



Natural Resource Funds and Their Stabilization Function: Methodological- -Empirical Foundations

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Abstract

Motivation: Research on the stabilization function of natural resource funds (NRF) is extensive but fragmented, with diverse samples, indicators, and methods limiting comparability.

A systematic synthesis and transparent research framework are needed to enable robust empirical testing.

Aim: This study aims to build a comprehensive methodological-empirical foundation for analyzing the stabilization function of NRF in counteracting the resource curse (RC). It does so by systematically reviewing existing empirical research, assessing prior methodologies and indicators, and constructing a transparent research sample of resource-rich economies and their resource funds.

Results: The study employs the Systematic Literature Review (SLR) to synthesize quantitative and qualitative research on the stabilization function of NRF, with attention to research samples, methods, and macroeconomic indicators. Based on the literature on the RC, 49 resource-rich economies were identified and classified by resource type and level of development. Within this group, 43 NRF were examined in terms of type, investment strategies, and compliance with the Santiago Principles, covering the period 2000–2023. The findings pro-

vide a transparent and replicable research sample and consolidate dispersed methodological evidence, offering a robust empirical foundation for subsequent econometric analysis.

Keywords: natural resource funds, stabilization, resource curse, economic development, resource rich countries

JEL: F21, O11, O23, Q32, Q38

1. Introduction

In the 1970s, many governments in resource-rich countries introduced a policy instrument designed to counteract the RC – the paradox of slower economic development in resource-abundant economies compared to those with limited natural endowments (Dymitrowska, 2023). This instrument took the form of natural resource funds (NRF)¹, established primarily to stabilize domestic economies heavily dependent on resource exports and to shield them from fluctuations in global commodity markets.

Over time, the role of these funds evolved significantly. Today, they are created not only to fulfill stabilization objectives but also to serve investment, savings, and diversification purposes. The design, management, and objectives of NRF have become increasingly sophisticated, with a growing number of such funds established in developing and emerging economies. Given the persistent volatility of commodity prices, it remains essential to examine whether NRF – considering their varying types and structures – continue to perform their stabilization function effectively.

Scholarly opinions on this issue remain divided (e.g., Bagattini, 2011; Ouoba, 2020; Sugawara, 2014; Taguchi & Ganbayar, 2022). Existing research is often fragmented, relying on diverse samples, indicators, and methodologies that hinder comparability. Moreover, empirical evidence remains limited. Due to the multidimensional and complex nature of the phenomenon, there is a clear need for systematic synthesis and a transparent analytical framework that can support robust empirical testing.

This study aims to build a comprehensive methodological and empirical foundation for analyzing the stabilization function of NRF in counteracting the resource curse (RC).

The research employs the Systematic Literature Review (SLR) method to critically examine both quantitative and qualitative studies addressing NRF stabilization role, with a particular focus on research design, sample selection, and macroeconomic indicators. In a subsequent step, drawing on

¹ For consistency, the term Natural Resource Fund (NRF) is used throughout the paper to refer collectively to all such funds.

the RC literature, a group of 49 resource-rich economies was identified and classified according to resource specialization and level of economic development. For each country, the existence, type, and investment strategy of NRF were verified, along with their adherence to the Santiago Principles - thereby creating a transparent and replicable framework for future econometric analysis.

The paper is organized into three main sections, framed by an introduction and a concluding discussion. The first section provides a conceptual and theoretical background to the topic and highlights the study's contribution to the existing body of knowledge. The second section presents the research design and methodology. The third section summarizes the main findings and offers a discussion of their implications.

2. Literature review

The resource curse (RC) refers to the paradox in which countries abundant in natural resources often experience slower economic development and weaker poverty reduction than nations with more diversified economic structures (Dymitrowska, 2023). This issue continues to be highly relevant, particularly amid contemporary global challenges such as the economic repercussions of the COVID-19 pandemic, rising inflation, ongoing armed conflicts, and the sustained volatility of key commodity prices.

Over recent decades, global commodity markets have shown persistent instability, constituting a key macroeconomic mechanism underpinning the RC. In response to fiscal fluctuations driven by commodity price volatility, many governments began establishing NRF in the 1970s to buffer domestic economies and stabilize revenues. Over the years, the role and structure of NRF have evolved significantly. A key turning point was the success of the Norwegian NRF, which broadened the original objective of economic stabilization to include the accumulation of financial capital for future generations. This shift contributed to the growing popularity of new types of NRF. Initially, investment funds gained traction – these aimed to accumulate revenues from resource extraction and allocate them to domestic and foreign investment projects. More recently, however, savings funds, also known as future generations funds, have become increasingly prominent. Their purpose is to invest resource revenues in long-term assets, primarily abroad, with the goal of preserving wealth for future generations.

Although the oldest fund of this type – the Texas Permanent University Fund - was established in 1876, over 52% of all savings funds have been created since 2005, and more than 70% of them were launched after 2010 (Dymitrowska, 2023). Notably, an increasing number of emerging and developing economies are now opting to establish this type of fund.

The establishment of NRF has primarily aimed - and continues to aim - at mitigating the effects of the RC. In recent years, growing attention from scholars, international organizations, and governments of resource-rich countries has focused on evaluating how effectively these funds address the challenges associated with the phenomenon (Ouoba, 2020; Sugawara, 2014; Taguchi & Ganbayar, 2022; Tsani, 2015). This surge of interest stems largely from the rising prominence of NRF within the global financial system. Today, they represent more than half of all Sovereign Wealth Funds (SWFs), whose combined assets total approximately USD 15.2 trillion. (SWFI, n.d.).

The question of whether NRF effectively counter the RC is complex and inherently multidimensional, intersecting macroeconomic, social, political, institutional, cultural, and historical domains. The literature encompasses both broad cross-country comparisons (e.g., Bagattini, 2011; Ouoba, 2020; Sugawara, 2014; Taguchi & Ganbayar, 2022) and detailed case studies (e.g., Baena et al., 2012; Chalk et al., 1997; Dymitrowska, 2023; Fasano-Filho, 2000; Lücke, 2011), applying qualitative (e.g., Fasano-Filho, 2000; Kalyuzhnova, 2006; Le Borgne & Medas, 2021; Usui, 2007) and quantitative (e.g., Bagattini, 2011; Ossowski et al., 2008; Ouoba, 2020; Shabsigh & Ilahi, 2007; Sugawara, 2014; Tsani, 2013, 2015) approaches. These works explore multiple aspects of fund design and performance, including fund typology (Taguchi & Ganbayar, 2022), governance mechanisms (Tsani, 2013, 2015), and primary operational objectives (Taguchi & Ganbayar, 2022).

The literature offers no unified conclusion regarding the effectiveness of NRF. Some studies confirm their success in achieving specific goals (Bagattini, 2011; Sugawara, 2014; Taguchi & Ganbayar, 2022), others emphasize that effectiveness depends on certain institutional or policy conditions (Allegret et al., 2018; Le Borgne & Medas, 2021; Usui, 2007), while some argue that they remain largely ineffective (Davis et al., 2001; Ouoba, 2016). Others express ambivalence or inconclusive findings (Barnett & Ossowski, 2021; Ossowski et al., 2008; Ouoba, 2016).

Given the importance of this issue for the economic development of resource-rich countries and the stability of the global economy, advancing detailed and methodologically sound research remains a critical priority. This paper presents an initial step in evaluating the effectiveness of NRF in mitigating the RC. It forms the first phase of a broader research project undertaken by the author, with the overall research framework illustrated in Figure 1.

Key macroeconomic drivers of the RC include commodity price volatility, the Dutch disease, and excessive dependence on resource extraction and exports. Within this context, NRF are expected to perform four core functions – stabilization, investment, savings, and diversification – each mitigating the adverse effects of the curse (Figure 1). The stabilization function primarily targets commodity price volatility by smoothing fiscal revenues and

expenditures over the commodity price cycle. Savings and investment functions address intertemporal and structural dimensions of the RC by reducing procyclicality and supporting long-term growth, while diversification aims to alleviate excessive dependence on the resource sector and related Dutch disease pressures through broader asset allocation.

This study focuses on the stabilization function of NRF in alleviating the RC, with attention to differences across fund types, forming the methodological basis for further empirical analysis.

Stabilization funds aim to smooth economic fluctuations by saving surplus revenues from resource exports when prices exceed a predefined threshold, typically determined by national macroeconomic conditions. Their assets, usually short-term and liquid, are drawn upon when prices fall to offset fiscal shortfalls. Investment funds allocate a portion of resource revenues to short- and long-term assets, domestically and abroad. Although not explicitly designed for stabilization, returns from these investments - especially foreign ones - can indirectly reduce fiscal vulnerability. Savings funds pursue long-term wealth preservation by investing resource revenues in long-term, often foreign, financial assets. They generate alternative income streams, support diversification, and accumulate capital for a post-resource economy. Over time, such funds may enable a transition from resource to capital exporting. While not directly stabilizing, their consistent returns contribute indirectly to economic stability. Given the rising prominence of investment and savings funds, particularly in emerging and developing economies, it is pertinent to examine whether these fund types also exhibit a stabilizing function.

Despite the growing body of literature on NRE, existing empirical evidence on their stabilization effects remains fragmented and inconclusive. Studies differ substantially in terms of research design, volatility measures, institutional controls, country coverage, and time horizons, which limits the comparability of results and contributes to mixed findings. Moreover, much of the literature relies on heterogeneous definitions of resource-rich countries and fund types, often without a systematic or up-to-date classification framework. These limitations highlight the need for a more transparent and structured synthesis of existing evidence, which the present study seeks to address.

3. Methods

The research was conducted in three stages. First, a comprehensive critical literature review was carried out using the SLR method to examine existing empirical studies, clarify key concepts, identify dependent, independent, and control variables, and determine the time frames adopted in prior research. Second, resource-rich countries were identified through descriptive and comparative statistical analysis combined with a rule-based classification

approach. Threshold criteria derived from the World Bank's World Development Indicators (WDI) determined country eligibility, after which countries were classified by dominant resource type (fuel or mineral) and level of economic development. Third, a structural and institutional analysis examined individual NRF, assessing their establishment timelines, evolution, and classification by fund type and investment strategy.

3.1. Systematic Literature Review

A comprehensive critical literature review was undertaken, employing the SLR method, which has gained prominence in recent years. The review covers the period from 1990 to 2025. This starting point reflects that most NRF were created in the 1980s, and reliable empirical evidence on their effectiveness could emerge only after a decade of operation. This assumption is consistent with Ouoba (2020), who argues that funds require around ten years to accumulate sufficient capital to generate observable effects. The review period ends in 2025, with data collected on March 27, 2025.

Two databases were consulted - Scopus and Google Scholar – both recognized as authoritative sources of scientific information. The first stage identified publications concerning NRF operations through Scopus searches using the keywords “resource fund”, “oil fund”, “petroleum fund”, and “natural resource fund”, restricted to the defined period and filtered by “article title, abstract, keywords” within the disciplines of social sciences, economics, econometrics and finance, and energy. Given the heterogeneity of terminology in the literature, the review was complemented by backward and forward citation tracking and thematic screening of related studies on fiscal stabilization and resource revenue management. Google Scholar searches were conducted during a defined time window using relevance-based sorting, acknowledging the inherent limitations of replicability associated with this database. This produced 211 records.

At the second stage, abstracts were screened, excluding studies that did not examine NRF effectiveness in mitigating the RC, resulting in 20 publications. A complementary search in Google Scholar was then conducted, acknowledging its broader coverage. Cross-referencing both databases yielded a consolidated list of 33 articles.

Finally, the abstracts and findings of these studies were analyzed to identify those specifically assessing the stabilization role of NRF in addressing the RC. A total of 21 studies were selected and categorized based on the following criteria:

- type of study: quantitative or qualitative,
- effectiveness assessment: effective, effective under certain conditions, ineffective, lack of effect.

At this stage, studies were excluded if they were descriptive, conceptual, or did not directly assess macroeconomic or fiscal stabilization outcomes. The results of this stage are presented in Table 1.

In the final SLR phase, eight empirical studies were analyzed in depth, of which five were identified as most representative of the research topic. The term “most representative” refers to empirical studies that explicitly estimate the stabilization effects of NRF using quantitative methods, comparable outcome variables, and clearly defined country-fund samples. Each was examined in terms of methodology - including indicators of fund effectiveness in fulfilling the stabilization function, specified dependent variables and their volatility transformations, as well as primary and control independent variables – together with data sources, research periods, findings, and recommendations. The outcomes of this analysis are summarized in Table 2.

While a formal PRISMA flow diagram is not reported due to space constraints, the sequential screening process and inclusion criteria are explicitly described in the text.

3.2. Identification and classification of resource-rich countries and NRF

The research sample comprises resource-rich countries affected by the RC, defined as economies specializing in the extraction and export of natural resources or those predominantly resource-based. Following a review of inclusion criteria in the literature, countries were classified as resource-rich if they met one of two thresholds: average annual extractive revenues exceeding 25% of GDP or natural resources constituting at least 25% of average annual exports. These benchmarks follow prior RC studies (Auty, 2004; Dymitrowska, 2020, 2023; Gelb, 1988; Stevens, 2003; van der Ploeg, 2011).

The analysis focuses on strategic resources typically linked to the RC – fuels (oil, gas, coal) and minerals (tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, phosphate). Data from the WDI (accessed 19 December 2024) cover 2000–2023, with 2000 chosen as the baseline year marking the global expansion of NRF, particularly savings funds. The 24-year period provides a robust basis for empirical assessment, with 2023 determined by data availability.

Resource-rich countries were identified using six indicators: mineral, oil, gas, and coal rents (% of GDP), and fuel as well as ores and metals exports (% of merchandise exports). Two composite indices – Total Natural Resources Rents (TNRR) and Total Natural Resources Exports (TNRE) – were then computed. Countries exceeding the threshold in at least 13 of the 24 years were included in the sample.

Subsequently, NRF operating within these countries were examined using data from the International Forum of Sovereign Wealth Funds (IFSWF), the

Sovereign Wealth Fund Institute (SWFI), and official fund or government sources.

The applied methodological approach is directly aligned with the study's objective of building a comprehensive methodological-empirical foundation for analyzing the stabilization function of NRF in counteracting the RC. By combining a SLR with the identification and classification of resource-rich economies and their NRF, the method enables a structured and transparent synthesis of existing empirical evidence. At the same time, the approach is subject to limitations inherent to secondary data analysis, including reliance on the scope, quality, and methodological diversity of available empirical studies.

4. Results

4.1. Key insights from the SLR

All studies identified in the final SLR stage (Table 2) applied econometric panel-data analysis but varied considerably in sample size. The most extensive was Sugawara's (2014) study, covering 68 resource-rich countries and 32 NRF. The second-largest and most recent, by Taguchi and Ganbayar (2022), analyzed 41 countries and 54 NRF, reflecting the marked growth in newly established funds in recent years.

Taguchi underscores the importance of classifying NRF by their intended function when assessing their effectiveness, highlighting the increasing significance of emerging fund types within the broader development policy framework of resource-rich countries.

Several studies focus exclusively on oil-exporting countries (Ossowski et al., 2008; Shabsigh & Ilahi, 2007), reflecting a broader trend in research on NRF effectiveness (e.g., Allegret et al., 2018). Given that fuel commodities constitute strategic resources, specialized analyses of this group are fully warranted.

However, the RC affects both fuel- and mineral-exporting countries. Incorporating both resource categories thus enhances the analytical depth of the study and enables a meaningful comparison between fuel- and mineral-rich economies.

All authors assumed that NRF function as counter-cyclical buffers mitigating commodity price shocks. Their analyses consistently tested whether NRF reduce macroeconomic volatility, employing either monetary (Shabsigh & Ilahi, 2007) or fiscal performance indicators (Bagattini, 2011; Ossowski et al., 2008; Sugawara, 2014; Taguchi & Ganbayar, 2022). This approach aligns with the macroeconomic perspective of RC theory.

Regarding the dependent variable, most studies assess the impact of NRF on government expenditure stability. Some extend the analysis by including

additional measures; for instance, Ossowski et al. (2008) and Taguchi and Ganbayar (2022) also examine the primary balance alongside expenditure stability.

Bagattini (2011) proposed a composite indicator – the Stabilization Fund Success Variable - based on an additive six-point scale. One point is assigned at the end of each fiscal year for meeting the following conditions:

1. a non-negative overall fiscal balance;
2. an improvement in the overall fiscal balance;
3. a non-negative non-resource fiscal balance;
4. an improvement in the non-resource fiscal balance;
5. an increase in non-resource revenues;
6. a reduction in public debt.

In contrast, the study by Shabsigh & Ilahi (2007) used a different approach to the dependent variable, focusing on indicators of monetary stability, specifically: volatility of money supply, the consumer price index (CPI), and real effective exchange rates (REER).

Although government expenditure is the most frequently used dependent variable, approaches to measuring its volatility differ. Sugawara (2014) analyses the volatility of discretionary expenditure (Table 2), while Taguchi and Ganbayar (2022) use the absolute deviation of total government expenditure from its period average, expressed as a percentage of GDP.

Sugawara (2014) also considers alternative dependent variables, including the volatility of total, investment, and consumption expenditure, as well as of the cyclically adjusted fiscal balance. He further proposes an alternative volatility measure – the five-year moving standard deviation of annual growth rates. The remaining authors did not measure volatility directly, relying instead on broader fiscal or monetary indicators to assess fund effectiveness.

Both Sugawara (2014) and Taguchi and Ganbayar (2022) contend that NRF must operate for at least five years to produce meaningful outcomes, a lag explicitly incorporated into their analyses. Other studies omit such temporal adjustments. In the broader literature on the effectiveness of NRF, a noteworthy contribution is the study by Ouoba (2016), who emphasizes that a fund should exist for at least ten years before reliable results can be expected.

When analyzing the types of funds examined, Sugawara (2014) and Taguchi and Ganbayar (2022) focus specifically on the effectiveness of stabilization funds in enhancing macroeconomic stability, whereas other authors analyze NRF more broadly without differentiating fund types. Bagattini (2011) introduces two control variables – stabilization and savings – to distinguish funds by purpose, though the study does not emphasize differences between these categories.

Across all reviewed studies, the primary independent variable is the existence of an NRF in a given country. A broad set of control variables is also

employed, including population, economic growth, inflation, resource dependence, trade and capital openness, financial development, export diversification, geography, resource prices, and export shares. All authors further emphasize institutional controls, underscoring the central role of institutional quality in evaluating NRF effectiveness.

When analyzing the main findings – namely, whether NRF fulfill their stabilization function – Bagattini (2011), Sugawara (2014), and Taguchi & Ganbayar (2022) all conclude that they do.

Bagattini (2011) finds that stabilization funds improve fiscal outcomes, emphasizing governance and fund rules as key determinants of success. Sugawara (2014) likewise reports that such funds smooth government expenditure but stresses the importance of political institutions and fiscal rules in mitigating volatility. Taguchi and Ganbayar (2022) confirm the effectiveness of stabilization funds in reducing volatility in both expenditure and the primary balance, again underscoring the role of governance quality. Shabsigh and Ilahi (2007) link oil funds to lower volatility in broad money, prices, and inflation, though they find only a weak negative relationship with real exchange rate volatility.

By contrast, Ossowski et al. (2008) find no evidence of NRF effectiveness, irrespective of the dependent variable used, yet emphasize that institutional quality remains crucial for achieving sound fiscal performance.

Observed differences across studies largely reflect design choices, institutional settings, and measurement approaches. In conclusion, the results across studies are not fully consistent, indicating the need for further empirical verification and more nuanced analysis.

The existing literature lacks an up-to-date and systematically defined identification of resource-rich countries, as well as a comprehensive classification of NRF that accounts for fund type, investment strategy (domestic versus foreign, short- versus long-term), year of establishment, and membership in the International Forum of Sovereign Wealth Funds, signaling adherence to the Santiago Principles. Addressing these gaps constitutes an additional contribution of the present study.

4.2. Resource-rich countries and NRF

In this study, a resource-rich country is defined as an economy predominantly reliant on the extraction and export of natural resources. Based on a critical review of the literature (Auty, 2004; Gelb, 1988; Stevens, 2003; van der Ploeg, 2011), it is assumed that the RC arises exclusively within such economies. Based on the methodology outlined above, the first stage of the analysis identified an initial list of 58 countries.

After conducting a detailed assessment of each country, several were excluded for various reasons. For example, Belarus and Greece, although

they met the threshold, are not major oil producers. Instead, they operate well-developed refining sectors, importing crude oil and exporting refined petroleum products such as gasoline and diesel, which may be statistically classified as raw materials.

Sudan and South Sudan were excluded due to their complex and unstable political and economic environments, the secession of South Sudan in 2011, and the lack of reliable data. Similarly, the Syrian Arab Republic was excluded due to the civil war that began in 2011, which significantly disrupted its export capacity and led to a breakdown in statistical reporting. The exclusion criteria were applied consistently across countries and aimed to ensure conceptual comparability of resource dependence and export structures within the research sample. A few additional countries were also excluded based on similar criteria. As a result, the final research sample consists of 49 resource-rich countries.

These countries were classified by: level of economic development (according to World Bank and IMF classifications), geographic region, type of extracted resources and whether they exceeded the TNRR or TNRE thresholds. The results of this classification are presented in Table 3.

In the next stage of the study, a detailed analysis of NRF operating in the identified group of countries was conducted. A total of 43 NRF were identified. These funds were classified according to: fund type (stabilization, investment, or savings), investment characteristics (domestic vs. foreign; short-term vs. long-term), and membership in the International Forum of Sovereign Wealth Funds, indicating a formal commitment to the Santiago Principles. The results of this classification are presented in Table 4.

This part of the study provides an original contribution to the literature by offering a comprehensive and up-to-date identification and classification of resource-rich countries and the NRF operating within them. The analysis establishes a coherent empirical basis for future quantitative research by combining clearly defined selection criteria with a systematic typology of countries and funds. Presenting the results in a structured tabular form enhances the transparency and replicability of the findings. This methodological groundwork not only fills an existing gap in the literature - where such classifications are often outdated or fragmented - but also creates a consistent reference framework for subsequent empirical verification of the stabilization function of NRF.

Taken together, the results presented in this chapter extend beyond a descriptive synthesis of existing findings and provide a structured analytical basis for future empirical research. The systematic comparison of quantitative studies summarized in Table 2 offers a consolidated overview of dependent and independent variables, volatility transformation methods, control variables, data sources, and research horizons used in prior analyses of NRF stabilization effects. At the same time, the identification and classification

of resource-rich countries (Table 3) and their NRF (Table 4) deliver a clearly defined and up-to-date research sample, enabling informed and consistent design choices for subsequent panel-based econometric studies.

5. Conclusion

The study aimed to build a comprehensive methodological and empirical foundation for analyzing the stabilization function of NRF in counteracting the RC. This objective has been achieved through a three-stage research design that systematically integrates literature synthesis with structured data preparation.

The first stage employed a systematic and critical review of existing empirical research, enabling the identification of dominant methodological approaches, commonly applied indicators, and key sources of heterogeneity in the assessment of NRF effectiveness. This synthesis provides clarity regarding how stabilization effects have been operationalized in prior studies and highlights the methodological choices that shape empirical outcomes.

In the second stage, a research sample of 49 resource-rich economies was identified based on rigorously defined and verifiable criteria derived from reliable data sources, including the World Bank's WDI. These countries were classified by type of resource specialization – fuel or mineral – and by level of economic development. The classification enhances the comparability of future analyses and reduces ambiguity in sample selection.

The third stage focused on identifying and analyzing 43 NRF operating within this group of countries, including their type, investment strategy, and compliance with the Santiago Principles. This structured overview captures the institutional diversity of NRF and provides essential contextual information for empirical modelling.

Taken together, the results of the three analytical stages form a coherent and operational framework that goes beyond descriptive review. The study's contribution lies in consolidating dispersed methodological knowledge, establishing a clearly defined and replicable research sample, and providing the analytical groundwork necessary to formulate specific research assumptions for econometric analysis. As such, the findings offer researchers a ready-to-use foundation for panel-based econometric studies, including guidance on country and fund selection, variable construction, data sources, and modelling strategies.

At the same time, the study is subject to limitations inherent in secondary data synthesis, including reliance on the scope and quality of existing empirical research and data availability. These limitations point to promising avenues for future research, particularly the application of the proposed framework in original econometric analyses of the stabilization effects of NRF.

References

- Allegret, J. P., Benkhodja, M. T., & Razafindrabe, T. (2018) *Monetary policy, oil stabilization fund and the Dutch disease*. GREDEG Working Papers, 06. <https://hal.science/hal01796312/document>
- Auty, R. M. (2004). *Resource Abundance and Economic Development* Resource abundance and economic development. Oxford University Press. <https://doi.org/10.1093/0199275785.001.0001>
- Baena, C., Sévi, B., & Warrack, A. (2012). Funds from non-renewable energy resources: Policy lessons from Alaska and Alberta. *Energy Policy*, 51, 569–577. <https://doi.org/10.1016/j.enpol.2012.08.076>
- Bagattini, G. Y. (2011). *The political economy of stabilization funds: Measuring their success in resource-dependent countries*. IDS Working Paper, 356. <https://www.ids.ac.uk/download.php?file=files/dmfile/Wp356.pdf>
- Barnett, S., & Ossowski, R. (2002). *Operational aspects of fiscal policy in oil-producing countries*. International Monetary Fund Working Papers, 177. <https://doi.org/10.5089/9781451858884.001>
- Chalk, N. A., El-Arian, M. A., Fennell, S. J., Kireyev, A. P., & Wilson, J. F. (1997). *From reconstruction to accumulation for future generations: Kuwait*. Occasional Paper, International Monetary Fund, 150. <https://doi.org/10.5089/9781557756237.084>
- Davis, J., Ossowski, R., Daniel, J., & Barnett, S. (2001). *Stabilization and savings funds for non-renewable resources*. International Monetary Fund, Occasional Paper, 205, 273–315. <https://www.imf.org/external/pubs/nft/op/205/>
- Devlin, J., & Titman, S. (2004). Managing oil price risk in developing countries. *The World Bank Research Observer, World Bank Group*, 19(1), 119–139. <https://doi.org/10.1093/wbro/lkh015>
- Dymitrowska, Y. (2020). Effectiveness of a national resource fund in counteracting the resource curse. *Organization and Management*, 1(49), 23–40. <https://doi.org/10.29119/1899-6116.2020.49.2>
- Dymitrowska, Y. (2023). Savings natural resource funds: Effectiveness of the Norwegian Government Pension Fund Global. *Ekonomia i Prawo. Economics and Law*, 22(3), 471–495. <https://doi.org/10.12775/EiP.2023.026>
- Eifert, B., Gelb, A., & Tallroth, N. B. (2002). *The political economy of fiscal policy and economic management in oil exporting countries*. The World Bank Policy Research Working Paper, 2899. <https://tiny.pl/5bgybc58>
- Engel, E., & Valdés, R. (2000). *Optimal fiscal strategy for oil exporting countries*. International Monetary Fund Working Paper, 118. <https://www.imf.org/external/pubs/ft/wp/2000/wp00118.pdf>
- Fasano-Filho, U. (2000). *Review of the experience with oil stabilization and savings funds in selected countries*. International Monetary Fund Working Papers, 112. <https://doi.org/10.5089/9781451853599.001>

- Gelb, A.H. (1988). *Oil windfalls: blessing or curse?* Oxford University Press, New York.
- Gould, M. (2010). Managing manna from below: Sovereign wealth funds and extractive industries in the Pacific. *Economic Roundup*, 1, 63–86.
- Hjort, J. (2006). Citizen funds and Dutch disease in developing countries. *Resource Policy*, 31(3), 183–191. <https://doi.org/10.1016/j.resourpol.2007.01.001>
- James, A., Retting, T., Shogren, J. F., Watson, B., & Wills, S. (2022). Sovereign wealth funds in theory and practice. *Annual Review of Resource Economics*, 14(1), 621–646. <https://doi.org/10.1146/annurev-resource-111920-015758>
- Kalyuzhnova, Y. (2006). Overcoming the curse of hydrocarbon: Goals and governance in the oil funds of Kazakhstan and Azerbaijan. *Comparative Economic Studies*, 48, 583–613. <https://doi.org/10.1057/palgrave.ces.8100160>
- Le Borgne, E., & Medas, P. (2007). *Sovereign wealth funds in the pacific island countries: Macro-fiscal linkages*. International Monetary Fund Working Papers, 297. <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/SovereignWealth-Funds-in-thePacific-Island-Countries-Macro-Fiscal-Linkages-21519>
- Lücke, M. (2011). Stabilization and savings funds to manage natural resource revenues: Kazakhstan and Azerbaijan versus Norway. *Comparative Economic Studies*, 53, 35–56. <https://doi.org/10.1057/ces.2010.28>
- Merlevede, B., Schoors, K., & van Aarle, B. V. (2009). Russia from bust to boom and back: Oil price, Dutch disease and stabilisation fund. *Comparative Economic Studies*, 51, 213–241. <https://doi.org/10.1057/ces.2009.2>
- Ossowski, R., Villafuerte, M., Medas, P., & Thomas, T. (2008). *Managing the oil revenue boom: The role of fiscal institutions*. International Monetary Fund Occasional Paper, 260. <https://doi.org/10.5089/9781589067189.084>
- Ouoba, Y. (2016). Natural resources: Funds and economic performance of resource-rich countries. *Resource Policy*, 50, 108–116. <https://doi.org/10.1016/j.resourpol.2016.09.003>
- Ouoba, Y. (2020). Natural resources fund types and capital accumulation: A comparative analysis. *Resource Policy*, 66, 101635. <https://doi.org/10.1016/j.resourpol.2020.101635>
- Shabsigh, G., & Ilahi, N. (2007). *Looking beyond the fiscal: Do oil funds bring macroeconomic stability?* International Monetary Fund Working Papers, 096. <https://doi.org/10.5089/9781451866605.001>
- Stevens, P. (2003). *Resource impact: a curse or a blessing?* Centre for Energy. Petroleum and Mineral Law and Policy, University of Dundee. https://www.laohamutuk.org/OilWeb/Bground/Transpar/Stevens%20resource%20curseVol14_1.pdf

- Sugawara, N. (2014). *From Volatility to Stability in Expenditure: Stabilization Funds in Resource-Rich Countries*. International Monetary Fund Working Papers, 43. <https://doi.org/10.5089/9781475515275.001>
- SWFI (Sovereign Wealth Fund Institute). (n.d.). Top 100 Largest sovereign wealth fund rankings by total assets. Retrieved May 5, 2025 from <https://www.swfinstitute.org/fund-rankings/sovereign-wealth-fund>
- Taguchi, H., & Ganbayar, J. (2022). Natural resource funds: Their objectives and effectiveness. *Sustainability*, 14(17), 10986. <https://doi.org/10.3390/su141710986>
- Tsani, S. (2013). Natural resources, governance and institutional quality: The role of resource funds. *Resource Policy*, 38(2), 181–195. <https://doi.org/10.1016/j.resourpol.2012.11.001>
- Tsani, S. (2015). On the relationship between resource funds, governance and institutions: Evidence from quantile regression analysis. *Resource Policy*, 44, 94–111. <https://doi.org/10.1016/j.resourpol.2015.01.003>
- Usui, N. (2007). *How Effective Are oil funds? Managing resource windfalls in Azerbaijan and Kazakhstan*. Asian Development Bank Policy. <https://www.adb.org/sites/default/files/publication/28117/pb050.pdf>
- van der Ploeg, F. (2011). Natural resources: Curse or blessing? *Journal of Economic Literature*, 49(2), 366–420. <https://doi.org/10.1257/jel.49.2.366>
- Villafuerte, M., Lopez-Murphy, P., & Ossowski, R. (2010). *Riding the roller coaster: Fiscal policies of nonrenewable resource exporters in Latin America and the Caribbean*. International Monetary Fund Working Paper, 251. <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Riding-the-Roller-Coaster-Fiscal-Policies-of-Nonrenewable-Resource-Exporters-in-Latin-24342>

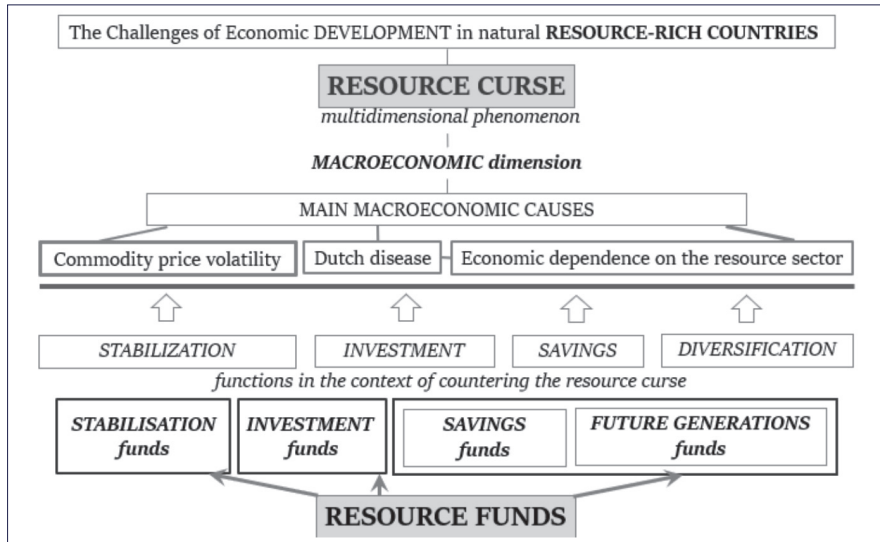
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Appendix

Figure 1. Research concept



Source: Own preparation.

Table 1. Key insights from the SLR

	Descriptive Analyses	Quantitative Analyses
<i>effective, effective under certain conditions</i>	Engel & Valdes (2000); Fasano-Filho (2000); Hjort (2006); Le Borgne & Medas (2007); Usui (2007); Gould (2010); Lücke (2011); Dymitrowska (2020); James et al. (2022);	Shasigh & Ilahi (2007); Merlevede et al. (2009); Bagattini (2011); Sugawara (2014); Allegret et al. (2018); Taguchi & Ganbayar (2022); Dymitrowska (2023);
<i>ineffective, lack of effect</i>	Davis et al. (2001); Eifert et al. (2002); Devlin & Titman (2004); Villafuerte et al. (2010)	Ossowski et al. (2008)

Source: Own preparation.

Table 2. Effectiveness of NRF in performing their stabilization function - review of main quantitative studies

AUTHOR	IEE	DEPENDENT VARIABLES	Sources	Volatility Transformation Method	INDEPENDENT (Explanatory) VARIABLES		Sources	Sample	Period
					main interest	control variables			
Shabsigh & Ilahi (2007)	volatility of inflation, broad money, real exchange rate	1. Coefficient of variation of broad money 2. Consumer price index (CPI) 3. REER 4. Growth rate of CPI	WEO, IFS	Standard deviation of the broad money supply divided by its mean, expressed as a %.	Oil fund dummy variable taking a value of 1 when an oil fund is present and zero when it is not	1. A real GDP growth rate (annual) 2. Share of oil in total Ex 3. Oil price growth rate 4. Financial Depth (broad money to GDP ratio)	WEO, IFS	9 NRF, 15 oil exporting countries	1973-2003
Ossowski et al. (2008)	volatility of government spending	1. Non-oil primary balance 2. Expenditures, annual real growth rate 3. Ratio of the change in expenditure to the change in oil revenue	IMF staff calculations	none	Oil fund dummy variable taking a value of 1 when an oil fund is present and zero when it is not	1. Log (GDP <i>per capita</i> in US\$, lagged) 2. Log of expenditures (% of GDP, lagged) 3. Net government wealth (% of non-oil GDP) 4. Oil revenue (as a % of total revenue) 5. Oil revenue growth (% change) 6. Oil price (lagged) 7. Inflation (lagged) 8. Oil fund net wealth 9. Non-oil primary balance (% of non-oil GDP, lagged) 10. Composite index of institutional quality (ICRG) 11. Democratic accountability 12. Bureaucratic quality 13. Government stability 14. Law and order	IMF staff calculations, ICRG	21 oil exporting countries	1992-2005



AUTHOR	IEE	DEPENDENT VARIABLES	Sources	Volatility Transformation Method	INDEPENDENT (Explanatory) VARIABLES		Sources	Sample	Period
		1. Sustainable fiscal performance: fiscal revenues, fiscal expenditures and savings; governance 2. Stabilisation fund success variable as a 6-point indicator 3. Non-resource GDP (% of GDP) 4. Non-resource Ex (% of Ex) 5. Government revenues (% of GDP) 6. Non-resource government revenues (% of GDP) 7. Expenditures (% of GDP) 8. Government balance (% of GDP) 9. Non-resource government balance (% of GDP) 10. Public debt (% of GDP)	IMF reports, WDI, WEO and other	none	main interest	control variables	IMF reports, WDI, WEO and other	12 countries with stabilization funds	1992–2007
							1. GDP, current prices, national currency (billions) and US\$ (billions) 2. Exchange rate, national currency per US\$ 3. Total Ex, f.o.b., US\$ (billions) 4. Resource Ex, US\$ (billions) and share of total Ex 5. Stabilisation fund purpose: stabilisation, savings 6. Stabilisation fund: incorporation into budget, earmarking of resources 7. Stabilisation fund assets, US\$ (billions), % of GDP 8. Non-negative, annual improvement of fiscal balance, non-resource 9. Annual reduction of public debt 10. Annual increase of stabilisation fund assets 11. Annual success of stabilisation fund 12. Political rights, civil liberties, freedom status, index of economic freedom, Polity IV, bureaucratic quality, government effectiveness, rule of law, control of corruption 13. Human development index		



AUTHOR	Sugawara (2014)
IEE	volatility of government spending
DEPENDENT VARIABLES	1. Volatility of discretionary government expenditure (in logs)
Sources	WEO
Volatility Transformation Method	The log of 5-year moving standard deviation of the residuals from the IV estimation of Equation. The estimation is done by country and excludes country specific business cycle effect.
INDEPENDENT (Explanatory) VARIABLES	
main interest	Dummy variable taking a value of 1 if a stabilization fund exists in the given year (as in logs) 1. Government expenditure (% of GDP, in logs) 2. Population (in logs) 3. GDP <i>per capita</i>, PPP (constant 2005 international \$, in logs) 4. Diversification of Ex products (Theil index: higher, less diversified) 5. Real GDP growth volatility (5-year moving standard deviation, in logs) 6. CPI inflation (%) 7. Liquid liabilities (% of GDP, in logs) 8. Volatility of liquid liabilities (5-year moving standard deviation, in logs) 9. International financial remoteness (distance to financial center, km, in logs) 10. Capital account openness (higher, more openness) 11. Political freedom (higher, less freedom) 12. Political regime (higher, more democratic) 13. Sub-soil resource rents (% of GDP) 14. Number of fiscal rules in place (number) 15. Fiscal rules index (higher, more strengthened) 16. A dummy variable taking a value of 1 if a country is landlocked 17. A dummy variable (taking a value of 1) for an island country 18. A dummy variable that equals 1 if the presidential system is employed
control variables	
Sources	WEO, WDI, UN Comtrade and other
Sample	32 NRF, 68 resource-rich countries
Period	1988–2012



AUTHOR	IEE	DEPENDENT VARIABLES	Sources	Volatility Transformation Method	main interest	INDEPENDENT (Explanatory) VARIABLES control variables	Sources	Sample	Period
Taguchi & Ganbayar (2022)	volatility of government expenditure and primary balance	1. General government total expenditure, % of GDP, absolute value of the deviation from the period average 2. General government primary net lending/borrowing, % of GDP, absolute value of the deviation from the period average	WEO	1. Absolute value of the deviation from the period average of "general government total expenditure as a % of gross domestic product (GDP)" 2. Absolute value of the deviation from the period average of "general government primary net lending/borrowing as a % of GDP"	Stabilization fund dummy: taking a value of 1 if the fund exists in t – 5	1. Gross domestic product as constant prices, % change, one lagged 2. Inflation by average consumer prices, % change, one lagged 3. Population by millions of persons, log term, one lagged 4. Sum of Ex and imports of goods and services, % of GDP, one lagged 5. Total natural resource rents, % of GDP, one lagged 6. Worldwide governance indicators (WGI, average), from –2.5 (weak) to 2.5 (strong) 7. Voice and accountability 8. Political stability and absence of violence/terrorism 9. Government effectiveness 10. Regulatory quality 11. Rule of law 12. Control of corruption	WEO, WDI, WGI	54 NRE, 41 resource-rich countries	1996–2020

Additional information. **WEO** - World Economic Outlook Databases, International Monetary Fund, **WDI** - World Development Indicators, World Bank, **WGI** - Worldwide Governance Indicators, World Bank, **IFS** - IMF International Finance Statistics, **ICRG** - International Country Risk Guide, **IEE** - Indicators for evaluating the effectiveness of NRF in fulfilling their stabilization function, **CPI** - Consumer price index, **GDP** - Gross Domestic Product, **REER** - Real effective exchange rates, % - percentage, \$ - dollars, **Ex** – export.

Source: Own preparation.

Table 3. Resource-rich countries

	COUNTRY	RESOURCE		RT WB	Classification according to development		Geographical region
					IMF		
1	Algeria	oil, NG		F	UMC	EMDE	MEA
2	Angola	oil, NG		<i>F</i>	<i>LMC</i>	<i>EMDE</i>	<i>SSF</i>
3	Armenia		MI, ME	M	UMC	EMDE	ECS
4	Azerbaijan	oil, NG		<i>F</i>	<i>UMC</i>	<i>EMDE</i>	<i>ECS</i>
5	Bahrain	oil, NG	ME	FM	HIC	EMDE	MEA
6	Bolivia	NG	MI, ME	FM	LMC	EMDE	LCN
7	Brunei Darussalam	oil, NG		<i>F</i>	<i>HIC</i>	<i>EMDE</i>	<i>EAS</i>
8	Cameroon	oil, NG	MI, ME	FM	LMC	EMDE	SSF
9	Canada	oil, NG	MI, ME	FM	HIC	AE	NAC
10	Chile		MI, ME	<i>M</i>	<i>HIC</i>	<i>EMDE</i>	<i>LCN</i>
11	Colombia	oil, coal		F	UMC	EMDE	LCN
12	Congo, Rep.	oil		F	LMC	EMDE	SSF
13	Ecuador	oil		<i>F</i>	<i>UMC</i>	<i>EMDE</i>	<i>LCN</i>
14	Egypt, Arab Rep.	oil, NG	ME	FM	LMC	EMDE	MEA
15	Equatorial Guinea	oil, NG		F	UMC	EMDE	SSF
16	Gabon	oil		F	UMC	<i>EMDE</i>	<i>SSF</i>
17	Georgia		MI, ME	M	UMC	EMDE	ECS
18	Guinea		MI, ME	M	LMC	EMDE	SSF
19	Indonesia	oil, NG, coal	ME	<i>FM</i>	<i>UMC</i>	<i>EMDE</i>	<i>EAS</i>
20	Iran, Islamic Rep.	oil, NG		F	UMC	EMDE	MEA
21	Iraq	oil, NG		F	UMC	EMDE	MEA
22	Jamaica		MI	<i>M</i>	<i>UMC</i>	<i>EMDE</i>	<i>LCN</i>
23	Kazakhstan	oil, NG	MI, ME	FM	UMC	EMDE	ECS
24	Kuwait	oil, NG		F	HIC	EMDE	MEA
25	Lao PDR		MI, ME	<i>M</i>	<i>LMC</i>	<i>EMDE</i>	<i>EAS</i>
26	Libya	oil, NG		F	UMC	EMDE	MEA
27	Mauritania		ME	M	LMC	EMDE	SSF
28	Mongolia	coal	ME	<i>FM</i>	<i>UMC</i>	<i>EMDE</i>	<i>EAS</i>
29	Montenegro		MI, ME	M	UMC	EMDE	ECS
30	Mozambique	NG, coal	MI	FM	LIC	EMDE	SSF
31	Myanmar	NG	MI, ME	FM	LMC	<i>EMDE</i>	<i>EAS</i>
32	Namibia		MI, ME	M	UMC	EMDE	SSF



	COUNTRY	RESOURCE		RT WB	Classification according to development		Geographical region
					IMF		
33	Niger	uranium, oil	MI, ME	FM	LIC	EMDE	SSF
34	Nigeria	oil, NG		<i>F</i>	<i>LMC</i>	<i>EMDE</i>	<i>SSF</i>
35	Norway	oil, NG		F	HIC	AE	ECS
36	Oman	oil, NG		F	HIC	EMDE	MEA
37	Peru	oil, NG	ME	<i>FM</i>	<i>LCN</i>	<i>EMDE</i>	<i>LCN</i>
38	Qatar	oil, NG		F	HIC	EMDE	MEA
39	Russian Federation	oil, NG, coal		F	HIC	EMDE	ECS
40	Rwanda		MI	<i>M</i>	<i>LIC</i>	<i>EMDE</i>	<i>SSF</i>
41	Saudi Arabia	oil, NG		F	HIC	EMDE	MEA
42	South Africa	coal	ME	FM	UMC	EMDE	SSF
43	Trinidad and Tobago	oil, NG		<i>F</i>	<i>HIC</i>	<i>EMDE</i>	<i>LCN</i>
44	Turkmenistan	oil, NG		F	UMC	EMDE	ECS
45	United Arab Emirates	oil, NG		F	HIC	EMDE	MEA
46	Venezuela, RB	oil, NG		F	UMC	<i>EMDE</i>	<i>LCN</i>
47	Yemen, Rep.	oil, NG		F	LIC	EMDE	MEA
48	Zambia		MI, ME	M	LMC	EMDE	SSF
49	Zimbabwe		MI, ME	M	LMC	EMDE	SSF

Additional information. **WB** – World Bank, **IMF** – International Monetary Fund, **TNRR** – total natural resource rent, **TNRE** – total natural resource export, **NG** – natural gas, **MI** – minerals, **ME** – metals, **Italic** – both TNRR and TNRE exceeded the established limit, **No italics** – only TNRE exceeded the established limit, **EAS** – East Asia & Pacific, **ECS** – Europe & Central Asia, **LCN** – Latin America & Caribbean, **MEA** – Middle East & North Africa, **NAC** – North America, **SAS** – South Asia, **SSF** – Sub-Saharan Africa.

WB classification according to development: **LIC** – Low income (\$1,145 or less), **LMC** – Lower middle income (\$1,146 to \$4,515), **UMC** – Upper middle income (\$4,516 to \$14,005), **HIC** – High income (\$14,006 or more).

IMF classification according to development: **AE** – Advanced Economies, **EMDE** – Emerging Market and Developing Economies.

 **M:** ores and metals  **F:** fuels  **FM:** fuels and ores and metals.

Source: Own preparation.



Table 4. Natural resource funds

	COUNTRY	FUND NAME	DATE OF ESTABLISHMENT S	FUND TYPE			INVESTMENT TYPE				ES
				I	SFG	Domestic	International	Short-term	Long-term		
1	Algeria	Revenue Regulation Fund	2000	X			X			X	
2	Angola	Fundo Soberano de Angola	2012			X	X	X		X	X
3	Armenia	none									
4	Azerbaijan	State Oil Fund of the Republic of Azerbaijan	1999			X	X	X	X	X	X
5	Bahrain	Future Generations Reserve Fund	2006			X	X	X		X	
6	Bolivia	none									
7	Brunei Darussalam	Brunei Investment Agency	1983	X	X	X	X	X	X	X	
8	Cameroon	Caisse de Stabilisation des Prix des Hydrocarbures	1974	X			X		X		
9	Canada	Alberta Heritage Savings Trust Fund	1976			X	X	X		X	
10	Chile	Social and Economic Stabilization Fund	1985(2006)	X				X	X	X	X
		Pension Reserve Fund	2006			X	X	X			X
11	Colombia	Colombia Savings and Stabilization Fund	2012	X				X	X		
12	Congo, Rep.	none									
13	Ecuador	none									
14	Egypt, Arab Rep.	none									
15	Equatorial Guinea	Fund for Future Generations	2002			X		X		X	
16	Gabon	Sovereign Wealth Fund of the Gabonese Republic	1998(2012)			X	X	X	X	X	X
17	Georgia	none									
18	Guinea	none									
19	Indonesia	none									



	COUNTRY	FUND NAME	DATE OF ESTABLISHMENT S	FUND TYPE			INVESTMENT TYPE				45
				I	SFG	Domestic	International	Short-term	Long-term		
20	Iran, Islamic Rep.	Oil Stabilization Fund	2000-2010	X			X	X	X		
		National Development Fund of Iran	2011		X		X	X	X	X	
21	Iraq	none									
22	Jamaica	none									
23	Kazakhstan	National Fund of the Republic of Kazakhstan	2000	X				X	X		
		National Investment Corporation	2012			X		X		X	
24	Kuwait	Kuwait Investment Authority	1953			X		X	X	X	
25	Lao PDR	none									
26	Libya	Libyan Investment Authority	2006			X		X	X	X	
27	Mauritania	National Fund for Hydrocarbon Reserve	2006	X							
28	Mongolia	Fiscal Stability Fund	2011	X			X	X	X		
29	Montenegro	none									
30	Mozambique	none									
31	Myanmar	none									
32	Namibia	none									
33	Niger	none									
		Excess Crude Account	2004-2010	X			X	X	X		
34	Nigeria	Stabilization Fund	2011	X			X	X	X		
		The Nigeria Sovereign Investment Authority	2011			X	X	X		X	
		Nigeria Infrastructure Fund	2011		X		X			X	



	COUNTRY	FUND NAME	DATE OF ESTABLISHMENT S	FUND TYPE			INVESTMENT TYPE				as
				I	SFG	Domestic	International	Short-term	Long-term		
35	Norway	Government Pension Fund Global	1990			X			X		X
36	Oman	State General Reserve Fund	1980-2019	X			X		X		X
		Oman Investment Fund	2006-2019		X		X		X		X
		Oman Investment Authority	2020			X		X		X	X
		National Development Fund	2020		X		X			X	X
37	Peru	Fiscal Stabilization Fund	1999	X					X		
38	Qatar	Qatar Investment Authority	2005	X	X	X		X	X		X
39	Russian Federation	Russia's Stabilization Fund	2004-2007	X					X		X
		Reserve Fund	2008-2018	X					X		
		The National Wealth Fund	2008	X	X	X		X		X	
40	Rwanda	none									
41	Saudi Arabia	Public Investment Fund	1971		X	X		X			X
42	South Africa	none									
43	Trinidad and Tobago	Interim Revenue Stabilization Fund	2000-2006	X				X		X	
		Heritage and Stabilization Fund	2007	X		X		X		X	
44	Turkmenistan	Stabilization Fund	2008	X						X	
45	United Arab Emirates	Abu Dhabi Investment Authority	1976		X	X			X		X
		Mubadala Investment Company	2002		X	X		X		X	X
46	Venezuela, RB	Macroeconomic Stabilization	1998-2003	X					X		
		Fondo de Desarrollo Nacional	2005		X		X		X		X



	COUNTRY	FUND NAME	DATE OF ESTAB- LISHMENT S	FUND TYPE			INVESTMENT TYPE			dS
				I	SFG	Domestic	International	Short-term	Long-term	
47	Yemen, Rep.	none								
48	Zambia	none								
49	Zimbabwe	Mutapa Investment Fund	2014	X	X		X		X	

Additional information. **S** - stabilization funds, **I** - investment funds, **SFG** – savings funds (funds for future generations), **SP** - Compliance with the Santiago Principles.

Source: Own preparation based on the data provided by the Natural Resource Governance Institute, International Forum of Sovereign Wealth Funds, Sovereign Wealth Fund Institute and official websites of individual funds.