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Macroeconomic and Social Effects of IMF-Supported Sovereign Assistance Programs in European Economies

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Abstract:

Introduction: This study evaluated IMF-supported sovereign assistance programs, including the long-term economic and social costs during crisis periods such as the Global Financial Crisis (GFC) of 2008 and the recent COVID-19 pandemic.

Methods: The study utilised secondary data from 2005 to 2024 to examine the implications of IMF-supported sovereign assistance program interventions. The data were collected from countries that have received a sovereign assistance program.

Results: This paper signify that IMF-sponsored sovereign assistance programmes stabilise European economies in the face of crisis, alleviating short-term GDP declines, but have little impact on growth, poverty, and inequality over the long run. The lagged program exposure can alleviate fiscal strains, which emphasize domestic reforms, labour market policies, and structural adjustments to achieve sustainable economic and social outcomes.

Conclusion: The study proposed that future IMF-supported sovereign assistance programs focus on stricter regulations, financial responsibility, and fiscal burden to balance short-term financial demands with long-term economic stability.

Keywords: IMF supported sovereign assistance programs, europe, global financial crisis (GFC), regulations, fiscal burden.

1. INTRODUCTION

Since the past few decades, the macro-economic and social implications of IMF-supported sovereign assistance programs, including IMF participation, have been the subject of renewed academic and policy discussion, especially due to banking crises and mass interventions by the government into the banking sector (Berger *et al.,* 2022). Though European crisis responses also involved EU-level facilities, for instance, the European Stability Mechanism and nationally coordinated assistance packages, IMF programme participation offers a steady cross-country proxy for external IMF-supported sovereign assistance programs exposure in empirical investigations (Schwarcz, 2017). As per (Berger *et al.,* 2022), IMF assistance characteristically arises together with wider sovereign assistance frameworks and is escorted by conditional financial programmes as well as monitoring mechanisms. Hence, using IMF credit outstanding provides a quantifiable and comparable indicator of the concentration of outwardly supported rescue programmes within European countries.

The financial crisis and the COVID-19 crisis greatly increased the scope of public guarantees, liquidity support, and recapitalisation schemes, which led to the steep rises in sovereign debt in advanced and emerging economies reported by (Barbu *et al.,* 2021) as well. As per (Arner *et al.,* 2020), in G7 countries, there has been an increase in public debt to almost 123% of GDP in 2021, mainly due to unprecedented fiscal stimulus on a scale of bank guarantee schemes. The same pattern was witnessed in emerging markets as the average public debt rose to about 65 percent of GDP during the same

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period that was recorded to be 54% (Vineshkothuri, 2025). Moreover, (Anthrakidis & Astroulakis, 2025) report that current failures of regional banks in Europe and the collapse of First Republic Bank, which had approximately US$229 billion of assets and US104 billion of deposits, further point to the persistence of fiscal exposure of governments. The loans guaranteed by governments as a result of the pandemic have put the balance sheets of the masses at risk of losses in the tune of more than US$4 trillion, and have realized substantial expenditures suggested by (Lucas, 2024) as well. According to the estimates of OECD, sovereign bonds issued in the amount of about USD 17 trillion in 2025, which supports the arguments of the long-term fiscal cost of financial stabilisation policies (OECD, 2025).

In this study, IMF-supported sovereign assistance programs are operationalised through IMF-supported sovereign assistance exposure, measured by the total outstanding credit from the International Monetary Fund (IMF) at the country level. This measure serves as a consistent and comparable proxy for the intensity of externally supported financial assistance across countries and over time. By capturing the magnitude and persistence of IMF lending, the variable reflects the degree of programme engagement and conditional financial support associated with crisis response. While sovereign assistance in European economies may also involve regional and domestic mechanisms, this operationalisation focuses specifically on externally coordinated interventions, thereby enabling a standardised cross-country empirical analysis while acknowledging that it does not fully encompass all forms of sovereign assistance.

IMF supported Sovereign assistance program design has been considered in the existing literature, but more recent research is highlighting the necessity to assess long-term macro-fiscal impacts and institutional resilience following a crisis, as indicated by (Arner *et al.,* 2020). Although there has been an increasing focus on it, empirical studies such as (Alowisi, 2024) tend not to capture the long-term fiscal effects of crisis processes operating simultaneously with the contemporary dynamics and hardly ever operationalise the effect of regulatory change in terms of measurable institutional indicators. Most of the analyses, such as (Aher, 2025), are based on short-term results of stabilisation without looking at whether the post-crisis Fiscal sustainability has the capacity to eliminate fiscal vulnerability in the long run. In addition, regulatory reform is often talked about in theory but lacks consistent cross-country institutional data with which to gauge it.

Moreover, the literature on IMF-Supported IMF supported sovereign assistance programs, including IMF participation, is characterised by a concentration on short-term financial stabilisation, and few studies provide insights about their long-term economic, social, and fiscal consequences. Although some recent research, such as (Kaddour *et al.,* 2025; and Pernell & Jung, 2024), significantly covers the financial instability, they appear to pay little attention to the social impact of these challenges in terms of income inequality, poverty, and unemployment. There is also a lack of consideration of the fiscal costs of IMF-supported sovereign assistance programs, particularly when experienced by resource-strained economies. Consequently, the study aims to address these gaps by focusing on the international effects of IMF-supported sovereign assistance programs in economies. These gaps are covered in the current study, which empirically examined the economic, social, fiscal, and institutional implications of Sovereign Assistance Programmes Including IMF Participation, in the long run, and investigates whether the post-crisis regulatory adjustment has any impact on fiscal exposure. To be more specific, the question posed by this research is whether the IMF sovereign assistance programme has an intensity effect on macroeconomic performance, social outcomes, fiscal conditions, and institutional responses in European economies in the aftermath of the crisis.

The research adds both to the theoretical analysis and to the literature on fiscal burden by connecting the fiscal burden issues with the institutional reforms and empirically by offering the panel-based evidence on the long-term fiscal impacts on different economies. In practise, it informs policymakers about the potentially beneficial role of strengthening regulations in reducing fiscal costs in the event of financial rescue and helps to design more sustainable interventions. The study also provides recent evidence of the relationship between IMF-supported sovereign assistance programs, regulation, and sovereign risk by combining the latest evidence on crises with systematic econometric analysis. The rest of the study is structured in a manner where Section 2 provides a review of the existing literature; Section 3 presents the data and methodology; Section 4 presents the empirical results; and finally, Section 5 concludes the study with the policy implications and discussion of limitations. Consequently, the research question of the study is stated as:

What are the macroeconomic and social effects of IMF-supported sovereign assistance programs in European economies?

This study contributes to the literature in four ways:

- It provides a detailed empirical evaluation of IMF-supported sovereign assistance programs, including IMF participation and its effects across economic, social, fiscal, and institutional dimensions.
- It utilises panel data from European economies covering the post-crisis period.
- It incorporates crisis interactions to examine how IMF-supported sovereign assistance programs' impacts differ during systemic shocks.
- It advances the institutional-fiscal perspective on financial interventions and fiscal burden.

2. LITERATURE REVIEW

2.1. Theoretical Framework

This research study uses an institutional-fiscal approach in order to elaborate about the impacts of the bank's

sovereign assistance program on long term economic, social, and fiscal performance. The framework does not just use the abstract agency arguments but uses the theoretical mechanisms and matches them with the modelled country-level variables. The agency theory provides a description of moral hazard: the government guarantees and interventions with the help of the IMF decrease the perceived downside risks to the economy that can affect the behaviour of economic agents and resource allocation. These effects may have an indirect impact on macroeconomic performance, determining GDP growth, fiscal performance, and management of public debt. By so doing, IMF-sponsored sovereign assistance programs can provide incentives and constraints that affect long-term economic performance and fiscal soundness (Hahn *et al.,* 2023; ElBannan, 2017).

As a complement to this, post-crisis institutional and structural adjustment views that are based on the experience of the Great Depression, focus on the fact that stabilisation policies can dampen short-term volatility but create long-term fiscal and social imbalances in case structural vulnerabilities remain, as suggested by (Hagiwara, 2019). This model justifies the study of the distributional effects of poverty and inequality, which is similar to previous empirical strategies highlighted in (Aher, 2025; and Wullweber, 2020). Nevertheless, not all outcomes are subjected to the same set of theoretical expectations, but rather, relationships are obtained by the interaction between IMF-supported sovereign assistance programs-related liquidity support, public liability expansion, economic performance, fiscal exposure, and social indicators.

2.2. IMF supported Sovereign Assistance Programs and Economic Cost

IMF supported Sovereign assistance programs are economic measures administered frequently by governments or even international organisations such as the IMF, intended to stabilise economies in times of crisis. It is associated with serious costs in the long run. The recent empirical studies that examine the larger implications of financial crises and IMF-supported sovereign assistance program interventions give valuable information but are also characterised by methodological and conceptual shortcomings. As an illustration, (Petrou, 2019) reports the cross-sectional health impact of the financial crisis and austerity actions on Cyprus in 2010 and 2014. Although the sample size is relatively large, and logistic regression is supplemented with documentary analysis, the study is unable to make a causal argument and long-term evaluation due to the study design. The use of two time points and self-reported outcomes limits the measurement of dynamic effects, trends of the pre-crisis, and heterogeneous effects of the population groups. Such constraints underscore the importance of longitudinal methodologies and more detailed data to evaluate social impacts of an intervention that are long term. The issues with the absence of qualitative depth and objective measures are supported by (Mayer & Hollederer, 2022; and Mathieu *et al.,* 2022), who emphasise the need to incorporate qualitative evidence to comprehend more long-term psychological and socioeconomic consequences of financial strain. Simultaneously, (Tsoai, 2021) discusses IMF-supported sovereign assistance programs in Sub-Saharan Africa over 20 years of panel data and concludes that they have no significant relationship with GDP growth or inflation but have negative impacts on exchange rates.s. The mixed and frequently insignificant study findings, even though the study utilises a solid multi-country dataset, bring into question the effectiveness of IMF-supported sovereign assistance programs. The same findings are described by (Ioannou *et al.,* 2019; and Vukovic, 2021), who state that the goals of stabilisation do not often provide significant real increases in the economy. These studies are, however, restricted by limited sample sizes, institutional heterogeneity, and changing IMF policy frameworks, which minimise generalisability. In general, the literature suggests inconclusive evidence of long-term effects and a lack of interest in the transmission mechanisms at an institutional level, thus stimulating more empirical research and identification strategies with more precise variable operationalisation.

Current literature has provided conflicting and contingent arguments on the general economic and social consequences of IMF-supported programs and crisis-response policies. As (Petrou, 2019) emphasises, the social effects of an austerity that followed after financial crises include the fact that the overall health indicators in Cyprus did not decrease; however, access to healthcare worsened because of financial hardships. Nevertheless, the cross-sectional nature of the study and the use of self-reported data make the study unable to reflect the long-term causal influence or dynamic alteration across population groups. Conversely, (Tsoai, 2021) uses a longitudinal panel dataset to study IMF sovereign assistance programmes in Sub-Saharan Africa and concludes that there are mostly non-significant impacts on GDP growth and inflation, but the exchange rates get worse after assistance. The application of external stabilisation programmes is also associated with similar conclusions made by the works of (Ioannou *et al.,* 2019; and Vukovic, 2021), which state that these programmes usually help to avoid systemic collapse but fail to convert these changes into long-term macroeconomic benefits. The combined studies imply that although IMF-supported programs can stabilise financial states in the short-term, their long-term economic and social consequences are unpredictable and quite different in terms of institutional and regional settings.

(Kaddour *et al.,* 2025) evaluated the effect of IMF-supported sovereign assistance programs and bailout list-making on EMBI data of 18 countries in the financial crisis case. The study concluded that IMF-supported sovereign assistance programs encourage excessive risk-taking and fail to produce lasting change due to credibility issues. Its global scale of data collection and up-to-date market observations are advantages to the study; however, the study prioritises evaluations of the financial market, as opposed to more extensive social effects, such as employment and population health. This study also supports (Berger, 2018; and Beljić &

Glavaški, 2021) that IMF-supported sovereign assistance programs, while supporting economies in the short run, often result in long-term costs. There is a gap in the research to investigate further the issues of social and economic aspects of IMF-supported sovereign assistance programs. The limitation of the study is that its focus on emerging countries, limited modelling techniques, and omission of direct ESG and bail-in credibility measures restricts generalisability and depth of the conclusion. However, the studies do not address how IMF-supported sovereign assistance programs, currency stability, and the social impact of financial strain interact over time. Furthermore, as provided by the Keynesian and fiscal intervention theory, which implies that exogenous monetary schemes can stabilise short-term liquidity, but can decrease the motivation of domestic revenue mobilisation and structural adjustments (Kaddour *et al.,* 2025). In this regard, the increased exposure of IMF sovereign assistance is likely to correlate with a reduced GDP growth in terms of possible trade-offs between stabilisation and fiscal efficiency. Based on these arguments, the following hypothesis, H1, has been developed:

H1: Higher levels of IMF-supported sovereign assistance programs exposure (total IMF credit outstanding) are associated with lower GDP growth.

Sovereign assistance programs and Social Costs. Sovereign assistance programs can save systems, but the costs of such operations become extremely high. More recent research examines the institutional design and distributional implications of IMF-supported sovereign assistance programs packages but still, there are gaps that must be filled in regard to cross-country empirical validation and long-term measurement. (Berger *et al.,* 2022) utilise a dynamic theoretical framework with a difference-in-differences analysis to compare the regimes of IMF-supported sovereign assistance programs, bail-in, and no-intervention based on the data of the U.S. Bank Holding Company. Their results indicate that IMF supported sovereign assistance programs encourage voluntary recapitalisation at lower social costs than IMF supported sovereign assistance programs who maintain stability in the institutions at the expense of increased capital resilience and incentives to take optimal risks. (Schwarcz, 2017) also claims that the long-term capital buffers and systemic vulnerability can be negatively affected by short-term stabilisation using IMF-supported sovereign assistance programs. Despite the rigour of these studies and their high policy relevance, external validity is limited due to jurisdiction-specific data, stylised assumptions regarding regulatory matters, and relatively short periods of observation. The heterogeneity of cross-country, institutional, and spillover effects is no longer sufficiently covered, and it hinders further generalisation.

Socio-economically, (Puaschunder, 2021) takes a form of conceptual policy analysis of COVID-19 IMF-supported sovereign assistance programs and recovery policies, which mention unbalanced financial gains, pressures of inflation, and vulnerability of homes. The multidisciplinary framing is a more theoretical discourse that is not tested empirically and has no quantifiable indicators that can prove the mechanisms suggested. In similar studies, (Puaschunder, 2021) highlights that the stabilisation policies create a short-term economic shield but may cause distributional bias in the long term. Likewise, (Konzelmann, 2023) also places IMF-supported sovereign assistance programs-based public debt within the context of a historical political economy by stating that increasing fiscal obligations tend to cause austerity responses that worsen poverty and inequality. Nonetheless, the evaluation is based on a small amount of primary data, as well as generalisations in settings. In general, the literature indicates a conceptual richness but low empirical rate of finding the causal relationships between IMF-supported sovereign assistance programs, fiscal adjustment, regulatory change, and inequality among countries, which highlights the necessity of systematic panel-based research.

The current literature also shows a contradictory view regarding institutional and distributional implications of sovereign assistance programmes. Based on a dynamic framework and difference in differences analysis of the U.S. Bank Holding Companies, (Berger *et al.,* 2022) conclude that intervention regimes are sufficient to stabilise financial institutions but undermine incentives towards greater capital buffers. In a similar vein, (Schwarcz, 2017) holds that though these interventions are able to fix short-term stability, they are prone to undermining resilience in the long term by lowering market discipline. Conversely, (Puaschunder, 2021) considers the problem in the conceptual policy framework, with the focus on the possible inflationary pressure and unequal benefits of the support measures during the pandemic. Though the lack of empirical testing in the work by Puaschunder is also opposed by the quantitative approaches of (Berger *et al.,* 2022) and demonstrates the greater gap between theoretical commentaries and quantitative measures of intervention effects.

The findings of these studies all tend to stress that, although IMF-supported sovereign assistance programs are a stabilising measure, they create long-term social costs, such as exacerbated inequality, poverty, and financial strain on vulnerable populations. According to an institutional-fiscal theory, IMF sovereign assistance programmes are usually accompanied by fiscal tightening, structural reforms, transforming the position of public expenditures and labour markets (Tsoai, 2021). Such changes have a disproportionate impact on the lower-income groups, since they lead to a decrease in social services, employment in the public sector, and the rate of recovery (Kaddour *et al.,* 2025). The policies of crisis management have the ability to change the income distribution and social welfare outcomes (Konzelmann, 2023; Puaschunder, 2021). Based on these arguments, the following hypothesis, H2, has been developed:

H2a: Higher levels of IMF-supported sovereign assistance programs exposure are associated with increases in poverty rates.

H2b: Higher levels of IMF-supported sovereign assistance programs exposure are associated with higher income inequality (Gini index).

2.3. Sovereign Assistance Programs and Fiscal Sustainability

Fiscal sustainability usually follows the IMF-supported sovereign assistance programs as a way of avoiding future financial crises and keeping the financial system healthy. (Türk, 2025) conducted a qualitative study that was based on the Dodd-Frank Act and contrasted with the Basel II. The study established that although such reforms enhanced transparency and consumer protection, they faced the problem of being too big to fail and too expensive to comply with, and hence were not universally applicable. This study supports (Duffie, 2018), who argued that while Fiscal sustainability can help stabilise the financial system, they often come with significant compliance costs and challenges. Nevertheless, the U.S.-focused focus of the study and the absence of statistical information on the lasting results of such reforms restricts their wider applicability. Conversely, (Hahn *et al.,* 2023) examine 34 major regulatory announcements between 2009 and 2017 concerning 260 European banks in an event-study design using Seemingly Unrelated Regressions. Implicit government guarantees are proxied by irregular changes in CDS spreads and equity returns. They discover that even after the BRRD and Single Resolution Mechanism were set to end IMF-supported sovereign assistance programs funded by taxpayers, the market response reflects an increase in spreads and equity returns, particularly of global systemically important banks, suggesting the existence of investors who still anticipate state assistance. This aligns with (Scholz, 2021), showing that although the SRM curbs risky behaviour and restores market discipline, persistent implicit guarantees demand stronger, harmonised enforcement to eliminate problems faced by these countries. The strengths are the large sample of the study and the strong econometric design, and the limitations consist of the use of market proxies and the concentration on a European population. It establishes a research gap in the study of the real risk-taking behaviour of banks after a bail-in and international cross-country differences in credibility.

(Peres, 2020) has employed a philosophical approach and applied the ethics of Rawls to discuss the necessity of IMF-supported sovereign assistance programs. This study on coercive accountability recommended the moderation of risky behaviour, although the analysis was based only on empirical research and it was specific to the U.S. and Brazilian realities. These supports (McDonagh, 2021), who found that IMF-supported sovereign assistance programs, while stabilising economies in the short term, encourage excessive risk-taking. These studies highlight the importance of conducting a study on the performance of these regulatory frameworks in other developing economies, which is a gap that has not been addressed. It would be more interesting in future research to analyse empirically and on a global basis the effectiveness of Fiscal sustainability in other economic conditions. These studies collectively suggest that Fiscal sustainability is necessary for stabilising financial systems. According to the agency theory, IMF sovereign assistance programmes may lead to moral hazard to the governments because an external service might decrease the motivation to follow fiscal disciplines, as indicated in the findings of (Ioannou *et al.,* 2019). In line with (Petrou, 2019) Governments tend to finance or guarantee recapitalization of financial systems in fiscal stress and inadvertently increase the volume of sovereign debt. These are supported in the studies of (Borio, 2019; Wullweber, 2020; and Reinhart & Rogoff, 2013). Based on these arguments, the following hypothesis, H3, has been developed:

H3: Higher levels of IMF-supported sovereign assistance programs exposure are associated with increases in central government debt.

2.4. Crisis Period as Moderating Variable

The studies, such as (Anthrakidis & Astroulakis, 2025; Barbu *et al.,* 2021), underscore the fact that the effects of IMF-supported sovereign assistance programs are extremely dependent on the macroeconomic factors and institutional environment. Financial systems are weak when it comes to crises, thus defining the role of IMF-supported sovereign assistance programs' intervention. In a standard situation, sovereign assistance programmes may impact economic incentives through the establishment of moral hazard and changes in the distribution of resources, which can indirectly impact fiscal and social results. Nevertheless, in a crisis, such programmes can have a stabilising effect, working to keep the economy afloat, overcoming the continuity of production, and reducing the most severe short-term effects on GDP, public debt, poverty, and inequality (Andreou, 2024). As per the agency theory, external IMF assistance in the case of crisis can continue to pose threats to fiscal sustainability and economic behaviour, which indirectly affect the GDP growth, government debt, and social outcomes without necessarily targeting the banking-specific measures (Ioannou *et al.,* 2019; Vukovic, 2021).

Socially, crises lead to increased unemployment, poverty, and inequality, especially for vulnerable populations. The immediate impacts that IMF-supported sovereign assistance program interventions can have in such situations are mitigating the short-term effects on the labour market and constraining the negative distributional shocks suggested by (Andreou, 2024) as well. Such social stabilisation effects, however, come with an increase in public debt and an increase in fiscal commitments. Formally, (Ueda, 2025) indicated that sovereign assistance programs cannot stop the rise in public debt but may moderate the extent of financial contagion and fiscal pressure because of the stabilising role they play. As a result, the literature indicates that IMF-supported sovereign assistance programs can be viewed as crisis-contingent buffers that reduce the collapse of the system, but investing in their creation produces some longer-run fiscal trade-offs. In line with the institutional-fiscal perspective, the period of crisis increases the impacts of sovereign assistance packages by forcing states to implement immediate fiscal and structural changes, which change the economic, social, and financial results (Tsoai, 2021; Kaddour *et al.,* 2025). Though the agency theory also indicates that external IMF supported

in cases of crisis can pose risks to fiscal sustainability and economic incentives (Ioannou *et al.,* 2019; Vukovic, 2021).

H4a: Crisis periods moderate the relationship between IMF-supported sovereign assistance programs exposure and GDP growth.

H4b: Crisis periods moderate the relationship between IMF-supported sovereign assistance programs exposure and poverty.

H4c: Crisis periods moderate the relationship between IMF-supported sovereign assistance programs exposure and inequality.

H4d: Crisis periods moderate the relationship between IMF-supported sovereign assistance programs exposure and central government debt.

3. METHODOLOGY

3.1. Sample and Data Collection

This study followed a quantitative research design, using secondary data in estimating the long-run economic and social costs of IMF-supported sovereign assistance programs, including IMF participation in European economies between 2005 and 2024. The sample includes European countries that received IMF-supported sovereign assistance program loans from the IMF during the crisis period, the Global Financial Crisis (2008–2009), and the economic consequences of the COVID-19 pandemic (2020–2021), as the key countries to be studied, along with other countries that did not take loans for comparison. The research incorporates all the European countries, both developed and developing. In order to be robust, an IMF dummy variable is added, which is 1 in those countries that have taken loans with the IMF within the crisis windows and 0 in those countries that have not.

Secondary data were gathered from reliable international sources, primarily the World Bank Indicators, which provide country-level indicators of key variables such as central government debt, GDP growth rate, poverty headcount ratio, and Gini index, along with control variables such as unemployment rate and bank capital to assets. Country-level data were quantified according to annual national statistics so that cross-country comparison is feasible. The crisis windows were 'snagged' with dummy variables for GFC (2008–2009) and COVID-19 (2020–2021), coded 1 for crisis years and 0 otherwise.

Although there are several mechanisms in sovereign assistance programmes in Europe (*e.g.,* EU facilities and national interventions), this paper relies on IMF credit outstanding as a comparable and uniform proxy of external sovereign assistance exposure among countries. This methodology captures the change in the intensity of the programmes but does not consider the entire domestic or regional bailout measures.

The programme activation year to the official programme termination year reported in IMF arrangement documentation is referred to as IMF-supported sovereign assistance program years. Where there is an overlap or a successive programme, the years of assistance are said to be continuous, provided there is no discontinuity in the status of the programme. To determine replicability, programme entries and exits dates are determined by the IMF dataset records. Such operationalisation makes it possible to clearly identify the periods of treatment and to be sure of uniformity in the construction of panels.

Operationalisation of Main Concepts are listed in Table **1**.

3.2. Measurement Model of the Study

3.2.1. Measurement and Scaling of Sovereign Assistance Programs

The sovereign assistance programme variable is considered as the total IMF credit outstanding in nominal USD, which is taken out of the IMF financial statistics. Descriptive statistics for the IMF-supported sovereign assistance programs are reported in millions of USD with the purpose of offering an intuitive understanding of the size of the program. Though regression analysis utilises the natural logarithm of IMF credit outstanding for decreasing skewness, enhancing model fit, and stabilising the variance, which guarantees that extreme values do not excessively impact the estimation of macroeconomic as well as social impacts within European economies, as supported by (Balima & Sy, 2021). Log transformation helps to overcome the heteroskedasticity, the distributional properties are improved, and the coefficients can be interpreted in terms of elasticity. This strategy aligns with the work of (Hur *et al.,* 2021), who report the massively disproportional allocation of sovereign financial aid among instances of crises.

3.2.2. Economic Cost

The GDP growth measures economic cost by providing the annual percentage value of the real gross domestic product of a countGDP growth is used to reflect the general economic performance and whether an economy is growing or shrinking with time (Barbu *et al.,* 2021). Reduced or negative growth rates after sovereign assistance programmes indicate that there may be economic costs of such interventions, such as low productivity, limited investment, and delayed recovery. The measure is highly popular in the literature to measure macroeconomic performance because it gives a holistic measure of economic performance. The GDP growth can be used to make a consistent cross-country comparison of the long-term economic impacts of sovereign assistance programmes (Wullweber, 2020).

3.2.3. Social Cost

The poverty headcount ratio and Gini index are used to measure social cost in the distribution and welfare effects. Poverty headcount ratio is the percentage of the population who live below the national or international poverty line, which is the measure of economic deprivation of the vulnerable groups (Aher, 2025). The Gini index is a measure of income inequality with a range of 0 (perfect equality) to 1 (maximum inequality), which shows the spread of income

among the population. The combination of these indicators offers a holistic evaluation of social outcomes, and it is possible to examine whether the programmes of sovereign assistance can be linked to higher poverty rates and growing income inequalities between nations over time (Wullweber, 2020).

3.2.4. Fiscal Burden

The operationalisation of fiscal burden is based on the central government debt as an indicator of the fiscal status of the government and its ability to sustain stable public finances after the financial crisis and the intervention of sovereign assistance programmes. The debt of central governments indicates the level of fiscal strains on governments in their efforts to adopt stabilisation policies, support for the financial sector, and macroeconomic policies. (Postula *et al.,* 2025) note that, in spite of the fact that sovereign debt is not a direct measure of regulatory quality, increasing government debt tends to indicate policy reactions, the growth of the government balance sheet, and structural fiscal adjustments that intend to stabilise the financial system. In this regard, (Togo *et al.,* 2025) posit that strict fiscal policies and regulatory reinforcement are usually done concurrently during crisis times, where governments engage in reforms to revive macroeconomic stability and recover lost fiscal credibility. In the same vein, according to (Barney & Souksakoun, 2021), the financial sector assistance mechanisms and the policy of responding to the crisis are more likely to contribute to the growth of the sovereign liabilities and, at the same time, to the re-organisation of the fiscal burden and the system of long-term fiscal management. Thus, the central government debt can be used as an adequate proxy of fiscal burden because it summarizes the fiscal strains and fiscal changes related to the recovery of the post-crisis and the attempts of the government to stabilize its own financial means in the long run.

3.2.5. Unemployment Rate

Unemployment rate is one of the control variables, and this is measured as the proportion of the total labour force that is unemployed (Ueda, 2025). It reflects labour market situations, which could affect economic performance, fiscal burden, and social consequences like poverty and inequality. An increased unemployment is a sign of economic distress, decreases household income, decreases tax revenues, and increases government spending on social support (Pernell & Jung, 2024). Adjusting unemployment controls for the confounding of the estimated effects of IMF-supported sovereign assistance programmes with underlying labour market fluctuations. This enhances the precision of the model by separating the sovereign assistance effect on the macroeconomic, fiscal, and social indicators.

Table 1. Measurement of variables.

Concept	Indicator(s) Used	References
Dependent Variables		
Economic Cost of Sovereign assistance programs	GDP Growth	(Barbu et al., 2021; Wullweber, 2020)
Social Cost of Sovereign assistance programs	Poverty Headcount Ratio, Gini Index (income inequality).	(Aher, 2025; Wullweber, 2020)
Fiscal Burden	Central Government Debt	(Wullweber, 2020)
Independent Variable		
Sovereign assistance programs	Total IMF credit outstanding to the country in IMF supported sovereign assistance programs years.	(Kaplan & Shim, 2024)
IMF Dummy	A dichotomous variable (1-0) representing the receipt of IMF-sponsored sovereign aid by the country during the period or not. These variable measures the participation in a program regardless of the size of the credit and it enables solid robustness tests of the implications of IMF exposure of all the European nations.	(Kaplan & Shim, 2024)
Moderating Variable		
Crisis	Dummy variable: 1 shows crises period, 0 shows otherwise	(Wullweber, 2020)
Control Variables		
Unemployment Rate	Unemployment rate (% of labour force)	(Barbu *et al.,* 2021)
Bank capital to Assets	Bank capital/Assets	

3.2.6. Bank Capital to Assets

The resilience and stability of the banking sector are captured by the bank capital to assets as a control variable. It is a ratio of the capital of a bank to the total assets. The increased ratios are the better indicators of financial shock buffers, which may affect the availability of credit, the performance of the economy, and the overall effect of the sovereign assistance programmes (Barbu *et al.,* 2021).

3.3. Data Analysis

The data analysis was conducted using panel data regression in STATA. Descriptive statistics are computed using statistical software like STATA to present patterns of the effects of IMF-supported sovereign assistance programs throughout the study period. Furthermore, the study has utilised fixed-effect regressions to evaluate the impact of IMF-backed sovereign assistance programs on economic, fiscal, financial, and social outcomes. It also utilised lagged IMF-supported sovereign assistance program, country clustering, and year fixed effect to control persistency, and to ensure that the endogenity concerns are reduced. The use of lagged variables addresses the endogeneity concerns, making the results more robust. To further guarantee robustness, regressions are conducted with an IMF participation dummy variable to differentiate between countries that have and have not been provided with IMF loans. This can be used to test the hypothesis that any observed effects are due to programme participation or to the amount of IMF credit outstanding.

4. RESULTS

4.1. Descriptive Statistics

The descriptive statistics featured in Table **2** offer a better analysis of diverse financial and economic indicators in a sample of 760 observations. Central Government Debt averages 68.49 with a standard deviation of 32.24, indicating moderate variance. GDP Growth and Unemployment Rate display high fluctuations with means of 2.13 and 8.59, respectively. The Poverty Headcount Ratio and Gini Index show moderate levels of poverty and income inequality, with means of 16.98 and 31.39. Bank Capital to Assets has a mean of 8.02, suggesting moderate financial health variability. Sovereign assistance programs amount 434 million on average, with standard deviation of 2020 million reflecting higher variability in the sovereign assistance program.

4.2. Correlation

The correlation analysis Table **3** indicates that there are weak to moderate relationships between variables, which means that there is not much multicollinearity. There is a negative correlation between IMF credit use (-0.136) and crisis periods (-0.283), indicating poorer economic performance in times of increased IMF exposure and crises. Fiscal pressures are positively related to central government debt (0.232) and IMF credit (0.120), which is a negative relationship. The correlation between poverty and inequality is positive (0.656*) and it shows the same pattern of social costs. Unemployment is also positively related to poverty (0.370*) and inequality (0.434). Domestic credit has a negative relationship with bank capital (−0.376), which implies stricter financial conditions.

4.3. Multicollinearity Using VIF

The issue of multicollinearity is analysed using the VIF against the threshold value of 5 in Table **4.**

As indicated in the results in Table **4**, it can be seen that in the case of all the constructs, the VIF value is found to be between 1 and 5, which indicates that there is no issue of multicollinearity among the constructs of the measurement model.

4.4. Fixed Effect Model

4.4.1. GDP Growth

Table **5** indicates that the lagged GDP growth has a positive and significant influence on the current GDP growth (0.194, p-value < 0.05), which implies that economic performance is persistent. The IMF-sponsored sovereign assistance programmes are negative, but statistically insignificant in all models, and the lagged programme variable has a small negative effect (-0.174, p-value= 0.10), which may be a delayed trade-off or moral hazard effect. Unemployment always has a significant negative impact, which is a manifestation of the limitations of labour markets in relation to the economy. The periods of crisis have a significant negative impact on the growth of GDP (-13.445, p-value = 0.01), and the interaction with the IMF programmes is positive, but not significant, which implies some partial short-term stabilisation. The year fixed effects enhance the model fit significantly (R2 raises to 0.526), which shows the significance of the control of a time shock. Economically, the outcomes suggest that although IMF programmes offer short-term liquidity assistance, the growth of GDP in the long term is tied to structural adjustments, job creation, and proper management of the crisis to reduce fiscal and social expenses.

4.4.2. Central Government Debt

Table **6** shows that central government debt in the past has a strong and positive impact on current debt (B = 0.826, p < 0.01), which represents fiscal persistence. IMF-funded sovereign assistance programmes exhibit negative but generally negligible coefficients, and the lagged IMF programme has a positive and significant effect on debt (B= 0.866, p < 0.10) indicating that there might be no delayed fiscal adjustments or conditionality. Unemployment has a positive influence on debt (B= 0.713, p = 0.10-0.01) which implies increased fiscal pressure due to the stress on the labour market. Bank capital to assets has a negative relationship with debt (B -0.674, p <0.05-0.01), which means that a high banking resilience has less fiscal burden. Debt accumulates significantly in crisis periods (B = 26.635, p < 0.01) but the negative relationship between IMF programmes and debt accumulation in crisis (B = -1.695, p < 0.01) suggests that IMF interventions partially moderate the accumulation of debt in times of crisis. Year fixed effects enhance model fit (R2 increases to 0.684) and this shows the significance of

adjusting the shocks in time. These outcomes have economic implications that IMF programmes can possibly contain the growth of debt in times of crisis, but long-term fiscal sustainability depends on good management of the labour market, healthy capital of banks, and prudent structural adjustments.

Table 2. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Central Government Debt	760	68.49	32.24	4.2	249.4
GDP Growth %	760	2.13	4.25	-28.8	24.6
Unemployment Rate %	760	8.59	5.49	0.5	37.3
Poverty Headcount Ratio %	760	16.98	3.65	1.6	31.1
Gini Index	760	31.39	3.58	23.2	46.1
Bank Capital to Assets%	760	8.02	2.47	-1.26	20.47
Sovereign assistance programs $ Million	760	434	2020	0	18,900

Table 3. Correlation analysis.

Variable	1	2	3	4	5	6	7	8	9
1. Domestic Credit	1	-	-	-	-	-	-	-	-
2. Central Government Debt	0.188**	1	-	-	-	-	-	-	-
3. GDP Growth	-0.151*	-0.117*	1	-	-	-	-	-	-
4. Unemployment	-0.063	0.232*	-0.092*	1	-	-	-	-	-
5. Poverty Headcount	-0.121*	-0.019	-0.032	0.370*	1	-	-	-	-
6. Gini Index	-0.002	0.009	-0.009	0.434*	0.656*	1	-	-	-
7. Bank Capital to Assets	-0.376*	-0.183*	0.108*	0.056	0.034	-0.005	1	-	-
8. IMF Credit Use	-0.168*	-0.120*	-0.136*	0	-0.06	-0.181*	0.078*	1	-
9. Crisis	0.132*	-0.081*	-0.283*	-0.01	-0.037	0.001	-0.088*	0.018	1

Note: *** indicates significance at 5% level*

Table 4. VIF.

Variable	VIF	1/VIF
Financial Sector Conditions Associated with IMF supported sovereign assistance programs Interventions	1.08	0.923
Sovereign assistance programs	1.08	0.924
Fiscal sustainability	1.02	0.976
Unemployment	1	0.996

Table 5. GDP growth.

Variables	(1) Baseline FE	Model 2: FE + Lagged IV	Model 3: FE + Lagged IV + Year FE
L.gdpgrowth	0.0668	0.0665	0.194**
	-0.038	-0.06	-0.076
IMF Supported Program	-0.0549	-0.0123	-0.0189
	-0.095	-0.085	-0.061
L.IMF Supported Program	-	-0.174*	-0.0673
	-	-0.088	-0.044
Unemployment	-0.216***	-0.217**	-0.105*
	-0.05	-0.08	-0.06
Bank capital to assets	0.0311	0.0323	0.0804
	-0.092	-0.135	-0.114
Crisis	-6.791*	-6.527	-13.445***
	-3.775	-4.765	-4.838
crisisXIMF Supported Program	0.1781	0.1599	0.2315
	-0.242	-0.311	-0.324
Constant	4.139***	4.686***	4.998***
	-0.958	-1.288	-0.958
Observations	722	722	722
R-squared (within)	0.124	0.126	0.526
Year Fixed Effects	No	No	Yes

Note: **** indicates significance at 1%, ** indicates significance at 5%, * indicates significance at 10%*

4.4.3. Poverty Headcount

Table **7** indicates that the current levels of poverty are strongly predicted by the past levels of poverty (B= 0.647, 0.648, $p < 0.01$), which indicates the persistence of social inequality. Sovereign assistance programmes supported by IMF have small positive coefficients, but these are not statistically significant, and lagged effects are also not significant, which means that they have a small direct effect on poverty reduction. The impact of unemployment on poverty is positive and weakly significant (B = 0.049, $p < 0.10$), which implies that the higher the level of joblessness, the more vulnerable households are. Bank capital to assets and periods of crisis do not have significant effect on poverty, and neither does the interaction term with IMF programmes. The year fixed effects are marginally better at model fitting (R2 increases by 0.412 to 0.424). Economically, the findings suggest that IMF programmes do not have a significant short-term impact on poverty reduction, which requires the implementation of supplementary social policies that address the situation in the labour market and distribution of income.

4.4.4. Gini Index-Income Inequality

Table **8** indicates that past inequality has a strong predictive power of current inequality (B = 0.624, 0.629, $p < 0.01$), which means that income disparities are highly persistent among European countries. The impact of IMF-supported sovereign assistance programmes on inequality is small and statistically significant in the baseline FE model (B = 0.073, $p < 0.10$), but lagged IMF programme effects are not significant, implying that the programmes do not have a significant effect on inequality reduction over time. The positive and significant effect (B = 0.094, 0.115, $p < 0.01$) of unemployment is observed, which implies that the higher the unemployment, the more income inequality. There is no significant effect of bank capital to assets, periods of crisis and interaction term to Gini index. The addition of year fixed effects does slightly enhance model fit (R2 rises by 0.464 to 0.477). Economically, the findings suggest that IMF programmes cannot work alone in reducing inequality and that labour market and redistribution policies are needed in order to curb the existing inequalities.

Table 6. Central govt. debt.

Variables	(1) Baseline FE	Model 2: FE + Lagged IV	Model 3: FE + Lagged IV+ Year FE
L.Central Government Debt	0.826***	0.826***	0.801***
	-0.025	-0.025	-0.03
IMF Supported Program	-0.365	-0.153	-0.148
	-0.226	-0.119	-0.108
L.IMF Supported Program	-	-0.866*	-1.037*
	-	-0.456	-0.448
Unemployment	0.714***	0.713*	0.791*
	-0.115	-0.29	-0.361
Bank capital to assets	-0.674***	-0.668*	-0.879**
	-0.22	-0.315	-0.31
Crisis	26.635***	27.954***	34.550***
	-9.024	-9.197	-9.364
CrisisXIMF Supported Program	-1.695***	-1.786***	-1.862***
	-0.578	-0.61	-0.584
Constant	13.201***	15.930***	15.558***
	-2.815	-4.239	-4.116
Observations	722	722	722
R-squared (within)	0.641	0.644	0.684
Year Fixed Effects	No	No	Yes

Note: **** indicates significance at 1%, ** indicates significance at 5%, * indicates significance at 10%*

Table 7. Poverty headcount.

Variables	(1) Baseline FE	Model 2: FE + Lagged IV	Model 3: FE + Lagged IV + Year FE
L.Poverty Head Count Ratio	0.647***	0.647***	0.648***
	-0.031	-0.064	-0.063
IMF Supported Program	0.032	0.033	0.035
	-0.04	-0.042	-0.044
L.IMF Supported Program	-	-0.004	-0.015
	-	-0.038	-0.039
Unemployment	0.055**	0.055*	0.049+
	-0.02	-0.023	-0.027
Bank capital to assets	0.048	0.048	0.048
	-0.039	-0.041	-0.038
Crisis	-0.719	-0.714	-0.414
	-1.596	-1.565	-1.468
CrisisXIMF Supported Program	0.038	0.038	0.036
	-0.102	-0.107	-0.105
Constant	5.045***	5.053***	4.895***
	-0.637	-1.173	-1.225
Observations	722	722	722
R-squared (within)	0.412	0.412	0.424
Year Fixed Effects	No	No	Yes

Note: **** indicates significance at 1%, ** indicates significance at 5%, * indicates significance at 10%*

Table 8. Gini index-income inequality.

Variables	(1) Baseline FE	Model 2: FE + Lagged IV	Model 3: FE + Lagged IV + Year FE
L.Gini Index	0.629***	0.628***	0.624***
	-0.03	-0.055	-0.056
IMF Supported Program	0.073*	0.065	0.07
	-0.036	-0.087	-0.092
L.IMF Supported Program	-	0.03	0.026
	-	-0.059	-0.058
Unemployment	0.094***	0.095***	0.115***
	-0.019	-0.025	-0.033
Bank capital to assets	-0.037	-0.037	-0.033
	-0.035	-0.036	-0.035
Crisis	-0.224	-0.277	-0.854
	-1.446	-1.418	-1.729
CrisisXIMF Supported Program	0.017	0.02	0.031
	-0.093	-0.098	-0.107
Constant	10.794***	10.751***	10.740***
	-0.98	-1.661	-1.869
Observations	722	722	722
R-squared (within)	0.464	0.464	0.477
Year Fixed Effects	No	No	Yes

4.5. Fixed Effect Model with Country Dummy

This section compared the European countries between the ones that opted for the IMF program and those that did not.

The robustness test that uses the IMF dummy indicates (Table **9**) that the IMF loans have a positive and significant impact on the growth of the GDP in the interactions between the two countries in the crisis (IMFXCrisis β = 3.570, 4.802, $p < 0.05$), which affirms that IMF loans alleviate the negative effect of the crisis. Direct IMF participation is positive but less regular whereas lagged IMF programmes are negative. Year fixed effects enhance the fit of the model (R2 between 0.148 and 0.533) which shows strong results over time and countries.

The results of the robustness of central government debt indicate (Table **10**) that lagged IMF-supported programmes have a large negative impact on debt (B = -1.027 to -1.154, p = 0.05), indicating that delayed IMF interventions can alleviate fiscal strains in the long run. The IMF positive effect (B = 1.751, $p < 0.10$) is observed in current IMF programmes and the IMF dummy is always negative (-47.390 to -58.194, $p < 0.05$), thus suggesting that countries which are receiving IMF loans manage debt differently. Debt is increased by unemployment and decreased by high bank capital. The accumulation of debt is increased during crisis periods, but the interaction between the crisis and the IMF programme slightly decreases.

The findings indicate (Table **11**) that lagged poverty is very persistent (B= 0.643, $p < 0.01$). Programmes supported by IMF and IMF dummy do not have any significant effect on poverty, whereas unemployment has a slight negative effect (B= 0.043 to 0.051, p = 0.10). Interactions between crisis and crisis-programme are inconsequential. The year fixed effects also increase the model fit to a small degree (R2 =0.414 to 0.426), which is a strong indicator.

The findings (Table **12**) reveal that Gini index is very inertial (B = 0.616-0.623, $p < 0.01$). The IMF-sponsored programmes and the IMF dummy do not have a significant effect on income inequality, whereas unemployment has a strong effect on it (B = 0.090 -0.108, p = 0.01). The effects of the crisis and interactions with crisis-programmes are not significant, which implies minimal impact in the short-run. Year fixed effects inclusion marginally enhances the model fit (R2 = 0.465 to 0.479) which is a validation of model robustness and consistency across specifications.

Table 9. GDP growth.

Variables	(1) Baseline FE	(2) FE + Lagged IV	(3) FE + IV, & Year FE
L.gdpgrowth	0.041	0.041	0.178*
	-0.038	-0.063	-0.079
IMF Supported Program	-1.238**	-1.169*	-0.321
	-0.439	-0.513	-0.368
L.IMF Supported Program	-	-0.096***	-0.043
	-	-0.021	-0.033
Country with IMF loan	26.358**	25.334*	6.516
	-9.609	-10.546	-7.393
Unemployment	-0.264***	-0.262**	-0.125+
	-0.052	-0.072	-0.063
Bank capital to assets	0.017	0.018	0.073
	-0.091	-0.136	-0.114
Crisis	1.874	1.995	-6.875
	-4.668	-4.364	-4.777
CrisisXIMF Supported Program	-0.45	-0.458	-0.235
	-0.314	-0.293	-0.329
Country with IMF loan X IMF Support	4.802**	4.788***	3.570**
	-1.549	-1.131	-1.066
Constant	4.201***	4.507***	5.063***
	-0.951	-1.244	-0.94
Observations	722	722	722
R^2 (within)	0.148	0.148	0.533
Year FE	No	No	Yes

Table 10. Central government debt.

Variables	(1) Baseline FE	(2) FE + Lagged IV	(3) FE + Lagged IV & Year FE
L.Central Government Debt	0.826***	0.826***	0.803***
	-0.025	-0.025	-0.029
IMF Supported Program	1.751+	2.484**	2.145*
	-1.05	-0.765	-1.057
L.IMF Supported Program	-	-1.027**	-1.154**
	-	-0.384	-0.397
Country with IMF loan	-47.390*	-58.194**	-50.626*
	-22.992	-16.901	-23.194
Unemployment	0.771***	0.782**	0.863**
	-0.117	-0.283	-0.362
Bank capital to assets	-0.654***	-0.644*	-0.863**
	-0.22	-0.312	-0.305
Crisis	21.628+	22.926*	29.669**
	-11.273	-10.636	-11.097
CrisisXIMF Supported Program	-1.326+	-1.413+	-1.549*
	-0.758	-0.732	-0.714
Country with IMF loan XIMF Support	-2.686	-2.816	-2.287
	-3.732	-2.099	-2.17
Constant	13.505***	16.837***	16.404***
	-2.828	-3.661	-3.505
Observations	722	722	722
R^2 (within)	0.644	0.648	0.687
Year FE	No	No	Yes

Table 11. Poverty headcount.

Variables	(1) Baseline FE	(2) FE + Lagged IV	(3) FE + Lagged IV, & Year FE
L. Poverty Head Count Ratio	0.643***	0.643***	0.645***
	-0.031	-0.064	-0.064
IMF Supported Program	-0.159	-0.164	-0.207
	-0.186	-0.194	-0.208
L.IMF Supported Program	-	0.007	-0.005
	-	-0.045	-0.043
Country with IMF loan	4.31	4.381	5.376
	-4.083	-4.182	-4.486
Unemployment	0.051*	0.051*	0.043
	-0.021	-0.024	-0.029
Bank capital to assets	0.049	0.049	0.049
	-0.039	-0.041	-0.038
Crisis	-2.03	-2.040+	-1.675
	-2.008	-1.166	-1.063
CrisisXIMF Supported Program	0.132	0.133	0.13
	-0.135	-0.079	-0.075
Country with IMF loan XIMF Support	-0.725	-0.725	-0.715
	-0.67	-0.518	-0.539
Constant	5.046***	5.027***	4.805***
	-0.642	-1.16	-1.215
Observations	722	722	722
R^2 (within)	0.414	0.414	0.426
Year FE	No	No	Yes

Table 12. Gini index.

Variables	(1) Baseline FE	(2) FE + Lagged IV	(3) FE + Lagged IV, & Year FE
L.Gini index	0.623***	0.620***	0.616***
	-0.03	-0.048	-0.048
IMF Supported Program	-0.156	-0.191	-0.232
	-0.169	-0.291	-0.31
L.IMF Supported program	—	0.046	0.042
	—	-0.056	-0.057
Country with IMF loan XIMF Support	5.119	5.648	6.678
	-3.71	-6.427	-6.881
Unemployment	0.090***	0.090***	0.108***
	-0.019	-0.021	-0.026
Bank capital/assets	-0.038	-0.038	-0.034
	-0.035	-0.036	-0.036
Crisis	-0.806	-0.892	-1.653
	-1.828	-2.757	-2.425
Crisis × IMF supported program	0.058	0.064	0.092
	-0.123	-0.186	-0.175
Country with IMF loan XIMF Support	-0.311	-0.314	-0.453
	-0.604	-1.444	-1.358
Constant	10.937***	10.881***	10.830***
	-0.988	-1.423	-1.582
Observations	722	722	722
R^2 (within)	0.465	0.466	0.479
Year FE	No	No	Yes

5. DISCUSSION

The main objective of this research was to examine the economic, social, and fiscal effects of IMF-supported sovereign assistance programmes in European nations in the long term during financial crisis periods, such as the Global Financial Crisis (2008-2009) and the COVID-19 pandemic (2020-2021). The results indicate that the general impact of increased levels of IMF-supported assistance on the long-run growth in GDP is relatively small, but most of the effects are statistically insignificant defying most of the hypotheses, with the lagged IMF exposure having a minor negative effect. This finding is consistent with the agency theory, which states that downside risks might be perceived to be less in case of external support and domestic incentives to structural reform are weakened, thereby postponing sustainable growth. The results align with earlier research by (Tsoai, 2021; and Ioannou *et al.,* 2019), which also found low real economic benefits of IMF interventions. Nevertheless, there are robustness checks based on the IMF participation dummy which shows that in crisis times, IMF loans are able to counter negative GDP shocks, which points to the context-specific nature of these programmes as stabilisation buffers in times of systemic distress.

In terms of fiscal sustainability, lagged IMF programmes are linked to the narrowing of central government debt in the long run implying that conditionality and slow fiscal adjustments can reduce some fiscal stress. Conversely, present programme exposure is associated with minor growth in debt, which indicates the possible moral hazard of short-term guarantees. These findings resonate with (Borio, 2019; and Reinhart & Rogoff, 2013) and support the opinion that short-term fiscal assistance can lead to a rise in sovereign liabilities and efficient long-term fiscal discipline needs to be done with structural adjustments, effective management of the labour market, and banking sectors. Crisis periods also soften these impacts, as IMF interventions in times of crisis partially restrain the growth of debts, but do not entirely remove fiscal vulnerability. Socially, previous poverty and income inequality are a strong predictor of the present level, which implies that social disparities are persistent.

Programmes backed by IMF have a low positive impact on poverty and inequality, and most of them are statistically non-significant implying that these programmes alone cannot reduce social distress. Unemployment becomes a more powerful predictor of social results, which underscores the value of labour market policies, as well as IMF programmes. These findings align with the conceptual findings of (Puaschunder, 2021; and Konzelmann, 2023) who state that stabilisation policies can offer short-term economic safeguards but can increase distributional imbalances when social policies are not put in place simultaneously. It is also shown in the study that the impacts of IMF interventions are very dependent on the macroeconomic situation. The IMF assistance has helped to reduce some of the short-term adverse effects on the GDP and debt during crises, which serves as a stabilising buffer, but social costs like poverty and inequality have not significantly been reduced in the absence of domestic measures. This observation concurs with (Andreou, 2024; and Ueda, 2025), who point to the fact that IMF programs are only relief on a crisis basis but involve long-term trade-offs to achieve fiscal sustainability and social equity.

On the whole, the findings indicate that IMF-backed sovereign assistance programmes are effective in the short-term stabilisation but not enough to spur sustainable economic growth, fiscal stability or social equity. This needs to be combined with structural reforms in the domestic market, labour market policies and specific social policies to ensure that short term financial stability is matched by long term institutional and distributive goals.

CONCLUSION

This paper has analysed the economic, social, and fiscal effects of IMF-funded sovereign aid programmes in European nations between 2005 and 2024, and has focused on such periods of crisis as the Global Financial Crisis and the COVID-19 pandemic. The research, based on an institutional-fiscal framework, which incorporates agency theory and post-crisis structural adjustment views, examined the impact of IMF programs on GDP growth, central government debt, poverty, and income inequality, controlling crisis contingencies, unemployment, and bank sector resilience.

The findings show that IMF-sponsored sovereign assistance programmes have short-term stabilisation effects through alleviating adverse shocks in times of crisis. The robustness tests demonstrate that the role of IMF involvement in the crisis periods mitigates the shrinkages of the GDPs in the short run, which substantiates the conditional stabilising effects of external assistance. Nevertheless, the long run economic growth is affected only in a marginal manner and the lagged programme exposure is weakly negatively related to the GDP indicating the possibility of moral hazard and slow structural adjustments. There are fiscal implications which are both positive and negative, current IMF exposure can marginally raise debt, but lagged programmes are linked to sovereign liabilities cuts, suggesting that conditionality and post-crisis fiscal reforms can enhance long-term fiscal sustainability. Social results illustrate both poverty and income inequality persistence, and IMF interventions can have little direct effect, which underscore the necessity of other redistribution labour market and social policies.

Altogether, the results highlight the fact that IMF-based sovereign assistance programs are useful as crisis-related tools but cannot substitute internal reforms, structural adjustments, and focused social policies. These programmes have economic, social and fiscal implications that are extremely context-specific and depend on the institutional contexts in place, the level of crisis and domestic policy reactions. These programmes should be viewed as a component of a larger policy by policymakers that would guarantee short-term financial security and long-term

economic development and social justice. Further studies are required to examine cross-country differences, institutionalised, and interactions between fiscal, social, and financial results in order to design and implement sovereign assistance programmes more effectively. Overall, IMF-assisted interventions can stabilise the economies in the short run but involve long-term trade-offs that need to be carefully handled at the domestic level and through combined policies to gain sustainable growth, financial stability and balanced social results.

IMPLICATIONS

Sovereign assistance programs methods should focus on long-term financial sustainability, as opposed to short-term financial or banking interventions. It indicates that newly implemented regulations in the economies ought to aim at enhancing the risk management frameworks, imposing more capital requirements, and ensuring that the financial systems are more robust. Stricter regulations would prevent overexposed behaviour among banks, which would ensure that the subsequent crisis might not demand such massive interventions. Under these economies, the targeted measures should strike a balance between financial assistance in the present and the fiscal well-being, they have to maintaining future fiscal burden. Financial aid must also be distributed in such a manner that facilitates equal recovery without exacerbating the inequality in society. In terms of post-crises effect on the central government debt concerning the IMF supported sovereign assistance programs, the results imply EU policymakers to strive for debt restructuring and fiscal burden to deal with any crises in the future.

The findings also contribute towards institutional-fiscal theory as it shows how IMF supported sovereign assistance programs conditionality affects fiscal burden, financial stability and social outcomes in different contexts of crisis. The findings form a basis of information to programme design as they create trade-offs between short term stabilisation and long-term structural adjustment in practical application. Besides policy design, the research contributes to the empirical evidence of the transmission mechanisms of IMF supported sovereign assistance programs and finds that the effect of IMF supported sovereign assistance programs is heterogeneous and differs in terms of economic, social, fiscal and regulatory aspects. This broadening of the scope will help in explaining the academic value of the study as well as establishing the relevance of the study insights within the current theoretical arguments and governance practice.

LIMITATIONS AND FUTURE RECOMMENDATIONS

There are a number of limitations to this research. To start with, although the study is based on the European countries, the results might not be applicable to the non-European or emerging economies where the institutional frameworks, financial capacity and IMF programme execution are quite different. Second, IMF credit outstanding is not a uniform proxy of sovereign assistance, which restricts evaluation of the overall fiscal and financial support, therefore the study is limited to the IMF program exposure. Third, as much as panel data and fixed-effects models can control the unobserved heterogeneity, there may still be endogeneity between IMF programme exposure and economic performance despite the inclusion of lagged variables and this indicates that the results are associational; not causal. Fourth, social performance is gauged by poverty and Gini indices which might not capture the multidimensional impacts of welfare including health, education, and the informal sector. Finally, the observational nature of the study is not able to develop any conclusive causal relationships, especially in the relationship between crisis periods, fiscal adjustments, and long-term socio-economic effects.

Future studies should extend the analysis to other parts of the world, such as emerging countries and low-income countries, to enhance generalisability and to embrace the varied institutional environments. In order to have a more comprehensive welfare impact assessment of IMF-supported programmes, researchers should include multidimensional social indicators, including health, education, and informal sector outcomes. Long-term effect inferences can be made stronger with the use of causal identification methods, including instrumental variables or natural experiments. There should also be research on the relationship between domestic fiscal reforms, structural adjustments and sovereign assistance in order to understand processes that lead to economic and social outcomes. Lastly, heterogeneity and conditionality of the programme design can be assessed to inform more effective and equitable policy interventions.

LIST OF ABBREVIATIONS

GFC	=	Global Financial Crisis
IMF	=	International Monetary Fund

AUTHOR'S CONTRIBUTION

A.S. has contributed to conceptualization, idea generation, problem statement, methodology, results analysis, results interpretation.

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Not applicable.

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The data will be made available on reasonable request by contacting the corresponding author [A.S.].

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The author declares no conflicts of interest, financial or otherwise.

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Declared none.

DECLARATION OF AI

During the preparation of this manuscript, the author used ChatGPT for language polishing. After utilizing this tool, the author carefully reviewed and refined the content as necessary and accept full responsibility for the accuracy and integrity of the published work.

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