distilled from this research are envisioned to guide effective policy formulation aimed at enhancing the investment landscape of the SAARC region. As the study delineates, the path to bolstering FDI is multifaceted, necessitating not only regulatory finesse but also strategic foresight and adaptability to the complexities of the global investment milieu.

References

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: The role of local financial markets. *Journal of International Economics, 64*(1), 89-112.

Agarwal, J. P. (2002). Determinants of Foreign Direct Investment: A Survey. *Weltwirtschaftliches Archiv, 138*(4), 689-722.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. *The Quarterly Journal of Economics, 117*(1), 1-37.

World Bank. (2021). World Bank Group to Discontinue Doing Business Report. Retrieved from https://www.worldbank.org/en/news/statement/2021/09/16/world-bank-group-to-discontinue-doing-business-report

Romero, A. (2021). Doing Business Report 2021: The End of an Era in World Bank's Benchmarking. *International Banker*.

Pandya, S., & Sisombat, S. (2017). Political economy of foreign direct investment: Globalized production in the twenty-first century. *Annual Review of Political Science, 20,* 455-475.

Sahoo, D., & Dash, R. K. (2009). Economic growth in South Asia: Role of infrastructure. *The Journal of International Trade & Economic Development, 18*(4), 517-550.

Busse, M., & Groizard, J. L. (2008). Foreign direct investment, regulations, and growth. *World Economy, 31(7*), 861-886.

Morris, S., & Aziz, J. (2011). The Growth Prospects of the Asian Economies. *Oxford Review of Economic Policy, 27*(2), 344-365.

Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: is Africa different? *World Development, 30*(1), 107-119.

Blonigen, B. A., & Piger, J. (2014). Determinants of foreign direct investment. *Canadian Journal of Economics, 47*(3), 775-812.

Demirbag, M., Tatoglu, E., & Glaister, K. W. (2010). Institutional and transaction cost influences on MNEs' ownership strategies of their overseas operations. *International Business Review, 19(*3), 227-245.

Henisz, W. J. (2000). The institutional environment for economic growth. *Economics & Politics, 12(*1), 1-31.

Klapper, L., Laeven, L., & Rajan, R. (2006). Entry regulation as a barrier to entrepreneurship. *Journal of Financial Economics, 82(3)*, 591-629.

World Bank. (2020). Doing Business 2020. World Bank Publications.

Friedman, J., Hastie, T., & Tibshirani, R. (2010). Regularization Paths for Generalized Linear Models via Coordinate Descent. *Journal of Statistical Software, 33(*1), 1-22.

Hastie, T., Tibshirani, R., & Friedman, J. (2009). The Elements of Statistical Learning: Data Mining, Inference, and Prediction. Springer Series in Statistics.

R Core Team. (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing.

Tibshirani, R. (1996). Regression Shrinkage and Selection Via the Lasso. *Journal of the Royal Statistical Society. Series B (Methodological), 58*(1), 267-288.

Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica, 47(*5), 1287-1294.

Chatterjee, S., & Hadi, A. S. (2015). Regression Analysis by Example. John Wiley & Sons.

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika, 52*(3-4), 591-611.

James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). An Introduction to Statistical Learning. New York: Springer.