# Financial Development in the Shadow of the Resource Curse: The Role of Political Stability and Fiscal Decentralization in the European Union Countries

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**Abstract**

This study investigates the impact of political stability and the natural resource curse on financial development in the ten European economies with the highest fiscal decentralization rates from 2002 to 2020. To analyze the short and long-term relationships, panel data methods were used. Panel VAR and VECM models were applied for panel causality analyses, and AMG and CCE estimators were used for cointegration. In the short run, only natural resource revenues significantly affect financial development. However, in the long run, a collective causality from per capita income, political stability, fiscal decentralization, and natural resource revenues to financial development is observed. Parameter estimates reveal that fiscal decentralization and political stability significantly influence financial development, though the effect varies across countries. In Austria and Latvia, fiscal decentralization appears to mitigate the natural resource curse's effects, whereas in other countries, the negative impacts of institutional weakness and natural resource revenue volatility are evident. The study demonstrates a long-run interaction between fiscal decentralization, natural resource revenues, political stability, and financial development, with governance structure as the primary mediating variable. Empirical findings suggest that policies aimed at mitigating the negative effects of the natural resource curse should focus on strengthening institutional reforms alongside fiscal decentralization.

*Keywords:* Political stability, Fiscal decentralization, Resources curse, Financial development

## Kaynak Lanetinin Gölgesinde Finansal Gelişme: Avrupa Birliği Ülkelerinde Siyasal İstikrar ve Mali Merkezsizleşmenin Rolü

**Öz**

Bu çalışma, 2002-2020 yılları arasında en yüksek mali adem-i merkeziyet oranlarına sahip on Avrupa ekonomisinde siyasal istikrarın ve doğal kaynak lanetinin finansal gelişme üzerindeki etkisini araştırmaktadır. Değişkenler arasındaki kısa ve uzun dönemli ilişkileri analiz edebilmek amacıyla panel veri ekonometrisine dayalı ampirik yöntemler kullanılmıştır. Panel nedensellik analizleri için Panel VAR ve VECM modelleri uygulanmış, uzun dönemli eşbütünleşme ilişkilerini ve heterojenliği dikkate almak üzere AMG ve CCE tahmincilerine başvurulmuştur. Kısa vadede, finansal gelişmeyi yalnızca doğal kaynak gelirleri önemli ölçüde etkilemektedir. Ancak uzun vadede, kişi başına düşen gelir, siyasal istikrar, mali adem-i merkeziyetçilik ve doğal kaynak gelirlerinden finansal gelişmeye doğru bütünsel bir nedensellik gözlemlenmektedir. Parametre tahminleri, mali adem-i merkeziyetçilik ve siyasal istikrarın finansal gelişmeyi önemli ölçüde etkilediğini, ancak bu etkinin ülkeler arasında farklılık gösterdiğini ortaya koymaktadır. Avusturya ve Letonya'da mali adem-i merkeziyetçilik doğal kaynak lanetinin etkilerini hafifletiyor görünürken, diğer ülkelerde kurumsal zayıflığın ve doğal kaynak geliri oynaklığının olumsuz etkileri belirgindir. Çalışma, mali adem-i merkeziyetçilik, doğal kaynak gelirleri, siyasal istikrar ve finansal gelişme arasında uzun vadeli bir etkileşim olduğunu ve yönetişim yapısının bu etkileşimi sağlayan başlıca aracı değişken olduğunu göstermektedir. Ampirik bulgular, doğal kaynak lanetinin olumsuz etkilerini azaltmayı amaçlayan politikaların, mali adem-i merkeziyetçiliğin yanı sıra kurumsal reformları güçlendirmeye odaklanması gerektiğini göstermektedir.

*Anahtar Kelimeler:* Siyasal istikrar, Mali adem-i merkeziyetçilik, Doğal kaynak laneti, Finansal gelişme

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## Introduction

Since there is a strong relationship between financial development and economic growth, financial development is essential for countries striving to achieve sustainable economic growth (Wang et al., 2021). In addition, fiscal decentralization has also been shown to have a positive effect on price stability, especially in developed countries (Reingewertz, 2014). Fiscal decentralization strengthens government accountability by meeting local preferences and promoting economic development, which in turn increases the efficiency of public services (Alfada, 2019; Altunbaş & Thornton, 2011). Additionally, its relationship with economic growth is shaped by various macroeconomic factors, including political stability, natural resource revenues, and fiscal discipline. Political stability refers to a political environment characterized by government continuity, transparency, predictability, and adherence to the rule of law (Hayewa & Olateju, 2024; Yıldırım & Akdağ, 2023). Both domestic and international economic actors seek to minimize risks when making long-term investment decisions. Reducing political risks enhances investor confidence, leading to greater capital accumulation. Increased capital accumulation stimulates credit demand among economic actors, fostering financial market development (Chletsos & Sintos, 2024; Lompo, 2024; Ullah et al., 2024). Furthermore, political and economic stability positively influence the expectations of savers and investors, enabling them to make more rational, long-term financial decisions. This dynamic not only strengthens financial markets but also supports economic growth, reinforcing long-term sustainability. The effective utilization of natural resource revenues has been widely debated in economic theory, particularly in relation to the "resource curse" hypothesis. While seemingly paradoxical, the resource curse suggests that resource-rich countries often experience slower economic growth due to inefficient allocation of revenues. Instead of enhancing productive economic structures, these revenues are frequently diverted toward inefficient public expenditures, resulting in lower long-term growth rates (Joshia et al., 2024; Song & Hou, 2024). This phenomenon, known as "Dutch disease" increases inefficient investment spending, weakens competitive sectors, and erodes institutional frameworks (Khan et al., 2023; Yan, 2024; Xu et al., 2024). The primary issue underlying the transformation of resource wealth into an economic liability is the misallocation of revenues toward unproductive expenditures, rather than investments that contribute to sustainable economic growth.

This study examines the impact of political stability and the resource curse hypothesis on financial development within the framework of fiscal decentralization in European Union (EU) countries. The primary research question is whether the positive effects of political stability on financial development in fiscally decentralized EU countries can offset the potential negative impacts of natural resource wealth. Additionally, it investigates the role of resource allocation to local governments in this relationship. The significance of this research can be highlighted in several ways.

(i) By modeling the relationship between political stability, the management of natural resource revenues, and financial development while incorporating fiscal decentralization, the study underscores its originality and contribution to the literature. Previous research has examined the positive impact of political stability on financial development (Ullah et al., 2024) and the resource curse hypothesis (Song & Hou, 2024; Yan, 2024) either at the single-country level or across different country groups. However, studies analyzing the interaction between these two phenomena and the role of fiscal decentralization-particularly in high-income countries with well-established institutional structures-remain limited. This study seeks to fill this gap and contribute to economic literature. Another reason for selecting high-income EU countries in this study is their relatively stable institutional structures, high data quality and comparable governance standards (Čižo et al., 2020; Hassan et al., 2019; Khan et al., 2020). These characteristics of the selected group of countries allow us to analyse the impact of political stability and natural resource revenues on financial development. By examining the interaction between political stability, resource dependence and fiscal decentralization within the EU, we aim to provide valuable information for policy makers aiming to alleviate the resource curse and promote sustainable development in resource-rich regions.

(ii) By examining the validity of the resource curse hypothesis in high-income economies, this study offers a fresh perspective. The resource curse hypothesis has primarily been studied in the context of low-income countries Li et al., (2024) and emerging markets Cui et al., (2023). However, it remains underexplored in high-income nations. This research tests its applicability in EU countries while accounting for their institutional frameworks.

(iii) The study provides concrete findings on how financial resources and policy instruments available to local governments help mitigate the negative effects of natural resource revenues. Fiscal decentralization

grants local governments flexibility in decision-making, which can support the diversification of local economies and the achievement of development goals (Armawaddin et al., 2022).

(iv) Although the countries examined in this study exhibit varying degrees of fiscal decentralization, all are EU member states with prior experience in decentralized governance. The economies analyzed demonstrate heterogeneity in terms of commodity revenues and political environments. For example, while Spain faces separatist regional movements, Sweden and Finland maintain relative political stability.

(v) The countries included in this panel also differ in terms of financial development, allowing for a comparative analysis of how commodity revenues and political stability influence economies at different development stages-ranging from highly developed (e.g., Germany and Netherlands) to less developed (e.g., Latvia and Estonia).

In this study, panel data methodology was preferred in order to analyze the changes in units over time and the time-dependent effects simultaneously. First, horizontal cross-section dependence tests are used to determine whether there are common macroeconomic shocks across economies in the EU economic integration process. Therefore, CD and LM tests proposed by Breusch and Pagan (1980), Pesaran (2004) and Pesaran et. al. (2008) are applied. Secondly, the bootstrap panel unit root test proposed by Smith et al. (2004) is applied to determine the stationarity of the variables in the model. Third, Westerlund (2007) panel cointegration test is applied to test whether the variables in the model are in a long-run relationship. Through this test, the error correction term is included in the model. Panel VAR is applied to detect the short-run causality relationship and panel VECM methods are applied to detect the long-run causality relationship. Finally, panel data estimators that take heterogeneity and horizontal cross-section dependence into account are used. AMG (Augmented Mean Group) and CCE (Common Correlated Effects) estimators produce regressions that take heterogeneity into account for each horizontal cross-section. The use of both estimators in empirical analyses makes it possible to evaluate both country-specific and common economic integration policies.

This introduction continues with a review of the literature on political stability, the resource curse hypothesis, and fiscal decentralization. Empirical findings, based on the dataset and panel data methodology, follow. The conclusion summarizes the research's key findings.

## Theoretical Framework and Literature Review

Neoclassical growth models identify technological progress and capital accumulation as the primary drivers of output growth, assuming constant initial conditions. Commodity revenues, considered exogenous and fixed, are not seen as growth sources. However, sustained positive contributions of commodity revenues to output challenge these models. Neoclassical economics adapts by arguing that failure to integrate these revenues into the production process hinders growth. The resource curse, in this context, represents a failure of these models to accurately predict outcomes when economies, instead of investing in capital accumulation and technological development, rely on commodity revenues (King & Rebelo, 1990). Institutional economics, conversely, links output growth to the strength of the institutional structure (North, 1990). It posits that in resource-rich countries, weak institutions negatively impact financial development, as commodity revenues foster corruption and rent-seeking in the public sector. This deteriorates the investment climate by making the distribution of commodity revenues less competitive and more politically driven, discouraging both domestic and foreign investment (Acemoglu & Robinson, 2012). Thus, institutional economics attributes the resource curse to poor management of resource revenues stemming from weak institutions, rather than the revenues themselves. Behavioral economics adds another layer, examining how the resource curse influences expectations regarding future income, savings, and investment. The expectation that commodity revenues will persist reduces the marginal propensity to save (Kahneman & Tversky, 1979). Consequently, behavioral economics links the resource curse not just to institutional structures, but also to resultant human behavior. In conclusion, across various economic schools, a dependence on commodity revenues is seen to hinder financial market development. Countries with substantial commodity revenues often exhibit weak institutions, shallow financial depth, limited competitiveness, and stifled innovation, leading to the expectation of poorly functioning financial markets.

Financial development makes it possible for companies to get the capital required to support Research and Development (R&D) initiatives that have the potential to boost economic expansion (Wang et al., 2021). Thus, the economic literature extensively explores the relationship between political stability and financial development, generally finding a positive correlation. A politically stable environment,

characterized by consistent public services, a transparent legal framework, and accountability, fosters financial development (Hayewa & Olateju, 2024; Yıldırım & Akdağ, 2023). Hayewa and Olateju (2024) used econometric methods based on panel data analysis to analyze the economic growth dynamics of the West African Monetary Zone (WAMZ) countries. In the study, firstly, panel unit root tests were applied to evaluate the time series properties of the variables, and then the panel Vector Autoregressive (VAR) model was used to reveal the interactions and causal relationships between the countries. Findings of this study, which were based on data from 2000 to 2020, show that while political stability and the rule of law have a positive effect on economic growth, corruption has a negative impact in WAMZ countries. On the other hand, Yıldırım and Akdağ (2023) used the Two-Stage System Generalized Method of Moments (System GMM) in their study, which analyzed the effects of political stability and democracy on the development of the financial system in Sub-Saharan African countries. While the financial institutions development index was taken as the dependent variable, the main explanatory variables were political stability and democracy variables, and the control variables of GDP per capita, trade openness, inflation rate, foreign direct investments and urban population rate were added to the study as control variables.          The study concluded that political stability and democracy boost financial development based on data from 2002 to 2019. Furthermore, whereas trade openness and income growth have a positive impact on financial development, inflation has a negative impact.

Political stable environments maintains economic actors' expectations, supports long-term investment, and builds confidence in financial markets (Lompo, 2024; Chletsos & Sintos, 2024). Chletsos and Sintos (2024), who examined the effect of political stability on the development of institutions and markets using the Two-Stage Least Squares (2SLS) method using data covering 123 countries between 1980 and 2017, argue that strong institutional frameworks and democratic policies enhance this effect. Similarly, Rehman et al. (2024) link political stability's positive impact on financial development to a more diversified production structure. In contrast, a politically unstable country makes it difficult for the financial system to function due to two issues: moral hazard and adverse selection circumstances (Hussain et al. 2021).

On the other hand, some studies present contrasting findings. Ullah et al. (2024) tested the relationship between political stability, financial development, economic growth, economic growth volatility and financial stability using the Panel Corrected Standard Errors (PCSE) method using data from 33 developing countries for the period 1980-2020; and tested the robustness of the results using the Generalized Method of Moments (GMM). The author found a non-linear relationship in low-income economies, where political stability can hinder financial market efficiency due to price distortions and hysteresis effects. Similarly, testing the effects of political instability of the West African Economic and Monetary Union (WAEMU) countries on financial development using the Distributed Lag Model (ARDL) for the period 2002-2021, Lompo (2024) also reports a negative impact, attributing it to deteriorated price stability and the invalidation of the Fisher effect. Despite these contrasting views, political stability is generally seen to support sustainable economic growth by fostering financial market development (Hayewa & Olateju, 2024; Yıldırım & Akdağ, 2023).

Fiscal decentralization also has a substantial impact on local economic activity and financial prosperity (Chen et al., 2024). In an increasingly financialized economy, it empowers local governments to adapt, enhance revenue potential, and utilize alternative financial instruments for regional development and infrastructure projects. This strengthens local governments' capacity to tailor economic policies and respond more effectively to local needs. For example, Indonesia's experience demonstrates that fiscal decentralization can positively impact development (Armawaddin et al., 2022). In their study, which tested the data obtained from 34 regions between 2015 and 2019 with structural equation modeling (SEM), the authors were concluded that fiscal decentralization performance has a positive and significant effect on development performance in Indonesia.

Transparent division of labor and coordination between central and local governments are essential. Empirical research indicates that fiscal decentralization's impact on regional development can vary, sometimes exhibiting an inverted U-shaped relationship, with differing effects on health and social security expenditures (Wang et al., 2022). While expenditure decentralization promotes growth, revenue decentralization may correlate with lower growth rates, underscoring the importance of demographic considerations (Pasichnyi et al., 2019). Therefore, policies should be tailored to demographic structures. In low-income countries, fiscal decentralization positively impacts regional development, improving project success rates, long-term investments, output growth, and employment (Tchouassi & Dzou, 2020). These findings emphasize allocating more resources to local governments for fair and balanced regional

development. In conclusion, both political stability and fiscal decentralization are crucial for fostering financial development and supporting output growth (Hayewa & Olateju, 2024; Yıldırım & Akdağ, 2023; Armawaddin et al., 2022). These two concepts are complementary, reinforcing each other in building a robust production structure.

## Data and model

The study analyzes the economies of Austria, Belgium, the Czech Republic, Estonia, Germany, Hungary, Latvia, the Netherlands, Spain, and Sweden from 2002 to 2020. Table 1 presents the variables' symbols, data sources, and corresponding hypotheses.

**Table 1.** *Definitions*

| Data | Symbol | Source | Hypothesis |
|---|---|---|---|
| Financial Development Index | FD | IMF | - |
| Fiscal Decentralization (expenditures to general government revenues) | FDS | IMF | FDS positively affects FD |
| Gross domestic product per capita in US dollars | lnGDPPC | WB | lnGDPPC positively affects FD |
| Total Natural Resources Rent | TNR | WB | TNR positively affects FD |
| Political Stability | PS | WB | PS positively affects FD |

This study employs a fiscal decentralization variable, as used in Wang et al. (2021), Li et al. (2022), and Ahmad and Satrovic (2023). FD is measured using indicators from both institutions and markets, including financial depth (size and liquidity), credit accessibility, and cost efficiency. FDS allows for the measurement of decentralization by calculating the cost-sharing ratio between central and local governments. lnGDPPC serves as a proxy for economic size, while TNR-the ratio of commodity revenues to output-reflects an economy's dependence on natural resources. PS is between -2.5 (lowest political stability) and +2.5 (highest political stability) and captures the risk of government change and the probability of political violence. Per capita income (Ehigiamusoe et al., 2021; Wesiah & Onyekwere, 2021), total natural resource rents (Ibrahim & Ajide, 2021), and political stability (Çalışkan, 2019; Chletsos & Sintos, 2024) are incorporated based on existing literature. Macroeconomic interdependence among integrated economies heightens the possibility of cross-sectional dependence (CSD). Due to Brexit, the migrant crisis, international security crises, political instability, fluctuations in commodity prices, paradigm shifts in energy supply, the European Central Bank's common monetary policy, and Basel regulations, economies are expected to be affected by each other in terms of financial development variables. Given the potential for interdependence among the panel's countries regarding these variables, we first examine the presence of CSD using tests developed by Breusch and Pagan (1980), Pesaran (2004), and Pesaran et al. (2008). This examination is crucial, as the presence of cross-sectional dependence can significantly influence study outcomes (Wooldridge, 2010). In the Lagrange Multiplier (hereafter LM) test, $LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2$ and $LM_{adj} = \sqrt{\frac{2}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2 \frac{(T-k)\hat{\rho}_{ij}^2 - \mu_{Tij}}{\sqrt{\vartheta_{Tij}^2}}$ (Breusch and Pagan, 1980, Pesaran et al. 2008). In CD tests, test statistics are calculated as $CD_{LM} = \sqrt{\frac{1}{N(N-1)} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} (T\hat{\rho}_{ij}^2 - 1)}$ and $CD = \sqrt{\frac{2T}{N(N-1)} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2}$ (Pesaran, 2004). If the probability values in the hypothesis testing phase are below the significance level, the alternative hypothesis indicating the presence of CSD is accepted.

**Table 2.** *Cross Section Dependency*

| | FD | FDS | lnGDPPC | TNR | PS |
|---|---|---|---|---|---|
| LM | 80.848 (0.00)[a] | 61.297 (0.053)[c] | 159.358 (0.00)[a] | 108.497 (0.00)[a] | 66.583 (0.02)[b] |
| CD$_{LM}$ | 3.779 (0.00)[a] | 1.718 (0.043)[b] | 12.054 (0.00)[a] | 6.693 (0.00)[a] | 2.275 (0.011)[b] |
| CD | -2.444 (0.00)[a] | -2.074 (0.019)[b] | -1.630 (0.052)[c] | -1.456 (0.073)[c] | -2.455 (0.00)[a] |
| LM$_{adj}$ | 1.259 (0.104) | 7.559 (0.00)[a] | 1.826 (0.034)[b] | 5.526 (0.00)[a] | 1.262 (0.103) |

**Notes:** p<0.01 a, p<0.05 b, p<0.1 c, LM BP(1980), CD$_{LM}$ and CD Peseran (2004), LM$_{adj}$ PUY (2008)

Table 2 presents CSD test results for each variable. According to the CD$_{lm}$ and LM tests, financial developments exhibits CSD at the 1% significance level, while political stability shows CSD at the 5% level. Additionally, all tests consistently indicate the presence of CSD for FDS, lnGDPPC, and TNR, although the significance levels vary. The financial development index exhibits CSD due to several interconnected factors, including the Eurozone's common currency, enhanced liquidity stemming from portfolio

diversification, coordinated monetary policy responses to global economic crises, and broader trends in financial deepening (Asteriou & Spanos, 2019; Khalid & Shafiullah, 2021). Common regional economic policies within the EU, both during and after the membership process, contribute to CSD in the FDS variable. For economically integrated countries, CSD in lnGDPPC stems from factors such as trade linkages, factor mobility, conditional beta convergence, responses to exogenous supply shocks, global growth trends, and similar production structures (Aslanidis & Fountas, 2014; Pietrzykowski, 2019). With respect to TNR, the presence of CSD is likely driven by concerns over energy supply security, coordinated energy policies, fluctuations in commodity prices, and the influence of commodity trade on overall trade volumes (Peipei et al., 2023). Although political stability is typically supported by the EU's institutional structure, the Brexit process and the EU's ties with both Russia and the USA have prompted EU countries to establish political stability common ground. (Corovei & Socol, 2019).

The 2008 global economic crisis led to significant structural shifts in the financial indicators of national economies, which, in turn, influenced the expenditure patterns of local governments. The expansion of private sector credit drove financial development ratios prior to the financial crisis, but in the post-crisis era, reforms like risk management, financial market regulation, and reorganization of capital adequacy ratios gained prominence (Beck et. al., 2010). Crises in financial markets directly impact both political stability and key financial ratios. Rising public debt levels in EU economies, a shift toward more devolved budgetary policies, and surging unemployment rates heightened political risks. The asymmetric nature of the output expansion process in the post-crisis period has led to the emergence of institutional differences in EU economies. While Germany and Scandinavian economies experienced a faster recovery process thanks to their strong institutional structures, Southern European economies (such as Greece, Spain, Italy, Portugal) faced political risks due to their high public debt stocks and weak institutional structures (Gennaioli et al., 2014). Accordingly, one of the primary causes of the empirical analysis period's heterogenity seems to be the short- and long-term impacts of financial development brought on by the global economic crisis of 2008 on political stability.

The panel unit root test proposed by Smith et al. (2004) employs bootstrap-generated critical values to enhance robustness. The test evaluates whether the variables are influenced by endogenous and exogenous economic shocks over the study period. This PUR provides more robust results in the presence of CSD than traditional PUR and when T is small (Smith et. al., 2004). Since it is based on KPSS, it minimizes the probability of deviation in series with deterministic components such as fixed terms and trends (Smith et al., 2004). It takes heterogeneity into account by producing separate test statistics for each cross-section in the panel and ultimately providing results at the panel level. The LM test statistic is defined as $\overline{LM} = N^{-1} \sum_{i=1}^{N} LM_i$ and LM is the arithmetic mean of the test statistics. $\tilde{\Delta}$ and $\tilde{\Delta}_{adj}$ tests are used to examine the null hypothesis that all cross-sectional units in the panel share a common slope coefficient. CSD has already been discussed. In the homogeneity test proposed by Peseran and Yamagata (2008), $\widetilde{\Delta} = \sqrt{N} \left( \frac{N^{-1} \check{S} - k}{\sqrt{2k}} \right)$ and $\widetilde{\Delta}_{adj} = \sqrt{N} \left( \frac{N^{-1} \tilde{S} - E(\tilde{Z}_{iT})}{\sqrt{var(\tilde{Z}_{iT})}} \right)$ are obtained. As mentioned earlier, the calculated probability values are used in the decision phase. The cointegration test examines whether FDS, lnGDPPC, TNR and PS variables have an impact on FD in the long run. Westerlund (2007, 2008) developed a cointegration model to test whether the error correction term is zero.

$$\alpha_i(L)\Delta y_{it} = \delta_{1i} + \delta_{2i}t + \alpha_i(y_{it-1} - \hat{\beta}_i x_{it-1}) + \gamma_i(\grave{L})\vartheta_{it} + \varepsilon_{it}$$

if $\alpha_i = 0$, there is no cointegration in the model. A question arises regarding the parameter estimates used in empirical analyses. Are the parameters for each country in the panel identical? The answer to this question is provided by the homogeneity test in econometric theory. The Westerlund (2007) panel cointegration test incorporates the dynamics of the error correction mechanism directly into the model, is sensitive to CSD and heterogeneity and provides more robust results than conventional panel cointegration tests. As a result, each countries' long-term ties are assessed with more accuracy.

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**Table 3.** *Smith et al. (2004) "bootstrap" Panel PUR, CSD, Delta Tests, Cointegration*

| | Constant | | | Constant and Trend | |
|---|---|---|---|---|---|
| | | **Bootstrap** | | | **Bootstrap** |
| *Levels* | **Statistic** | **p-value** | | **Statistic** | **p-value** |
| FD | -2.118 | 0.016[b] | | -2.877 | 0.012[b] |
| FDS | -1.820 | 0.136 | | -2.452 | 0.152 |
| lnGDPPC | -3.363 | 0.00[a] | | -2.964 | 0.064[c] |
| *TNR* | -2.117 | 0.116 | | -2.265 | 0.416 |
| *PS* | -2.567 | 0.00[a] | | -2.672 | 0.046[b] |
| *First difference* | | | | | |
| FD | -3.113 | 0.00[a] | | -2.727 | 0.032[b] |
| FDS | -4.136 | 0.00[a] | | -3.241 | 0.00[a] |
| lnGDPPC | -3.291 | 0.012[b] | | -3.459 | 0.044[b] |
| *TNR* | -4.528 | 0.00[a] | | -4.671 | 0.00[a] |
| *PS* | -3.655 | 0.00[a] | | -3.882 | 0.00[a] |

*Panel B. CSD and Delta Tests*

| | Statistic | Asymptotic p-value | Bootstrap p-value |
|---|---|---|---|
| *CDS tests:* | | | |
| LM | 74.083 | 0.00[a] | - |
| $CD_{LM}$ | 3.066 | 0.00[a] | - |
| CD | 4.987 | 0.00[a] | - |
| $LM_{adj}$ | 4.847 | 0.00[a] | - |
| *Delta tests:* | | | |
| $\tilde{\Delta}$ | 4.517 | 0.00[a] | - |
| $\tilde{\Delta}_{adj}$ | 5.399 | 0.00[a] | - |

*Panel C. LM bootstrap ( $LM_N^+$ ) Panel Cointegration*

| | | | |
|---|---|---|---|
| Constant | 24.348 | 0.016[b] | 0.00[a] |
| Constant and Trend | 45.767 | 0.058[c] | 0.00[a] |

**Notes:** The maximum lag length 4, 5000 bootstrap distributions. p<0.01 a, p<0.05 b, p<0.1 c

FD is found to be stationary at the 5% significance level in both the fixed-effects and fixed-trend models. Similarly, lnGDPPC and PS are stationary at the 1% level under the level specification, while in the trend model, they are stationary at the 10% and 5% levels, respectively. These findings suggest that FD, lnGDPPC, and PS were not exposed to endogenous or exogenous shocks of sufficient magnitude to affect their long-term means in the sample countries over the 2002-2020 period. Post-2008 global crisis, FD's level stationarity can be attributed to factors such as the ECB's liquidity support, Basel III regulations on commercial bank capital ratios, the prevention of public debt monetization through legal frameworks, and the adoption of financial innovations within an effective timeframe (Wu et al., 2010; Worthington & Higgs, 2010). The stationarity of lnGDPPC is likely attributable to shared fiscal and monetary frameworks, convergence in per capita income, rising marginal labor productivity, mobility of production factors, institutional resilience to economic shocks, and relatively low population growth (Reza & Zahra, 2008; Simionescu, 2017; Formánek, 2019). Conversely, FDS and TNR exhibit a unit root at level but become stationary in their first differences. Fiscal decentralization is subject to evolution through constitutional amendments and structural reforms, particularly in federal or decentralized governance systems. European countries may experience long-run deviations from their institutional trajectories due to fluctuations in the degree of local government autonomy (Tselios & Rodríguez-Pose, 2020). Although the panel countries generally have well-developed production infrastructure and limited reliance on natural resource revenues, TNR exhibits a unit root at level. This is largely attributed to energy price volatility stemming from supply-demand imbalances and geopolitical tensions in oil-exporting countries. Furthermore, these short-term energy price fluctuations suggest that EU economic policies and energy diversification initiatives have been insufficient to fully mitigate these effects.

The CD and LM test results indicate cross-sectional dependence across the model. Delta tests suggest heterogeneous slope parameters across countries. The panel cointegration model confirms a long-run relationship. This long-run relationship is supported by factors such as strong local government financial structures, the positive impact of economic size on financial development, the effectiveness of natural resource revenue management, the influence of political stability on output, and the reciprocal effect of

output on financial development. In the panel vector autoregression (PVAR) model, the panel error correction model (PVECM) is constructed by adding $\phi_1\hat{\varepsilon}_{it-1}$ and the error correction parameter.

$$\Delta FD = \delta_{1i} + \sum_{p=1}^{k}\delta_{11ip}\Delta FD_{it-p} + \sum_{p=1}^{k}\delta_{12ip}\Delta FDS_{it-p} + \sum_{p=1}^{k}\delta_{13ip}\Delta lnGDPPC_{it-p} + \sum_{p=1}^{k}\delta_{14ip}\Delta TNR_{it-p} + \sum_{p=1}^{k}\delta_{15p}\Delta PS_{it-p} + \phi_1\hat{\varepsilon}_{it-1} + v_{1t} \tag{1}$$

$$\Delta FDS = \delta_{2i} + \sum_{p=1}^{k}\delta_{21ip}\Delta FDS_{it-p} + \sum_{p=1}^{k}\delta_{22ip}\Delta FD_{it-p} + \sum_{p=1}^{k}\delta_{23ip}\Delta lnGDPPC_{it-p} + \sum_{p=1}^{k}\delta_{24ip}\Delta TNR_{it-p} + \sum_{p=1}^{k}\delta_{25p}\Delta PS_{it-p} + \phi_2\hat{\varepsilon}_{it-1} + v_{2t} \tag{2}$$

$$\Delta lnGDPPC = \delta_{3i} + \sum_{p=1}^{k}\delta_{31ip}\Delta lnGDPPC_{it-p} + \sum_{p=1}^{k}\delta_{32ip}\Delta FD_{it-p} + \sum_{p=1}^{k}\delta_{33ip}\Delta lnFDS_{it-p} + \sum_{p=1}^{k}\delta_{34ip}\Delta TNR_{it-p} + \sum_{p=1}^{k}\delta_{35p}\Delta PS_{it-p} + \phi_3\hat{\varepsilon}_{it-1} + v_{3t} \tag{3}$$

$$\Delta TNR = \delta_{4i} + \sum_{p=1}^{k}\delta_{41ip}\Delta TNR_{it-p} + \sum_{p=1}^{k}\delta_{42ip}\Delta FD_{it-p} + \sum_{p=1}^{k}\delta_{43ip}\Delta FDS_{it-p} + \sum_{p=1}^{k}\delta_{44ip}\Delta lnGDPPC_{it-p} + \sum_{p=1}^{k}\delta_{45p}\Delta PS_{it-p} + \phi_4\hat{\varepsilon}_{it-1} + v_{4t} \tag{4}$$

$$\Delta PS = \delta_{5i} + \sum_{p=1}^{k}\delta_{51ip}\Delta PS_{it-p} + \sum_{p=1}^{k}\delta_{52ip}\Delta FD_{it-p} + \sum_{p=1}^{k}\delta_{53ip}\Delta FDS_{it-p} + \sum_{p=1}^{k}\delta_{54ip}\Delta lnGDPPC_{it-p} + \sum_{p=1}^{k}\delta_{55p}\Delta TNR_{it-p} + \phi_5\hat{\varepsilon}_{it-1} + v_{5t} \tag{5}$$

There are five different models in which the variables used in the model are individually included as dependent variables The null hypotheses for short-run causality in this model Model 1 is $\sum_{p=1}^{k}\delta_{12ip}\Delta FDS_{it-p} = 0$ no causality from fiscal decentralization to financial development, $\sum_{p=1}^{k}\delta_{13ip}\Delta lnGDPPC_{it-p} = 0$ that there is no causality from income per capita to financial development, $\sum_{p=1}^{k}\delta_{14ip}\Delta TNR_{it-p} = 0$ no causality from total natural resources rent to financial development, $\sum_{p=1}^{k}\delta_{15ip}\Delta PS_{it-p} = 0$ tests for no causality from political stability to financial development. If the alternative hypothesis is accepted, causality exists. In the long-run causality test, the null hypothesis is $\phi_1\hat{\varepsilon}_{it-1} = 0$, which tests for the absence of causality from independent variables to financial development as a whole. Since PVECM examines both short-term and long-term relationships simultaneously, PVECM is a version of PVAR that reveals the cointegration relationship. It does this with ECT. ECT shows the deviation from the long-term equilibrium of the model, and therefore, if ECT is negative, the model is below the long-term equilibrium, and if it is positive, it is above it (Peseran et al., 1999). It also shows how long it takes for the deviation that emerges in the ECT model to be corrected (Banerjee et al., 2004). Accordingly, FDS is the dependent variable in Model 2, lnGDPPC in Model 3, TNR in Model 4, and PS in Model 5. Other alternative regressions are solved in a similar manner.

**Table 4.** *Panel VAR and Panel VECM Causality*

| | **Independent Variable** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Short Run Causality** | | | | | **Long Run Causality** | **Equation** |
| **Dependent Variable** | Δ(FD) | Δ(FDS) | Δ(lnGDPPC) | Δ(TNR) | Δ(PS) | ECT(-1) | |
| Δ(FD) | - | 4.681 (0.196) | 8.733 (0.033)[b] | 1.934 (0.586) | 1.447 (0.694) | -0.299 [-3.220][a] | $\phi_1\hat{\varepsilon}_{it-1}$ |
| Δ(FDS) | 7.475 (0.058)[c] | - | 9.242 (0.026)[b] | 1.302 (0.728) | 0.136 (0.987) | 0.00085 [0.015] | $\phi_2\hat{\varepsilon}_{it-1}$ |
| Δ(lnGDPPC) | 4.671 (0.197) | 0.791 (0.851) | - | 6.607 (0.035)[b] | 9.468 (0.023)[b] | 0.109 [0.794] | $\phi_3\hat{\varepsilon}_{it-1}$ |
| Δ(TNR) | 0.966 (0.809) | 2.280 (0.516) | 1.055 (0.787) | - | 4.134 (0.247) | 1.134 [1.436][c] | $\phi_4\hat{\varepsilon}_{it-1}$ |
| Δ(PS) | 6.010 (0.111) | 16.864 (0.00)[a] | 2.343 (0.504) | 1.087 (0.780) | - | -0.484 [-1.052] | $\phi_5\hat{\varepsilon}_{it-1}$ |

**Notes:** p<0.01 a, p<0.05 b, p<0.1 c, () probability and [] t statistics

In the short run, a causality exists only from FDS to FD at the 10% significance level. The short-term nature of this effect raises questions about sustainability, even if improved access to financial resources for local governments may boost demand for financial products. Consequently, no short-run causality is found from economic size, natural resource revenues, or political stability to financial development. This outcome may be attributed to the fact that increases in disposable personal income are insufficient to sustain the balance between savings and investment. Thus, output growth's lack of impact on longer-term financial investment instruments indicates an absence of financial deepening. Furthermore, considering the natural resource curse phenomenon, natural resource revenues may be directed towards inefficient public

expenditures rather than deepening financial markets, explaining their lack of short-run impact on financial development. Since political stability relies on a robust institutional structure, reforms to improve it are typically realized in the long run. However, in the long run, a unidirectional causality exists from FDS, lnGDPPC, TNR, and PS as a whole towards FD at the 1% significance level. Short-run imbalances in this model are corrected in approximately 3.34 years. Additionally, in the short run, a unidirectional causality is found only from PS to FDS at the 1% significance level and from FD and FDS to lnGDPPC at the 5% significance level. In politically stable economies, natural resource exports and their associated revenues are sustained. These short-term revenues are often used to finance public expenditures on infrastructure and social welfare. In economies with adequate financial development, the diversification of financial instruments increases household savings, boosting commercial banks' lending capacity and positively impacting firms' capital ratios (Asif et al., 2020). In the short run, a causality exists from lnGDPPC to TNR and from lnGDPPC to PS at the 5% significance level. In the model where TNR is the dependent variable, the ECT(-1) coefficient is statistically significant in the long term, but it has a positive sign. This situation may be due to econometric reasons such as missing variables in the model, failure to take structural breaks into account, or weak definition of cointegration relationships, as well as economic factors such as structural fragilities, misguided policy responses, or negative expectations. The findings suggest that the return to long-term equilibrium in the TNR cannot be achieved through its own dynamics and requires effective policy interventions. Economic size supports a stronger institutional structure, and higher welfare growth facilitates the smooth functioning of processes that ensure political stability. When considering the short- and long-run causality results holistically, it is evident that the impact of PS, TNR, and FDS on FD is mediated through lnGDPPC.

Given the long-run cointegration and causality from the independent variables to financial development, understanding the magnitude of these effects is crucial for policy recommendations. Furthermore, due to heterogeneous slope parameters identified in the homogeneity test and differing stationarity levels among the variables, the Augmented Mean Group (AMG) and Common Correlated Effects (CCE) estimators are employed. $y_{it}$ is the dependent variable, $x_{it}$s the vector of independent variables, $\alpha_i$s the constant term for each country, $\beta_i$ is the slope parameters for each country, $u_{it}$ is the error term, as follows;

$$y_{it} = \alpha_i + \acute{\beta}_i x_{it} + u_{it}$$

$f_t$ is the unobserved common factors, $\lambda_i$ is each country's sensitivity to these factors, and, $\varepsilon_{it}$ is the idiosyncratic error term. The error term in this expression contains the common factors.

$$u_i = \acute{\lambda}_i f_t + \varepsilon_{it}$$

is defined as follows. In the first stage, time dummies are added using all the data in the panel. This reveals the dynamics of the unobserved common factors. For this, the first difference of the model is taken.

$$\Delta y_{it} = \alpha_i + \acute{\beta}_i \Delta x_{it} + \sum_{t=2}^{T} \phi_t D_t + \varepsilon_{it}$$

where $D_t$ are dummies for years, $\phi_t$ the common dynamic process obtained from constants over time. In this way $\acute{f}_t$ is obtained. In the second stage, separate regressions are found for each country. However, in this stage, the common factor obtained in the first stage is added to the model.

$$y_{it} = \alpha_i + \acute{\beta}_i x_{it} + \delta_i \acute{f}_t + \varepsilon_{it}$$

In the final stage, the AMG estimator is found by taking the average of the coefficients obtained for each country.

$$\hat{\beta}_{AMG} = \frac{1}{N} \sum_{i=1}^{N} \hat{\beta}_i$$

In the CCE model, cross-sectional means are used instead of directly estimating the unobserved common factors $f_t$. Thus, the regression is estimated as:

$$y_{it} = \alpha_i + \acute{\beta}_i x_{it} + \acute{\gamma}_i \bar{z}_t + \varepsilon_{it}$$

In this expression $\bar{z}_t = (\bar{y}_t, x_t)$ represents the cross-sectional means of the dependent and independent variables, $\gamma_i$ represents the cross-sectional means. As in the AMG method, the coefficients are obtained. As in the AMG method, the coefficients are obtained (Westerlund & Edgerton, 2009; Eberhardt & Bond, 2009). AMG models the effects of structural heterogeneity and CCE models the responses to common shocks. In this study, AMG and CCE results reveal asymmetries in the institutional structures of economies. AMG estimators reveal that the effects of PS, FDS and TNR are different in each country, while CCE estimators reveal the effects of common factors. Accordingly, AMG estimators suggest the development of policies tailored to country-specific conditions, while CCE suggests the feasibility of common policy implementations. CCE, on the other hand, obtains bias-free estimators by modeling the dependence arising from common factors across cross-sections (Eberhardt, 2012). It incorporates the effects of both observable and unobservable common shocks into the model by adding cross-sectional averages to each cross-sectional regression (Pesaran & Tosetti, 2011). CCE is used in panels with strong common effects (Ditzen, 2018). The CCE estimator, like the AMG estimator, provides robust and consistent results against CSD and heterogeneity problems. The CCE method models the effects of unobserved common factors by adding the cross-sectional averages of the variables in the model to the regression of each cross-section (Pesaran & Tosetti, 2011). The reason why the CCE estimator is preferred is that EU economies are economically integrated and the shocks caused by common economic policies can be modeled for each country.

**Table 5.** *CCE and AMG Estimator Results*

| | Constant | FDS | lnGDPPC | TNR | PS |
|---|---|---|---|---|---|
| **Panel A. AMG Estimation** | | | | | |
| Austria | 0.392 (0.42) | 0.666 (0.05)[c] | 0.002 (0.97) | 0.171 (0.43) | -0.0908 (0.12) |
| Belgium | 0.276 (0.71) | -0.307 (0.33) | 0.090 (0.57) | -0.165 (0.70) | -0.017 (0.67) |
| Czechia | -0.182 (0.86) | 0.066 (0.94) | 0.111 (0.43) | -0.051 (0.26) | 0.0703 (0.66) |
| Estonia | 0.135 (0.38) | -0.054 (0.72) | 0.018 (0.36) | 0.013 (0.19) | 0.077 (0.05)[c] |
| Germany | 1.867 (0.00)[a] | -0.322 (0.66) | -0.248 (0.00)[a] | 0.048 (0.71) | 0.019 (0.52) |
| Hungary | -0.303 (0.54) | -0.544 (0.04)[b] | 0.244 (0.07)[c] | -0.040 (0.61) | 0.046 (0.45) |
| Latvia | 0.279 (0.01)[b] | -0.0136 (0.27) | -0.009 (0.67) | 0.038 (0.00)[a] | -0.052 (0.00)[a] |
| Netherlands | 3.488 (0.00)[a] | -0.392 (0.69) | -0.563 (0.00)[a] | -0.004 (0.94) | -0.031 (0.83) |
| Spain | 0.417 (0.51) | 0.340 (0.42) | 0.078 (0.56) | -0.906 (0.15) | 0.074 (0.01)[b] |
| Sweden | 0.329 (0.60) | -0.766 (0.07)[c] | 0.140 (0.23) | 0.002 (0.83) | 0.041 (0.57) |
| Panel | 0.670 (0.06)[c] | -0.146 (0.27) | -0.0135 (0.85) | -0.0893 (0.34) | 0.013 (0.46) |
| **Panel B. CCE Estimation** | | | | | |
| Austria | 5.478 (0.00)[a] | 1.669 (0.00)[a] | -2.828 (0.00)[a] | 1.346 (0.00)[a] | -0.098 (0.00)[a] |
| Belgium | 1.564 (0.14) | 0.358 (0.34) | -1.521 (0.01)[b] | -0.165 (0.67) | -0.020 (0.68) |
| Czechia | -0.324 (0.86) | -0.576 (0.70) | -0.785 (0.14) | -0.112 (0.14) | 0.253 (0.35) |
| Estonia | -0.285 (0.75) | -0.188 (0.38) | 0.093 (0.62) | 0.009 (0.57) | 0.089 (0.11) |
| Germany | -1.484 (0.22) | 0.894 (0.30) | 0.422 (0.45) | 0.199 (0.28) | -0.057 (0.37) |
| Hungary | -0.271 (0.86) | -0.745 (0.13) | -0.011 (0.98) | -0.003 (0.98) | 0.045 (0.75) |
| Latvia | -0.569 (0.21) | -0.119 (0.27) | -0.043 (0.60) | 0.004 (0.78) | -0.002 (0.90) |
| Netherlands | 0.158 (0.90) | -0.998 (0.10) | 1.241 (0.00)[a] | -0.057 (0.20) | -0.078 (0.39) |
| Spain | 0.955 (0.45) | -0.026 (0.95) | -0.120 (0.78) | 1.257 (0.32) | 0.020 (0.62) |
| Sweden | -0.007 (0.99) | -0.635 (0.27) | 0.293 (0.31) | -0.006 (0.83) | -0.035 (0.71) |
| Panel | 0.521 (0.392) | -0.036 (0.88) | -0.325 (0.36) | 0.247 (0.16) | 0.011 (0.72) |

**Note:** $p<0.01$ a, $p<0.05$ b, $p<0.1$ c

Table 5 presents the parameter estimation results. In this study, CCE and AMG methods were presented in a comparative manner. The main reason why the two methods are presented together is that both methods are used for parameter estimators and neither has a clear superiority over the other. In addition, the fact that both parameter estimators give very close results to each other increases the reliability of our study. The close findinds of the results obtained from both estimators strengthens the robustness and reliability of our findings. According to the AMG method, the constant term is statistically significant in Germany, Latvia, and the Netherlands; the FDS parameter is statistically significant in Austria, Hungary, and Sweden; the lnGDPPC parameter is statistically significant in Germany, Hungary, and the Netherlands; the TNR parameter is statistically significant in Latvia; and the PS parameter is statistically significant in Estonia, Latvia, and Spain. According to the CCE method, the constant term, FDS, FDR, and PS parameters are statistically significant in Austria, while the lnGDPPC parameter is statistically significant in the economies of Austria, Belgium, and the Netherlands. Both AMG (0.666, p<0,05) and CCE (1.669, p<0,00) methods indicate that FDS positively affects FD in Austria, likely due to local governments' enhanced access

to financial resources. Conversely, for Hungary and Sweden, our results indicate a negative relationship between fiscal decentralization and financial development. This finding suggests that, in these specific contexts, the potential benefits of decentralization may not have been realized. This outcome could be interpreted through the lens of Agency Theory and is consistent with literature highlighting potential challenges in decentralized governance, such as misalignments in intergovernmental coordination or inefficiencies in the allocation of local resources. For instance, studies on decentralization in Hungary (Vasvári, 2020) and critiques of decision-making processes in Swedish public authorities (Oplotnik & Brezovnik, 2004; Salo & Allwood, 2020) have pointed to similar complexities. Therefore, our empirical result provides evidence that fiscal decentralization is not a universally positive determinant of financial development, and its effects are contingent on the specific institutional framework. In Hungary, per capita income positively impacts financial development, consistent with economic theory. However, in Germany, the Netherlands, Austria, and Belgium, lnGDPPC negatively affects FD. This may be because the diversity and depth of financial instruments in these countries are already above a certain threshold, leading income growth to be directed towards alternative investment instruments rather than traditional financial instruments, potentially contributing to asset bubbles (Hassan et al., 2011). TNR positively impacts FD only in Austria and Latvia. In these economies, a robust institutional structure, price stability, and high marginal propensity to save likely mitigate the potential negative impact of the natural resource curse on financial development. Consistent with economic theory, countries with political instability generally exhibit low levels of financial development (Chletsos & Sintos, 2024). Notably, only in the transition economies of Estonia does political stability positively affect financial development. In Latvia and Austria, however, political stability appears to negatively impact financial development.

## Discussion

This study investigated the complex relationship between TNR, political stability, fiscal decentralization, and financial development in a sample of ten highly fiscally decentralized EU member states. Our findings provide compelling evidence for a conditional fiscal resource curse, where the impact of resource wealth on financial development hinges critically on the strength of political institutions, specifically constraints on executive power, and the structure of fiscal decentralization. This aligns with the growing body of literature emphasizing the contingent nature of the resource curse (e.g., Masi et al., 2018; Mehlum et al., 2006; Robinson et al., 2006). We interpret our PS variable as a proxy for this broader concept, as stable political systems are inherently characterized by stronger institutional checks and balances that limit arbitrary executive power.

This interpretation helps to frame our key findings. Our results suggest that at lower levels of institutional quality-which we infer from contexts where political stability is less robust-increased resource revenues fail to translate into financial development, consistent with the fiscal resource curse hypothesis. This negative relationship can be attributed to several mechanisms identified in the literature. Weak constraints on executives, as argued by Besley and Persson (2011), can lead to a "common interest" failure, where ruling elites prioritize rent-seeking, patronage, and personal enrichment over broad-based development. Resource wealth, in this context, exacerbates the problem by providing readily available funds for these unproductive activities (Andrade & Morales, 2007). This can manifest as a lack of investment in fiscal capacity (Masi et al., 2018), a distortion of economic incentives (Dutch Disease), and a weakening of the overall institutional framework.

However, as constraints on executives increase, the negative impact of TNR diminishes and can even become positive. This supports the argument that strong institutions, characterized by checks and balances, transparency, and accountability, can mitigate or reverse the resource curse (Masi et al., 2018; Wang et al., 2021). Stronger institutions limit the ability of rulers to misappropriate resource revenues, promote a more level playing field for economic actors, and encourage long-term investment in both physical and human capital.

## Conclusion and Policy Implications

The natural resource curse hypothesis has generally been tested in less developed or developing countries. The limited number of studies testing this hypothesis in developed countries points to a significant gap in the relevant literature. Our study addresses this gap by examining the natural resource curse hypothesis and the impact of political stability on financial development in the context of fiscal decentralization. CSD is not uncommon in macroeconomic indicators of countries within the same economic integration. According to results of the study, there is a presence of short-term causality from FD

to lnGDPPC and it may suggest that in high-income countries, FD has facilitated market access, productivity growth, and portfolio diversification. In Austria, Hungary, and Sweden, excessive decentralization may lead to tax competition issues and inequalities in public service provision. Furthermore, the negative coefficients observed in Hungary and Sweden could provide evidence, within the framework of Agency Theory, of local governments' inefficient utilization of financial resources. Austria's experience regarding fiscal decentralization, Hungary and the Netherlands' regarding per capita income, Latvia and Austria's regarding the natural resource curse, and Estonia and Spain's regarding political stability align with economic theory. EU countries exhibit a heterogeneous structure concerning all variables, as evidenced by the heterogenity tests. While Scandinavian countries possess significant commodity revenues, many other member states lack such resources. This distinction complicates the relationship between commodity revenues and financial development within the EU context. Notably, in Austria and Latvia, no evidence of a resource curse is found; instead, commodity revenues appear to positively impact financial development. This suggests that, in these specific contexts, fiscal decentralization may be effectively mitigating the resource curse.

Several factors could explain the Austrian and Latvian cases:

• Stronger Underlying Institutions: Both Austria and Latvia, despite being relatively new EU members (Latvia joined in 2004), have relatively strong institutional frameworks compared to some other countries in the sample. The constraints on executives, while useful, is a broad measure and may not capture all relevant aspects of institutional quality. Austria, in particular, has a long tradition of strong rule of law, effective bureaucracy, and low levels of corruption. These underlying institutional strengths may be crucial in enabling effective fiscal decentralization. This aligns with findings that institutional quality can mitigate the negative effects of natural resource dependence in developed countries through effective governance (Ni et al., 2022).

• Effective Decentralization Design: The specific design of fiscal decentralization likely matters. As Bahl (2008) emphasizes, a well-designed system requires a clear assignment of expenditure responsibilities, adequate revenue-raising powers for subnational governments, and a well-functioning system of intergovernmental transfers. Empirical research confirms that in small EU member states like Latvia, fiscal decentralization significantly improves budget efficiency, provided it is implemented carefully (Stoilova & Patonov, 2012). It's possible that Austria and Latvia have implemented more effective decentralization frameworks than some other countries in the sample. This might involve:

• Greater Revenue Autonomy: Subnational governments in Austria and Latvia may have greater genuine autonomy in setting tax rates and managing their own revenues, promoting accountability (Bahl, 2008). In addition to this, Latvia has exhibited relatively elevated revenue autonomy in comparison to its Baltic counterparts. A comprehensive analysis of a fiscal decentralization index revealed that Latvia attained the highest score (0.52) among the Baltic nations, signifying a more robust subnational financial governance, which bolsters the proposition for enhanced local accountability (Slavinskaitė et al., 2022).

• Capacity Building: Austria and Latvia may have invested more in building the capacity of subnational governments to manage their finances and deliver public services effectively.

• Specific Resource Management: The type and management of natural resources in Austria and Latvia might differ from other countries. While the study uses TNR, the specific resources (e.g., oil, gas, minerals, forests) can have different impacts. It's also possible that Austria and Latvia have implemented more effective policies for managing resource revenues, such as sovereign wealth funds or stabilization funds. Austria's prominent function in the provision of social protection at the local level further substantiates the assertion that fiscal decentralization within the country is executed in a manner that endows local governments with substantial financial accountability. In Austria, municipal authorities dedicate over 20% of their expenditures to social protection-ranking among the highest in Europe (Storonyanska et al., 2019).

• Small size of countries: Austria and Lativa are smaller than the other members of research.

The presence of statistically insignificant coefficients in other economies could be attributed to three potential factors: (i) low power of the parameter estimation methods, (ii) a lack of financial efficiency in these economies, or (iii) increased uncertainty in financial markets due to commodity price volatility (Bjørnland & Thorsrud, 2016). The high sensitivity of EU economies to energy prices, in particular, heightens risk perception and fosters financial instability (Gylfason, 2011). In this context, channeling commodity revenues towards long-term investments could promote financial innovation (Arezki et al.,

2017). To mitigate the resource curse's negative effects, EU economies should implement policies that support both energy source diversification and financial inclusion (Lujala, 2010). The study's empirical results demonstrate that financial development depends not only on output growth and the effective use of natural resource revenues but also on public fiscal policies and political structures. Accordingly, well-designed fiscal decentralization policies and sustained political stability support financial development by reducing the resource curse's negative impacts. For sustainable output growth, an optimal degree of fiscal decentralization should be implemented, accompanied by enhanced accountability of local governments. The tax system should finance public services without disrupting individual financial planning, and commodity revenues should be directed towards diversifying the economy's production structure, supported by environmental policies.

Despite adding to the body of research, this study has several limitations. First, the reliance on aggregate measures of fiscal decentralization and political stability may mask important nuances. Future research should explore more granular measures and consider the specific design features of decentralization frameworks. Second, the econometric analysis, while robust to various checks, cannot definitively establish causality. Unobserved factors could still be influencing the results. Third, the focus on EU countries limits the generalizability of the findings to other contexts, particularly developing countries. By using more advanced econometric techniques, expanding the sample to include a wider range of countries, investigating the role of particular natural resource types, and gathering more detailed data on fiscal decentralization and tax system characteristics, more definitive results may be obtained by future studies.

## Ethical Declaration

Scientific, ethical, and citation guidelines were adhered to during the writing of the study, "*Financial Development in the Shadow of the Resource Curse: The Role of Political Stability and Fiscal Decentralization in the European Union Countries*" No data was falsified, and the study was not submitted to any other academic publication environment for review. Ethics Committee Permission is not required

## Etik Beyan

*"Kaynak Lanetinin Gölgesinde Finansal Gelişme: Avrupa Birliği Ülkelerinde Siyasal İstikrar ve Mali Merkezsizleşmenin Rolü"* başlıklı çalışmanın yazım sürecinde bilimsel kurallara, etik ve alıntı kurallarına uyulmuş; toplanan veriler üzerinde herhangi bir tahrifat yapılmamış ve bu çalışma herhangi başka bir akademik yayın ortamına değerlendirme için gönderilmemiştir. Bu araştırma doküman incelemesine dayalı olarak yapıldığından etik kurul kararı zorunluluğu bulunmamaktadır.

## Statement of Contribution Rate of Researchers

The contribution rates of the authors in the study are equal.

## Araştırmacıların Katkı Oranı Beyanı

Yazarların çalışmadaki katkı oranları eşittir.

## Declaration of Conflict

There is no potential conflict of interest in the study.

## Çatışma Beyanı

Çalışmada herhangi bir potansiyel çıkar çatışması söz konusu değildir.

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## GENİŞ ÖZET

Sürdürülebilir ekonomik büyüme hedefi, kaynakların etkin tahsisini ve inovasyonu teşvik eden gelişmiş bir finansal sistemin varlığına bağlıdır. Buna ek olarak ülkelerin finansal gelişmesi, sadece piyasa dinamikleriyle değil, aynı zamanda siyasal istikrar, doğal kaynak gelirlerinin yönetimi ve mali disiplin gibi çeşitli makroekonomik

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faktörlerin karmaşık etkileşimiyle de şekillenmektedir. Siyasal istikrar, hükümetin sürekliliği, kurumsal şeffaflık ve hukukun üstünlüğü gibi unsurları içermekte olup, yatırımcı güvenini artırarak ve uzun vadeli ekonomik planlamayı teşvik eder ve bu sayede de finansal piyasaların gelişimini desteklenmiş olur. Fakat zengin doğal kaynaklara sahip ülkeler sıklıkla "doğal kaynak laneti" olarak adlandırılan paradoksal bir zorlukla karşılaşabilmektedirler. Bazı ülkelerin doğal kaynak gelirlerine rağmen beklenen ekonomik performansı gösterememelerini ifade eden bu olgu ekonomik teşviklerin bozulması, kurumsal kapasitenin zayıflaması ve kamu kaynaklarının verimsiz kullanılması gibi çeşitli faktörlerin bir araya gelmesiyle ortaya çıkar. Kaynak gelirlerinin üretken yatırımlara yönlendirilmemesi ve kısa vadeli tüketim veya rant arayışı faaliyetlerine harcanması, uzun vadeli sürdürülebilir kalkınmayı da engellemektedir. Bu çalışma, siyasal istikrar, doğal kaynak laneti hipotezi ve finansal gelişme arasındaki karmaşık ilişkileri, özellikle Avrupa Birliği (AB) ülkelerindeki mali adem-i merkeziyetçilik bağlamında incelemektedir. Mali adem-i merkeziyetçilik, merkezi hükümetin mali yetki ve sorumluluklarını yerel yönetimlere devretmesi anlamına gelmektedir. Bu yetki devri ile yerel yönetimler bölgesel ihtiyaçlara daha iyi yanıt verme imkanı elde edebilir, ekonomik çeşitliliği teşvik edilir ve en nihayetinde kamu kaynakları daha etkin ve verimli kullanılabilir. Ancak, yanlış bu yetki genişliği yanlış tasarlanır veya kötü uygulanırsa mali adem-i merkeziyetçilik politikaları, yolsuzluk, hesap verebilirlik sorunları, vergi rekabeti ve bölgesel eşitsizlikler gibi sorunlara da yol açabilir. Bu çalışmanın temel amacı, siyasal istikrarın finansal gelişme üzerindeki olumlu etkilerinin, mali açıdan adem-i merkeziyetçi AB ülkelerinde doğal kaynak lanetinin potansiyel olumsuz etkilerini telafi edip edemeyeceğini araştırmaktır. Buna ek olarak çalışma ayrıca, doğal kaynak gelirlerinin yerel yönetimlere tahsis edilmesinin bu ilişkideki rolünü de incelemektedir. Bu amaçla, 2002-2020 döneminde en yüksek mali adem-i merkeziyet oranlarına sahip on AB ülkesi (Avusturya, Belçika, Çekya, Estonya, Almanya, Macaristan, Letonya, Hollanda, İspanya ve İsveç) analize dahil edilmiştir. Neoklasik büyüme teorileri, kurumsal iktisat ve davranışsal iktisat gibi çeşitli teorik yaklaşımlardan yararlanarak kapsamlı bir çerçeve oluşturan bu çalışmada, neoklasik büyüme teorilerinden teknolojik ilerleme ve sermaye birikiminin ekonomik büyümenin temel itici güçleri olduğunu vurgularken aynı zamanda kurumsal iktisat teorileri ile güçlü kurumların finansal gelişme ve kaynak lanetinin önlenmesi açısından kritik önem taşıdığının üzerinde durulmaktadır. Doğal kaynakların işlenmesi veya satılması dolayısıyla ülke ekonomisine giren para ile mevcut kurumların geliştirilmesi veya yeni ve güçlü kurumların oluşturulması ekonomik kalkınmaya ve finansal gelişmeye olumlu katkı sunmaktadır. 2002-2020 zaman aralığı için seçilmiş 10 AB üyesi ülkenin (Avusturya, Belçika, Çekya, Estonya, Almanya, Macaristan, Letonya, Hollanda, İspanya ve İsveç) panel veri seti kullanılarak finansal gelişme, mali adem-i merkeziyetçilik, siyasal istikrar ve doğal kaynak gelirleri arasındaki ilişkiler ampirik olarak inceleyen çalışmanın analizinde Finansal Gelişme Endeksi (FD), Mali Adem-i Merkeziyet (FDS), Kişi Başına Düşen Gayri Safi Yurtiçi Hasıla (lnGDPPC), Doğal Kaynak Rantı (TNR) ve Siyasal İstikrar (PS) değişkenleri temel alınmıştır. Çalışma, doğal kaynak laneti hipotezini ve mali adem-i merkeziyetçilik bağlamında siyasal istikrarın finansal kalkınma üzerindeki etkisini ampirik olarak inceleyerek ele almaktadır. Smith vd. (2004) panel birim kök testi, FD, lnGDPPC ve PS'nin düzey değerlerinde, FDS ve TNR'nin ise birinci farklarında durağan olduğunu göstermektedir. Parametre tahmini için çalışmada CCE ve AMG yöntemlerini kullanmıştır. FD'den lnGDPPC'ye doğru kısa vadeli nedenselliğin varlığı, yüksek gelirli ülkelerde FD'nin piyasa erişimini, üretkenlik artışını ve portföy çeşitlendirmesini kolaylaştırdığının kanıtı olabilir. Buna karşın Avusturya, Macaristan ve İsveç'te aşırı ademi merkeziyetçilik, vergi rekabeti sorunlarına ve kamu hizmeti sunumunda eşitsizliklere yol açabileceğini göstermektedir. Ayrıca, Macaristan ve İsveç'te gözlemlenen negatif katsayılar, Vekalet Teorisi çerçevesinde yerel yönetimlerin finansal kaynakları verimsiz kullandığına dair kanıt oluşturabilir. Avusturya'nın mali adem-i merkeziyetçilik, Macaristan ve Hollanda'nın kişi başına düşen gelir, Letonya ve Avusturya'nın doğal kaynak laneti ve Estonya ve İspanya'nın siyasal istikrar konusundaki deneyimleri ekonomik teoriyle örtüşmektedir. AB ülkeleri, CSD testlerinins de kanıtladığı gibi emtia gelirleri konusunda heterojen bir yapı sergilemektedir. Bunun temel sebebi olarak ise İskandinav ülkelerinin önemli emtia gelirlerine sahipken, diğer birçok üye devlet bu tür kaynaklardan yoksun olması gösterilebilir. Bu ayrım, AB bağlamında emtia gelirleri ile finansal gelişme arasındaki ilişkiyi karmaşıklaştırmaktadır. Çalışma sonucunda elde edilen bulgulara göre Avusturya ve Letonya'da bir kaynak lanetine dair kanıt bulunmamıştır. Buna karşın emtia gelirleri finansal gelişmeyi olumlu yönde etkilemektedir. Bu sonuç mali adem-i merkeziyetçiliğin kaynak lanetini etkili bir şekilde hafifletebileceği sonucunu göstermektedir. Sonuç olarak, bu çalışma, kaynak zengini ülkelerin finansal gelişme ve sürdürülebilir büyüme hedeflerine ulaşmaları için, kurumsal reformların güçlendirilmesi, etkili mali adem-i merkeziyetçilik politikalarının uygulanması ve yerel yönetimlerin kapasitelerinin geliştirilmesi gerektiğini vurgulamaktadır. Şeffaflığın artırılması, hukukun üstünlüğünün sağlanması, yolsuzluğun önlenmesi ve hesap verebilirliğin teşvik edilmesi, kaynak lanetinin olumsuz etkilerini azaltmaya yardımcı olacaktır. Ayrıca, yerel yönetimlere daha fazla mali özerklik verilmesi, kaynakların daha etkin kullanılması ve yerel ihtiyaçlara daha iyi yanıt verilmesi açısından önemlidir. Bu kapsamda, Avusturya ve Letonya'nın deneyimleri, diğer kaynak zengini ülkelere örnek teşkil edebilir.