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INSTITUTIONS MATTER: THE ROLE OF INSTITUTIONAL QUALITY IN THE EFFECTIVENESS OF NATURAL RESOURCE FUNDS¹

Summary

Purpose | This study evaluates the role of institutional quality in enhancing the effectiveness of Natural Resource Funds (NRF), with a particular focus on their capacity to mitigate the resource curse and fulfil stabilising, investment, and savings functions.

Research method | The analysis covers 28 resource-rich countries and 27 NRF over 2000–2023. It draws on the results of a previously conducted Systematic Literature Review (SLR), complemented by panel regression models assessing the effects of different NRF types, institutional indicators, and their interactions on government expenditure volatility, investment levels, and the accumulation of savings.

Results | The findings show that institutional quality is a decisive factor shaping NRF performance. Across functions, positive fund effects emerge primarily in interaction with institutional indicators, with control of corruption and government effectiveness exerting the strongest and most stable influence. NRF impacts are most visible within two to three years, weakening at longer lags. Savings funds (SFG) display the most durable effects, surpassing stabilisation (SF) and investment funds (IF). In the stabilising function, significant results appear mainly through fund-institution interactions, with SFG increasingly assuming roles traditionally attributed to SF. For investment, NRF stimulate investment primarily in high-quality institutional environments, with particularly strong responses for SFG. Regarding the savings function, domestic savings

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yield inconclusive results, while analyses based on foreign assets indicate that SFG – and especially IF – contribute to the accumulation of external wealth, confirming the savings role.

Originality/value/implications/recommendations | The study demonstrates that institutional quality is not a complementary factor, but a key enabling condition for NRF effectiveness. It highlights the importance of fund typologies, the broader functional scope of SFG, and the need for improved metrics - especially in evaluating savings and economic diversification functions.

Keywords: natural resource funds, resource curse, economic development, governance, institutional quality

JEL classification: F21, O11, O23, Q32, Q38

1. Introduction

This study examines the role of institutional quality in enhancing the effectiveness of natural resource funds (NRF) in mitigating the resource curse (RC). The topic remains highly relevant both for resource-rich countries (RRC), many of which continue to experience its adverse effects, and for the stability of the global financial system. NRF now account for more than half of all Sovereign Wealth Funds, whose combined assets exceed USD 14.987 trillion [SWFI, n.d.], making their performance significant not only domestically, but also internationally.

In studies evaluating the effectiveness of NRF in mitigating the RC, the importance of institutional quality is frequently emphasised [e.g. Sugawara, 2014; Taguchi, Ganbayar, 2022]. Yet empirical findings remain inconclusive and a call for further investigation.

In this study, the effectiveness of NRF is understood as their ability to fulfil three core economic functions: stabilisation – reducing the volatility of government expenditure; investment – supporting capital formation; and savings – enabling the accumulation of financial assets. This functional perspective allows for a consistent operationalisation of effectiveness in the empirical analysis.

This study adopts a macroeconomic perspective and follows the typology of NRF into stabilisation funds (SF), investment funds (IF), and savings funds (SFG), the latter understood as equivalent to funds for future generations [Dymitrowska, 2024]. Although NRF were first introduced in the 1970s, recent years have seen a rapid expansion of IF and SFG, including among emerging and developing economies [Dymitrowska, 2020]. For this reason, accounting for fund typology and the functions assigned to each category is particularly important.

The main objective of this study is to assess whether and to what extent institutional quality conditions the effectiveness of Natural Resource Funds. To address this objective, the study is guided by the following research question: to what extent does institutional quality enhance the effectiveness of different types of NRF? Additionally, the analysis tests the following hypothesis:

H1: The effectiveness of NRF is conditional upon the level of institutional quality.

In this study, RRC is defined as a country that specialises in the extraction and export of natural resources or whose economy is fundamentally resource-based. Consistent with the literature [Stevens, 2003; Auty, 2004], the RC is assumed to occur only in such economies.

The study draws on the results of a previously conducted Systematic Literature Review (SLR) [Dymitrowska, 2025], complemented by a structured identification of relevant studies, and combines them with a panel regression framework capturing both the direct effects of NRF and their interactions with institutional indicators. Multiple lags are included to reflect the time-dependent nature of fund impact. The analysis covers 28 RRC and 27 NRF over 2000–2023 and examines government expenditure volatility, investment levels, domestic savings, and foreign assets. This approach enables a clear assessment of how institutional quality shapes the stabilising, investment, and savings functions of different NRF types.

The paper consists of a literature review, research methodology, and empirical results with discussion, preceded by this introduction and followed by a conclusion. The analysis draws on Scopus and Google Scholar databases, as well as materials from major international institutions, including the World Bank (WB), the Natural Resource Governance Institute (NRGI), the International Forum of Sovereign Wealth Funds (IFSFWF), and the Sovereign Wealth Fund Institute (SWFI).

2. Literature review

Within the perspective of new institutional economics, strong institutions – characterised by transparency, accountability, the rule of law, and sound fiscal governance – are recognised as essential drivers of sustainable economic development [North, 1990]. The importance of institutional quality is also emphasised when assessing the effectiveness of NRF in counteracting the RC [Sugawara, 2014; Taguchi, Ganbayar, 2022]. Some scholars argue that these funds can operate effectively only when supported by a robust institutional foundation [Ossowski et al., 2008]. Overall, the institutional dimension plays a crucial role in explaining the mechanisms behind the RC [Stevens, 2003; Auty, 2004; Tatar et al., 2024].

To provide a structured overview of the existing literature, the author draws on the results of a previous study that employed a Systematic Literature Review (SLR) [Dymitrowska, 2025], complemented by additional database searches to identify the most relevant contributions. Figure 1 presents the studies identified as central to the analysis. They are classified by study type (qualitative/quantitative), country coverage, publication year, resource-fund type (SF, IF, SFG), and outcome (effective, ineffective, no effect) (Figure 1).

The reviewed studies confirm that the topic remains highly relevant and continues to attract both qualitative and empirical research. However, most analyses focus on stabilisation funds, while investment and savings funds remain relatively underexplored. This imbalance points to a research gap concerning the effectiveness of IF and SFG, particularly in relation to their broader functional roles.

In preparing the research sample for this study, particular attention was given to the growing importance of these fund types. Over the past decade, many countries have restructured their NRF frameworks – shifting from traditional stabilisation models to savings-oriented ones (e.g. Iran), splitting funds into separate entities (e.g. Chile), or introducing multiple funds (e.g. Nigeria). This evolution further justifies the need to explicitly account for fund typology in empirical analysis.

FIGURE 1

Literature review

NATURAL RESOURCE FUNDS				
effective		SF	IF	SFG
		Tsalik [2003] (2); Bacon, Tordo [2006] (15); Hjort [2006] (1); Gould [2010] (4); Dymitrowska [2024]		
		Bagattini [2011] (12)		
		Le Borgne, Medas [2007] (9); Usui [2007] (2)	Kalyuzhnova [2006] (2);	
		Ossowski et al. [2008] (21); Sugawara [2014] (68); Koh [2016] (42); Taguchi, Ganbayar [2022] (41); Çiçekçi, Gaygisiz [2023] (32)	Taguchi, Ganbayar [2022] (41)	
ineffective, lack of effect		Torvik [2018]		
				Taguchi, Ganbayar [2022] (41)
GOVERNANCE, INSTITUTIONAL QUALITY				

* Empirical studies are shaded, and the number of countries analysed is shown in italics within parentheses after each study.

Source: own elaboration.

The studies presented in Figure 1 consistently highlight the importance of institutional quality for fund performance. For instance, Taguchi and Ganbayar [2022] show that stabilisation funds reduce expenditure volatility, with significantly stronger effects under high-quality governance. Similarly, Sugawara [2014] emphasises the role of political institutions and fiscal rules, while Çiçekçi and Gaygisiz [2023] underline the importance of institutional capacity for effective fiscal policy. Other contributions [Bacon, Tordo, 2006; Hjort, 2006; Le Borgne, Medas, 2007; Dymitrowska, 2024] highlight further stress governance-related constraints in resource-rich economies, and Tsalik [2003], Gould [2010], and Kalyuzhnova [2006] point to transparency as a key determinant of fund effectiveness.

At the same time, the empirical evidence remains mixed. Differences in results can largely be attributed to variations in methodological approaches, sample selection, outcome variables, and assumptions regarding institutional conditions. Some authors, such as Torvik [2018], question the effectiveness of NRF altogether, while evidence on the performance of SFG remains limited and inconclusive. These inconsistencies further confirm the need for a more integrated and comparative empirical assessment.

3. Methods

3.1. Research sample

Based on a detailed critical literature review, the study adopted the following research assumptions.

- An RRC was defined as a country that, in over half of the study period, recorded extractive revenues above 25% of GDP or natural resources exceeding 25% of exports – a commonly used threshold for identifying resource-export-dependent economies [Stevens, 2003; Dymitrowska, 2020, 2024, 2025].
- The analysis covered strategic commodities grouped into fuel resources (oil, natural gas, coal) and mineral resources (tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, phosphate), following the WB database classification used for most variables.
- The research period spans 24 years, starting in 2000 – a turning point in NRF evolution reflecting growing global attention to IF and SFG – and ending in 2023, ensuring data reliability.

Using indicators of oil, natural gas, coal, and mineral rents (% GDP), the total natural resource rent index was calculated. Similarly, fuel and ores and metals exports (% of merchandise exports) were used to compute total natural resource exports. All indicators were sourced from the WB's World Development Indicators (WDI) database. Based on these metrics, 49 RRC were identified and classified by resource type.

Further, using data from the NRGI, IFSWF, SWFI, and official fund's websites, 43 NRF operating within these RRC were identified and categorised as SF, IF, or SFG.

The next stage of the study involved collecting data for the panel regression analysis. Due to substantial data gaps for some countries, the final research sample ensuring analytical clarity and reliability includes 28 RRC and 27 NRF, with funds operating in 19 of these countries (Figure 2).

FIGURE 2

Research sample

MINERALS (5)

CHILE – *Social and Economic Stabilization Fund 1985(2006)/SF; Pension Reserve Fund 2006/SFG*; **ARMENIA** – *none*; **NAMIBIA** – *none*; **MAURITANIA** – *National Fund for Hydro-carbon Reserve 2006/SF*; **RWANDA** – *none*

FUELS (13)

BRUNEI DARUSSALAM – *Brunei Investment Agency 1983/SF, IF, SFG*; **NORWAY** – *Government Pension Fund Global 1990/SFG*; **OMAN** – *State General Reserve Fund 1980–2019/SF; Oman Investment Fund 2006–2019/IF; Oman Investment Authority 2020: Future Generations Fund SFG, National Development Fund IF*; **RUSSIAN FEDERATION** – *Russia's Stabilization Fund 2004–2007/SF; Reserve Fund 2008–2018/SF; The National Wealth Fund 2008/SF, IF, SFG*; **SAUDI ARABIA** – *Public Investment Fund 1971/IF, SFG*; **UNITED ARAB EMIRATES** – *Abu Dhabi Investment Authority 1976/IF, SFG; Mubadala Investment Company 2002/IF, SFG*; **ALGERIA** – *Revenue Regulation Fund 2000/SF*; **COLOMBIA** – *Colombia Savings and Stabilization Fund 2012/SF*; **ECUADOR** – *none*; **GABON** – *Sovereign Wealth Fund of the Gabonese Republic 1998(2012)/SFG*; **IRAN, ISLAMIC REP.** – *Oil Stabilization Fund 2000–2010/SF; National Development Fund of Iran 2011/IF*; **ANGOLA** – *Fundo Soberano de Angola 2012/SFG*; **CONGO, REP.** – *none*

MINERALS AND FUELS (10)

BAHRAIN – *Future Generations Reserve Fund 2006/SFG*; **CANADA** – *Alberta Heritage Savings Trust Fund 1976/SFG*; **INDONESIA** – *none*; **KAZAKHSTAN** – *National Fund of the Republic of Kazakhstan 2000/SF; National Investment Corporation 2012/SFG*; **SOUTH AFRICA** – *none*; **BOLIVIA** – *none*; **CAMEROON** – *Caisse de Stabilisation des Prix des Hydrocarbures 1974/SF*; **EGYPT, ARAB REP.** – *none*; **PERU** – *Fiscal Stabilization Fund 1999/SF*; **NIGER** – *none*

* Countries were grouped by economic development level per WB classification.

Source: own elaboration.

3.2. Variables, data collection, and research design

Based on a detailed literature review, it was concluded that an effective fund should fulfil three key functions in counteracting the RC: stabilisation, investment, and savings [Dymitrowska, 2020, 2025; Taguchi, Ganbayar, 2022]. It is also essential to distinguish fund types. SF serve purely a stabilising role, while IF and SFG – whose popularity has grown substantially in recent years – are intended to deliver investment and savings functions directly and stabilisation indirectly.

Based on earlier empirical work [Shabsigh, Ilahi, 2007; Ossowski et al., 2008; Bagattini, 2011; Sugawara, 2014; Taguchi, Ganbayar, 2022], selected indicators were used to assess fund effectiveness. After reviewing data quality and running preliminary tests, only WB indicators were retained to ensure consistency and strengthen the reliability of the results. The analysis draws on data from the WB's World Development Indicators (WDI) [www 1s] and Worldwide Governance Indicators (WGI) [www 2].

1. To assess the stabilisation function, the most commonly used measure – government expenditure volatility – was applied, using general government final consumption expenditure per capita (constant 2015 USD). Given the lack of consensus in the literature, two approaches were used to measure volatility: following Sugawara [2014], applies a five-year moving standard deviation of the annual growth rate (*Spend_vol*)² and based on Taguchi and Ganbayar [2022], calculates the absolute deviation of the variable from its period average (*Spend_vol1*).
2. To assess the investment function, domestic investment was measured using gross fixed capital formation per capita (constant 2015 US\$) (*Invest*), following Taguchi and Ganbayar [2022].
3. Using the same methodological framework, the national savings level served to assess the savings function. Because the authors' results in this category proved unreliable, data from the IMF's World Economic Outlook Database were replaced with the WB's WDI, specifically the gross savings (% of GDP) indicator (*Savings*). The same database was also applied for the investment indicator, ensuring data consistency across variables. The use of an alternative data source represents a novel contribution compared to previous analyses.

² Indicator names in italics denote the variable labels used in STATA.

4. Additionally, the study introduced an extra indicator to evaluate the savings function – net foreign assets (% of GDP) (FAssets) – which had not been used in earlier research. IF and SF often contribute to the accumulation of foreign assets, forming a classical savings transmission channel.

The study focuses on several key independent variables. One of the main variables examines the presence of NRF in each country. Based on the author's classification (Figure 2), a general dummy variable was created, assigned a value of 1 if an NRF operates in a given country and 0 otherwise (*Fund*). To distinguish between different fund types, three additional dummy variables were constructed for SF (*StabFund*), IF (*InvFund*), and SFG (*SavFund*), each coded 1 when the respective fund exists.

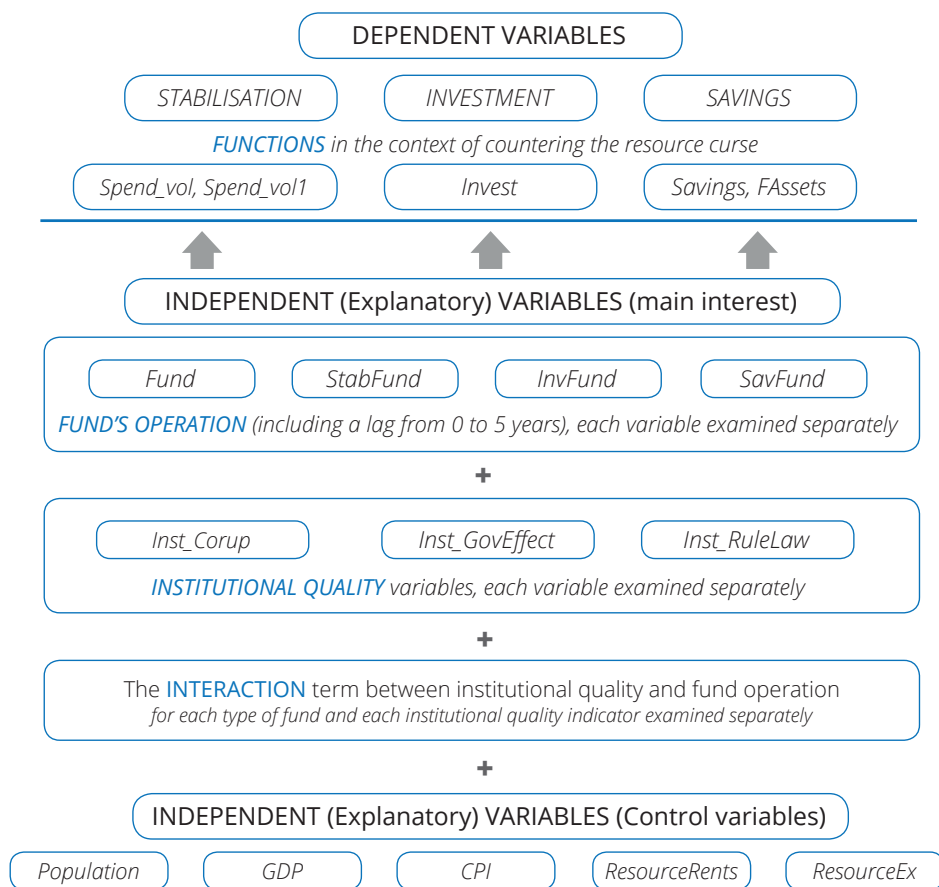
Following Sugawara (2014), the analysis assumes that a fund becomes operational one year after its creation – for example, a fund established in 2000 is coded as 0 in that year and 1 from 2001 onward. Unlike earlier studies that introduced longer lags of five [Sugawara, 2014; Taguchi, Ganbayar, 2022] or ten years [Ouoba, 2016], this study employs a stepwise approach, testing models with lags from one to five years to identify when fund effects begin to emerge. The lag length was limited to five years to maintain statistical reliability and explanatory power over the 24-year period.

Another group of key independent variables consists of institutional quality measures. Three WGI indicators were used: control of corruption (*Inst_Corup*), government effectiveness (*Inst_GovEffect*), and rule of law (*Inst_RuleLaw*). These measures capture core institutional dimensions relevant to NRF governance. Each indicator was analysed separately to avoid multicollinearity given their high correlation. All institutional variables were lagged by one year to account for delayed effects on fund performance.

The presence of a fund and the level of institutional quality were analysed together with the key variable – their interaction term. This allows a direct test of the main research objective: assessing how institutional quality enhances NRF effectiveness, particularly in mitigating the RC. The detailed research design is shown in Figure 3.

FIGURE 3

Research design



Source: own elaboration.

The analysis also includes several control variables:

- population – population, total (*Population*);
- economic growth – GDP *per capita*, PPP (constant 2021 international \$) (*GDP*);
- inflation – inflation, consumer prices (annual %) (*CPI*);
- resource dependence – resource rents (sum of oil rents, natural gas rents, coal rents, mineral rents (all in % of GDP) (*ResourceRents*) and exports (sum of fuel exports and ores and metals exports (all in % of merchandise exports) (*ResourceEx*);
- and the previously discussed institutional factors.

Population and GDP were included as standard controls to account for differences in country size and economic capacity. Inflation captures macroeconomic stability and is particularly relevant in RRC. To capture resource dependence, two additional variables were included.

To address heteroskedasticity, non-linearity, and improve estimate stability, several control variables population, GDP, CPI, resource rents, resource exports, and institutional indicators – were lagged. This is economically justified: GDP influences investment with delay, inflation transmits gradually, and resource revenues are typically allocated in later periods. Institutional changes likewise take time to affect outcomes. Population was log-transformed to enhance data quality and model fit. A correlation matrix and descriptive statistics were prepared at the initial stage.

3.3. Model specification and estimation method

The empirical specification used in this study is formulated as follows:

$$\begin{aligned} effect_{i,t} = & a0 + a1 fund_{i,t-k} + a2 inst_{i,t-1} + a3 fund_{i,t-k} inst_{i,t-1} + \\ & + a4 X_{i,t} + f_i + f_t + \varepsilon_{i,t}, \end{aligned}$$

where:

- i – sample country;
- t – sample year;
- $effect_{i,t}$ – indicators assessing fund performance in its stabilising, investment, and savings functions;
- $fund_{i,t-k}$ – shows funds' operation and comprises the funds (lagged by $k = 0$ to 5 years): NRF, any kind, SF, IF, SFG;
- $inst_{i,t-1}$ – represents institutional quality variables;
- $fund_{i,t-k} inst_{i,t-1}$ – the interaction term of institutional quality and funds' operation;
- $X_{i,t}$ – denotes the control variables;
- f_i – time-invariant country-specific fixed effects;
- f_t – country invariant time-specific fixed effects;
- $\varepsilon_{i,t}$ – residual error term;
- $a0...4$ – estimated coefficients.

The empirical specification is estimated using a fixed-effects approach. The use of fixed-effects estimation is motivated by the need to control for unobserved, time-invariant heterogeneity across countries, such as structural characteristics of resource dependence, institutional legacy, or governance frameworks, which may affect both the presence of NRF and macroeconomic outcomes. By absorbing these effects, the model reduces the risk of biased estimates arising from omitted variables.

Potential endogeneity issues, including reverse causality between institutional quality and economic performance or the non-random establishment of NRF, cannot be entirely excluded. However, the applied specification mitigates these concerns by incorporating lagged variables and interaction terms, which allow for a more consistent identification of temporal relationships between funds, institutions, and outcomes. This approach follows standard practice in empirical studies on institutions and macroeconomic performance.

The estimation employs country and time-fixed effects, denoted as f_i and f_t . Although the Hausman test is commonly used to choose between fixed and random effects, the fixed-effects specification is adopted in this study due to its suitability for controlling unobserved heterogeneity and its widespread application in cross-country analyses of institutional and macroeconomic relationships. Robust standard errors address heteroskedasticity. The models are estimated using OLS, and all computations were carried out in StataSE 18.

4. Results

Table 1 provides a synthetic overview of the main results obtained from the panel regression models, focusing on the role of institutional quality in shaping the effectiveness of Natural Resource Funds across their core functions.

The analysis yields several central conclusions regarding the role of institutional quality in the effectiveness of NRF. The results consistently show that institutional conditions are not merely an accompanying factor but a key mechanism shaping fund performance.

First, higher institutional quality enhances the effectiveness of NRF across nearly all stages of the analysis. In some specifications, the magnitude of the institutional effect is up to three times stronger; in others, it remains positive but more modest. In many cases, NRF become effective only when interacted with institutional indicators, indicating that the institutional environment is a necessary complement to fund design. These findings align with Sugawara's [2014], Çiçekçi and Gaygisiz's [2023] and Taguchi and Ganbayar's [2022] earlier results and reinforce the argument by Ossowski et al. (2008) that, in the absence of strong institutional quality, the introduction of NRF is unlikely to generate the expected outcomes.

The results also highlight the importance of temporal dynamics and the structural characteristics of the funds included in the sample. The positive effect of NRF is most evident after two to three years of operation. In several specifications, the effect loses statistical significance after four years, which calls for further examination. This pattern may reflect the study's design and the relatively young age of many IF and SFG. When a four- to five-year lag is applied, recently created funds drop out of the sample, substantially affecting the estimates. Despite this limitation, the findings indicate that the effect emerges within three years – earlier than reported by Sugawara [2014] (five years) and Ouoba [2016] (ten years) (see: Table 1).

The results also show that control of corruption and government effectiveness are the institutional factors most consistently strengthening NRF performance. Their influence is stable across specifications. Future research could assess whether other institutional dimensions play a comparable role or whether a composite index would better capture the institutional conditions relevant for NRF outcomes.

The analysis also reveals differentiated effects across fund types, supporting the argument that NRF typologies matter for understanding their performance. As noted by Taguchi and Ganbayar [2022], fund effectiveness depends on the specific functions assigned to each category. This study, however, shows that SFG operate with a broader functional scope than the savings role highlighted in the literature. Beyond accumulating revenue from resource sales, SFG also perform investment functions and, indirectly, stabilisation functions. An important dimension not covered in this study is the role of NRF in supporting economic diversification. Owing to its distinct nature, this function requires a separate and more detailed investigation, which the author intends to pursue in future research.

TABLE 1

Summary of panel regression results: effects of NRF and institutional quality

Function	Variable	NRF/Fund-type effect	Institutional effect	Interaction effect	Lag pattern	Key interpretation
Stabilisation	Spend_vol	NRF, SF: not significant; SFG: limited direct effect	Weak/variable	Strong negative (especially SFG)	2–3 years (weakens later)	NRF stabilisation occurs mainly through interaction with institutional quality; SFG play an increasing role
Investment	Invest	NRF, IF, SFG: positive (conditional); SF: not significant	Positive	Strong positive	Up to 4 years	NRF increase investment primarily in high-quality institutional environments; SFG show the most durable effects
Savings	Savings	NRF: not significant; IF: negative	Positive	Mixed	No clear pattern	Domestic savings are not a reliable measure of NRF effectiveness; IF may reduce domestic savings
	FAssets	IF, SFG: positive	Positive	Strong positive (strongest for IF + gov effectiveness)	Persistent	NRF contribute to accumulation of foreign assets, confirming their savings function

Source: own elaboration based on regression results.

The findings further indicate that SFG constitute the most stable and long-term channel of impact. In contrast, the effects of SF and IF are shorter-lived and tend to diminish more quickly, suggesting that savings-oriented mechanisms provide a more durable contribution to mitigating the RC.

For the stabilising function, the analysis shows no statistically significant effect for NRF overall or for SF on government expenditure volatility. However, the negative and relatively large coefficients – especially in interaction terms with institutional indicators, at times nearly three times larger – underscore the key role of institutional quality in enabling NRF to stabilise public finances.

SFG show a statistically significant effect both independently and through interaction with institutional variables, with the interaction being stronger. This effect weakens or disappears after four to five years, likely for previously discussed reasons. The results highlight the importance of institutional quality and the rising role of SFG, which seem to take over part of the stabilising function traditionally assigned to SF.

For the investment function, the results show that in countries with strong institutions, NRF significantly boost investment. Institutional quality is crucial: the strongest and statistically significant interactions occur at short lags, up to four years. NRF overall, as well as IF and SFG, follow the same pattern – stronger institutions enable faster and more effective translation of fund resources into investment. SF are the only category with no significant impact, consistent with their primary role.

Control of corruption shows the most consistent and robust interaction effects across all fund types, with positive and often significant coefficients that persist even at longer lags.

Among fund categories, SFG again stand out as the only type generating a sustained and relatively durable investment effect, visible even with lags of up to five years.

For the savings function, the analysis yields no statistically significant effects for gross savings. Taguchi and Ganbayar [2022], using the same indicator, also

reported inconclusive results. Despite differences in dataset, period, and sample, this study likewise finds no evidence that NRF increase domestic savings. This suggests that gross savings may be an unsuitable measure, especially since IF and SFG often invest abroad. Future research would benefit from indicators better suited to their international investment strategies.

An interesting pattern emerges for IF, which consistently reduce domestic savings, with the effect stronger in high-institutional-quality environments. This suggests that in well-governed countries, IF resources are mobilised more effectively into the economy rather than remaining in the savings sphere. Institutional indicators themselves, however, tend to increase domestic savings.

To assess the savings function more accurately, the analysis also considers net foreign assets. In this case, clear effects appear for IF and SFG: both the funds alone and their interaction with institutional quality yield positive and meaningful estimates. The strongest result is observed for IF interacting with government effectiveness. This indicates that SFG – and especially IF – contribute to the accumulation of foreign assets, providing evidence that these funds do fulfil a savings role.

5. Conclusions

This study assesses the role of institutional quality in shaping the effectiveness of NRF and their capacity to mitigate the resource curse. The results consistently show that institutional conditions are a central channel through which NRF influence macroeconomic outcomes. Stronger institutions reinforce fund performance across stabilising, investment, and savings functions, and in many cases the positive effects of NRF emerge primarily through interaction with institutional indicators. Control of corruption and government effectiveness are identified as the most influential dimensions, producing the largest and most stable effects.

Temporal dynamics also play an important role: NRF effects are most visible within two to three years, while longer lags weaken statistical significance, partly due to the relatively short operational history of many funds. Among

fund types, SFG display the most durable impact, outperforming SF and IF in terms of persistence.

Functional differences across fund types further highlight the importance of NRF typologies. The findings confirm the relevance of assigned fund functions, while also showing that SFG operate with a broader scope than the purely savings role typically attributed to them. In the stabilising function, significant effects arise mainly through interaction with institutional factors, with SFG increasingly assuming roles traditionally associated with SF. In the investment function, NRF stimulate investment primarily in high-institutional-quality environments, with particularly strong interaction effects and sustained responses in the case of SFG. The analysis of the savings function highlights the limitations of domestic savings as an indicator, while results based on foreign assets show that SFG – and especially IF – contribute meaningfully to the accumulation of external wealth.

The findings suggest that institutional quality is not an auxiliary feature, but a key enabling condition for NRF effectiveness. These results provide support for the proposed hypothesis that the effectiveness of NRF is conditional upon the level of institutional quality. At the same time, the results should be interpreted with caution, given potential data limitations, the relatively short time horizon for some funds, and the sensitivity of estimates to lag structure.

Overall, the study highlights the importance of institutional conditions and fund design in shaping NRF performance. It also points to the need for further research on the institutional mechanisms underlying fund effectiveness, including the role of NRF in economic diversification, which requires dedicated analysis.

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