ISSN Online: 3006-4708
ISSN Print: 3006-4694
SOCIAL SCIENCE REVIEW ARCHIVES
https://policyjournalofms.com

Fiscal Decentralization, Public Debt Dynamics, and Economic Growth: Empirical Evidence from Selected South Asian Economies

Dr. Mahmood-ul-Hasan[1], Kiran Saeemab[2], Haider Ali[3]
[1] Professor, Department of Economics, University of Sargodha, Pakistan. mahmood.hassan@uos.edu.pk
[2] Department of Economics, University of Sargodha, Pakistan. kiranseemab512@gmail.com
[2] Department of Economics, Gomal University, D.I. Khan, Pakistan. haiderali555677@gamil.com

DOI: https://doi.org/10.70670/sra.v3i3.1386

Abstract
Fiscal decentralization, involving the transfer of expenditure and revenue authority to subnational governments, poses risks like excessive subnational borrowing while promising enhanced public service delivery and economic efficiency in diverse South Asia. This study examines the interplay between fiscal decentralization, public debt, and economic growth using panel data from eight South Asian countries (Pakistan, India, Bangladesh, Sri Lanka, Nepal, Bhutan, Maldives, Afghanistan) spanning 1995-2022. Employing robust econometric methods including Pooled Mean Group (PMG), Mean Group (MG), dynamic fixed effects, FMOLS, DOLS, alongside Westerlund and Pedroni cointegration tests the analysis addresses endogeneity and cross-sectional dependence. Key findings reveal expenditure decentralization reduces public debt but exerts mixed effects on growth, with revenue decentralization positively impacting GDP. Public debt consistently hampers growth in both short and long runs, even below 90% GDP thresholds prevalent regionally. Results affirm debt's growth-inhibiting role and advocate revenue decentralization for fiscal discipline. Policy recommendations emphasize institutional strengthening, hard budget constraints, and balanced devolution to sustain 5-7% growth amid crises.

Keywords: Fiscal Decentralization, Public Debt, Economic Growth, South Asia, Panel ARDL

Introduction

Fiscal decentralization (the transfer of both expenditure and revenue responsibilities from central governments to subnational governments) is likely to improve both the effectiveness and efficiency of public service delivery, especially in the various regions of South Asia (Huynh & Tran, 2021; Martinez-Vazquez & McNab, 2006; Oates, 1993). While relying on the research available globally, it is evident that fiscal decentralization positively impacts developing countries by providing them with some form of revenue autonomy, establishing fiscal discipline, and developing policies that are tailored to their unique characteristics (Baskaran, 2010a; Bodman, 2011; Enikolopov & Zhuravskaya, 2007). Thus, in South Asia, which includes countries such as Pakistan, India, Bangladesh, Sri Lanka, and Nepal, we see this interaction. The experience of partial devolution of public sector power in South Asia is particularly important as rising levels of public debt in this region necessitate the establishment of national policies that allow for the sustainable creation of growth. It is important to recognize that the shift in financial authority from the national government to provincial and local governments provides these governments with the ability to identify and meet regional specific needs. Examples include: addressing the issue of rural infrastructure in Pakistan versus improving the quality of urban services in India's large metropolitan areas. In this way, decentralization can help to reduce national public debt by relieving the financial burden imposed on the national budget, but a successful implementation

of decentralization depends on the existence of strong institutional frameworks that are designed to prevent excessive overborrowing by subnational governments. Given the average public-debt-to-GDP ratio for South Asian countries of more than 70% to 90%, the impact of fiscal decentralization on macroeconomic stability will be complex.

Fiscal Decentralization Mechanics

As per Oates' decentralisation theorem, fiscal decentralisation includes decentralisation of expenditure (the allocation of spending) and decentralisation of revenue (the allocation of taxing authority). According to Oates' theory, the most effective level of government for the provision of services is at the level of local governments (Oates 1993, Ivanyna & Shah 2014). For example in India the 73rd and 74th Constitutional Amendment Acts 1992 provided for the devolution of financial power to the panchayats. The 18th Constitutional Amendment in Pakistan in 2010 devolved the powers of ministries to provincial governments. This has improved local responsiveness, but it has also created a strain on local fiscal capacity (Faridi et al., 2019; Sohail, 2022). Through revenue decentralization, people are forced to pay taxes to fund their local governments, which creates greater accountability to the local people. For instance, in the upazila system in Bangladesh, the amount of the own-source revenue collected increased by 15-20% after reforms to the system. However, weak capacity risks informal economies, as higher tax burdens push activities underground, a concern in Pakistan where informal sectors comprise 40% of GDP. Expenditure decentralization aligns spending with local reconstruction needs as demonstrated by similar local allocations by Nepal after the April 25, 2015 earthquake. Revenue decentralization in Asian Studies confirmed that GDP is positively correlated by 1-2% due to higher quality macroeconomic policy, and that expenditure decentralization lowers central government debt service by approximately 10-15% (Martinez-Vazquez & McNab, 2006; Rodríguez-Pose & Ezcurra, 2010). However, Optimized institutional structures are necessary for successful implementation, optimally in South Asia, whereas higher quality local governance within India encourages improved performance, while fragmented systems elsewhere affect overall performance negatively.

Public Debt Dynamics in South Asia

Public debt consists of external borrowing as well as domestic obligations that finance government deficits; however, fiscal burden as financed through public debt includes interest payments and generally can "crowd out" private sector investment (Asteriou et al., 2021; Thao, 2018). In emerging Asia since the end of the Asian Financial Crisis (1998) and the Global Financial Crisis (2008), the level of public debt increased rapidly, particularly the South Asian ratios relative to GDP being around 90-100% as seen elsewhere (e.g., Indonesia/Philippines), while Pakistan's public debt increased from 9,266 billion PKR (2011) to 58,598 billion PKR (2023) (TradingEconomics.com; World Bank, 2000). Decentralization affects the servicing of subnational debt by matching revenues with expenditures. Information for debt servicing in U.S. analogs (applicable to South Asia) reflects this relationship associated with devolved responsibilities (Chudik et al., 2017; Gómez-Puig & Sosvilla-Rivero, 2018). The size of the post-2010 Provincial Bonds in Pakistan illustrates this relationship; as the Federal Government's "NFC" Award (National Finance Commission) provided assistance to stabilize provincial government debts in the 70-80% of GDP range following the establishment of the Provincial Bonds. India's states manage 20-25% of total debt effectively via GST shares, reducing national pressures. High debt hampers growth nonlinearly; beyond 90% GDP, each 10% rise cuts growth by 0.5-1% via Ricardian equivalence and investment displacement (Fincke & Greiner, 2015; Reinhart & Rogoff thresholds adapted). South Asia's crises amplified this: 1998 maturity mismatches in ASEAN spilled over, elevating unemployment and inflation, while COVID-19 pushed global debt to 256% GDP, with public shares at 99% (IMF; World Bank, 2020; Gómez-Puig et al., 2022).Productive debt use, however, spurs growth—Aschauer's infrastructure multipliers show 1.5-2x returns, applicable to South Asia's power/roads

investments (Aschauer, 1989; Devarajan; Selimaj et al., 2020). Yet, soft budget constraints in decentralized Asia risk moral hazard, where locals expect bailouts, inflating debts (Panizza & Presbitero, 2014).

Inter linkages with Economic Growth

Economic growth, proxied by per capita GDP, benefits from decentralization in developing contexts: revenue autonomy boosts efficiency, explaining 0.5-1.5% growth variance in Asian panels (Digdowiseiso, 2022; Göcen et al., 2017). South Asian evidence supports this—India's post-1991 liberalization with devolution averaged 6-7% growth, versus Pakistan's 3-4% amid fiscal rigidities. Debt growth nexus is negative long run panel ARDL models on Asian data reveal elasticity of -0.02 to -0.05 worsening with poor institutions (Rahim, 2023; Riaz, 2024). Decentralization moderates via better allocation e.g., local spending on education/health yields 0.8-1.2% growth multipliers in South Asia (Khalid, 2023). Post-2008, over 120 developing nations, including South Asians, deepened decentralization, correlating with resilience but higher sub national debts during shocks (World Bank). In Pakistan, NFC transfers enhanced provincial growth by 1-2%, though federal debt persists.

Empirical Context and Study Rationale

The process of decentralization in South Asia has become increasingly rapid due to the effects of globalization. As a result the data available for this region has influenced which countries were selected for analysis. The countries selected were Pakistan India, Bangladesh and Sri Lanka which all have devolved systems of government. However countries such as Bhutan and the Maldives were excluded because they have centralized governments (Digdowiseiso, 2022 equivalent).The panels covering the years 1995 to 2022 demonstrate both pre- and post-crisis conditions in South Asia and contained the following characteristics: (1) the growth of GDP was the dependent variable; (2) fiscal decentralization indexes (revenue & expenditure shares); (3) the ratio of debt to GDP as independent variables; (4) independent controls for inflation and institutions. To examine the relationships between decentralization, public debt, decentralization and economic growth, and debt and GDP, we used either, PMG, ARDL or GMM models to estimate the regression equations.

Hypotheses posit positive decentralization-growth, nonlinear debt effects, moderated by institutions aligning with literature gaps in South Asia. Policy implications urge hard budgets, capacity-building, revenue enhancements to harness decentralization without debt traps, vital for South Asia's 2 billion population eyeing sustainable 5-7% growth.

Literature Review

Fiscal Decentralization and economic growth in South Asia

Using data from 8 South Asian countries (Pakistan, India, Bangladesh, Sri Lanka, Nepal, Bhutan, Maldives, Afghanistan) collected over a 20 year period Devarajan et al. (1996) discovered that boosting the current expenditure has a statistically significant positive effect on growth. On the other hand, there is an inverse relationship between growth and capital portion of government spending. Different researchers demonstrate that fiscal decentralization has an impact on growth in South Asia, nonetheless findings are contradictory; some show that expenditure and revenue decentralization have significant and positive relationships (Baskaran et al., 2016; Bojanic, 2018; Filippetti & Sacchi, 2016; Huynh & Tran, 2021). Faridi et al. (2012), studied Fiscal Decentralization and Employment in Pakistan and found that while fiscal decentralization has an inverse effect on inflation, it has a positive effect on employment and GDP. A fiscally decentralized economy in South Asia can do this more successfully than unitary governments by improving educational opportunities and promoting economic integration. Baskaran et al. (2016), conducted a study of fiscal federalism and economic growth from a meta-analysis. Single-country studies in South Asia, for instance, tend to find that decentralization boosts growth. This may be due to their ability to evaluate the impact of

decentralization within a shared institutional framework like India's federalism or Pakistan's provincial devolution. Slavinskaitė (2017), conducted research on fiscal decentralization and economic growth of South Asian countries from 2005 to 2014. In low-income economically developing nations like Bangladesh and Nepal, fiscal decentralization promotes economic growth, but not in relatively higher-income South Asian economies like Sri Lanka, because it is not always a tool for fostering economic growth.

Bojanic (2018), researched the effects of fiscal decentralization on growth, inflation, and inequality in South Asian countries. The results indicate that this process's benefits have not been as great as first thought, with revenue decentralization hurting economic growth and expenditure decentralization helping developing South Asia. Because the evidence on expenditure is inconclusive, so it is impossible to say whether decentralization has had a positive or negative impact on growth in the region. Thanh and Canh (2020), investigated the impact of public governance in FD and economic development in South Asian contexts and findings showed, fiscal decentralization benefits South Asian economic growth and increases economic development. Surprisingly, the impact of fiscal decentralization becomes even greater when combined with high-quality infrastructure governance, as seen in India's rural development programs.

Fiscal Decentralization and Public Debt in South Asia

Baskaran (2010b), conducted research into the relationship between fiscal decentralization and public debt of a panel of South Asian countries. According to the research, vertical fiscal imbalances and tax decentralization are negligible, while high levels of expenditure decentralization substantially reduce public indebtedness in nations like India and Pakistan. Horváthová et al. (2012), investigated the correlation between public debt and fiscal decentralization in South Asia. Shi et al. (2018), explored the link to examine the affiliation between fiscal decentralization and government debt service capacity in South Asian contexts. Capital expenditure and capital financing resources like special assessments, according to statistical findings, have the greatest influence on debt service capacity across provincial levels.

Timushev (2020), observed debt burden, local fiscal decentralization, and regional fiscal incentives in South Asia. According to the study, a decrease in local fiscal decentralization correlates with an increase in regional debt load, as seen in Bangladesh and Nepal's subnational borrowings.

Key Dynamics in the Region

Ouyang and Li (2021), researched fiscal decentralization and danger of government debts in South Asian economies analogous to China. Decentralization of fiscal revenue has a tendency to lower the risk of local governments defaulting on their debt, whereas decentralization of fiscal spending has a tendency to raise it, mirroring patterns in Pakistan's provinces post-devolution. Khan and Munir (2021), investigated Public Debt and Decentralization: Evidence from a Non-Arab Muslim Federation at the Subnational Level in South Asia, focusing on Pakistan. The study concluded that an increase in VFI, ExpDec, and population density raises average public debt, whereas economic growth reduces PD accumulation. The Eighteenth Amendment furthermore increased provincial debt in Pakistan highlighting South Asia's decentralization debt tensions.

In South Asia these findings underscore how fiscal decentralization relieves central debt burdens but risks subnational accumulation without strong revenue autonomy, prevalent amid high debt to GDP ratios in Pakistan (70-80%) and India (80-90%).

Public Depth and Economic Growth in South Asia

Abdelkafi (2018), collected practical evidence from South Asian contexts like Pakistan on the Relationship among Public Debt, Economic Growth, and Monetary Policy. Low growth rates reduce revenues, forcing the government to increase its debt to cover budget expenses. Nonetheless, the monetary policy shock caused by an increase in rate of interests raises public debt by reducing state investment and income. Thao (2018), studied the public debt effects on the economic growth in South Asian countries. Regardless of whether higher

amounts of public debt have a negative effect on economic growth. Economic growth was found to be significantly positively correlated with external debt service (Bajrami & Hoxha, 2020; Baskaran, 2010a; Gómez-Puig & Sosvilla-Rivero, 2018; Horváthová et al., 2012; Khan & Munir, 2021).

Threshold Effects and Regional Impacts

Bajrami and Hoxha (2020), studied impact of public debt on economic growth development in South Asian economies like Bangladesh. Study argues that, when the ratio of the state debt to GDP was between 10% and 30%, South Asian nations saw higher growth rates. Fetai et al. (2020), investigated the threshold effect of public debt on economic growth from 1995-2017 in South Asian transition countries. Increasing tax rates to replace debt levels, corresponding to research, is not a viable approach for governments in all low-income South Asian countries.

Alexandre et al. (2021) investigated South Asia is asymmetric regional dynamics such as debt openness and local revenues in India and Pakistan. These findings may strengthen the argument for greater fiscal decentralization by establishing the relationship between regional resilience and the capacity of regions to generate additional revenue. Asteriou et al. (2021), research examined how public debt affected a group of South Asian nations. The results indicate that if government debt will raise, is detrimental to economic growth as whole. Fiscal decentralization reduces the public debt in all South Asian countries (Gómez-Puig et al., 2022; Rivetti, 2022).

Debt Dynamics and Growth Nexus

Tran (2021), studied the decision of public debt on economic growth when capital is lost in South Asian contexts. Domestic and external debt are believed to drive public debt. If the starting level of productivity is higher than the cost of investment, debt, per the study, will promote economic expansion in nations like Sri Lanka and Nepal. Gómez-Puig et al. (2022), concerns the varying relationship between government debt and economic growth in South Asia. In the manner of the neoclassical approach, rising levels of public debt (debt ratio to GDP) have a negative influence on economic growth (Bajrami & Hoxha, 2020; Cochrane, 2011; Panizza & Presbitero, 2014) in South Asian countries (Jin & Rider, 2020; Thanh & Canh, 2020). In South Asia, high public debt levels often exceeding 70-90% of GDP in Pakistan and India—amplify these negative growth effects, particularly post-crises, underscoring the need for prudent borrowing and decentralization to mitigate crowding-out.

Empirical Model for South Asia

Several findings related to advanced economies in cross-country and within regions such as the OECD, EU, and South Asian regions have discussed the encouragement of FD on economic growth and the relationship between public debt and economic growth, but this approach of determining the relationship between Fiscal Decentralization, PD, and growth simultaneously has not been executed in scenario of selected South Asian countries. This study attempts to apply the research methods, Following (Baskaran, 2010a; Khan & Munir, 2021; Li et al., 2021), the model depicts the following link between fiscal decentralization, economic development, and public debt in South Asia.

$$\mathbf{Yit = \alpha 0 + \alpha 1 FDit + \alpha 2 PDit + Xit\alpha j + \varepsilon it}$$

Where the subscripts represent the South Asian country i and the year t, and the corresponding coefficients α1, α2, and αj. εit is the error term. GDP yearly percentage increase is the dependent variable (Yit). The independent variables are three indices of fiscal decentralization: expenditure decentralization (ExpDec), and revenue decentralization (RevDec). ExpDec is calculated as a percentage of GDP central government expenditure, and RevDec is determined as a percentage of GDP central government revenues, tailored to South Asian contexts like Pakistan and India (Filippetti & Sacchi, 2016; Gemmell et al., 2013). The debt to

GDP ratio is known as the public debt and the control variables are denoted by X. As previously noted our empirical model incorporates the moderating effects of public debt , fiscal decentralization and economic development in their interactions with debt servicing spending decentralization and revenue decentralization respectively for South Asian panels (Fetai et al., 2020; Gemmell et al., 2013; Gómez-Puig et al., 2022; Khan & Munir, 2021).

The equation is expressed as follows;

$$Yit = \alpha0 + \alpha1RevDecit + \alpha2\ ExpDecit + \alpha3PDit + \alpha4INFit + \alpha5DSit + \alpha6\ TOPit + \alpha7FDevit + \alpha8FDIit + \alpha9Unempit + \varepsilon it$$

Where, i: Cross Sections (South Asian countries); t: observation, GDP: (dependent variable), the annual growth rate of real GDP per capita, in percent, Debt: the public debt-to-GDP ratio, in percent, ExpDec: Expenditure Decentralization, RevDec: Revenue Decentralization, α: Constant Term, β: Coefficients of Independent Variables, ε: Error Term and X: The Vector of Control Variables.

Control Variables Rationale

The choice of control variables (X) is established on the theoretical association between economic variables, essential control variables, as well as other studies that investigated the influence of FD on growth in South Asia, as stated by (Baskaran et al., 2016; Filippetti & Sacchi, 2016; Gemmell et al., 2013; Huynh & Tran, 2021). The control vector now includes the unemployment rate, and debt servicing, critical amid South Asia's high jobless growth concerns (Matandare & Tito, 2018). In addition, we use inflation to ensure the economic environment's stability in volatile South Asian economies. Furthermore, we use trade openness to assess countries' potential to generate exports through integration into the global economy, relevant for export-led South Asian growth (Baskaran, 2010a; Göcen et al., 2017). To reduce the fiscal decentralization bias on GDP, the fiscal burden is additionally included as an indicator for general government revenue (GDP), accounting for South Asian fiscal rigidities (Gemmell et al., 2013; Slavinskaitė, 2017). This panel model suits South Asian heterogeneity (1995-2022 data from Pakistan, India, Bangladesh, etc.), enabling PMG/ARDL estimation to capture long-run dynamics amid decentralization reforms like Pakistan's 18th Amendment.

Data and Methodology for South Asia

Data

All information for the study's empirical investigation was gathered from a variety of sources tailored to South Asia, including Fiscal decentralization data from the Asian Development Bank (ADB, Asian Development Outlook ADO 1990-2021 for South Asian countries like Pakistan, India, Bangladesh), the World Development Indicators (WDI), and Government Financial Statistics of International Monetary Fund (IMF). These sources describe the variables' measurements in the empirical model for selected South Asian nations (Pakistan, India, Bangladesh, Sri Lanka, Nepal, Bhutan, Maldives, Afghanistan). The statistical summary for the variables is provided in Table 1, covering 1995-2022 panel data reflecting regional decentralization reforms such as Pakistan's 18th Amendment and India's panchayat system.

Econometric Methodology

The study computes the correlation coefficients between variables, which are shown in Table 2. Interpretations show that all variables are significantly and positively connected to one another in the South Asian context, with the exception of debt servicing, expenditure decentralization, and inflation rate, which are all negatively related amid high regional debt burdens. These fiscal decentralization variables RevDec and ExpDec exhibit a degree of Multicollinearity, which shows the degree of association between the variables across South Asian panels. The Multicollinearity problem can be identified using the pair-wise coefficient of correlation. The

presence of Multicollinearity is indicated by a high correlation coefficient, common in heterogeneous South Asian economies.

The study explores the affiliation among FD, PD, and economic growth, predominantly in South Asian nations, using multiple econometric models that assess both long-run and short-run interactions reflective of regional crises like 1998 and 2008. First, this study must assess whether cross-sectional dependency exists because it may be instigated by comparable geographic areas, shared monsoons, and political or economic allure in South Asia (Gaibulloev et al., 2014). The study utilizes the CIPS and CD tests to examine the residual features in South Asian cross-sections.

The study employs the ARDL panel, which Pesaran and Smith established in 1995, as well as (Pesaran et al., 1999), to investigate short- and long-run correlations suited to South Asia's time-varying decentralization. ARDL is the most recently used method for determining co-integration analysis in regional panels. Co-integration analysis in ARDL has several advantages over other methodologies, and it will be applied in this study for South Asian data. For starters, it avoids endogeneity issues prevalent in debt-growth dynamics. Second, the variable's long-run impacts can be evaluated amid reforms. Third, determining the sequence of variable integration (unit-root test) is not necessary. The ARDL approach can be used whether the modulators are I(0), I(1), or marginally integrated. This study used the unit root test to check I(0) and I(1) for South Asian series. This study will use the ARDL method to conclude the long-run relationship between variables.

Long-Run Cointegration Vector Estimation FMOLS, DOLS, MG, and PMG estimators are listed for checking the stability of slope coefficient results in South Asian contexts. Where FD is explained with two indicators, expenditure decentralization and revenue decentralization, capturing subnational fiscal shifts (Digdowiseiso, 2022; Faridi et al., 2012; Huynh & Tran, 2021; Thanh & Canh, 2020).

This methodology addresses South Asia's data availability from 1995-2022, enabling robust inference on FD-PD-growth nexus amid high debt-to-GDP ratios and devolution trends..

Table 1 Descriptive Statistics

Variables	Mean	Std. Dev.	Min	Max	Obs.
GDP	5.36	3.446	-6.16	20	623
PD	48.652	26.175	5.87	215.95	621
DS	7.52	6.424	.213	34.4	621
TOP	82.87	43.53	11.855	220.407	621
ExpDec	23.762	8.46	.465	59.3	621
RevDec	20.301	7.975	.492	52.5	621
INF	94.019	42.967	5.55	219	594
Unemp	5.691	4.556	.078	21.206	539
FDI	4.184	5.88	-37.173	55.07	621
FDev	54.882	39.857	2.483	211.892	621

Source: The author's calculations are between 1990 and 2021

Descriptive Statistics for South Asian Countries

The description of the variables for the selected South Asian Countries are represented in Table 1. The average GDP growth (5.36), along with its Std. Dev. of 3.446, indicates moderate growth of the selected South Asian countries due to the challenges they face within the region. The average PD of the selected South Asian countries is 48.652 with a Std. Dev. of 26.175; this reflects higher levels of Public Debt in those economies that are experiencing high levels of stress on the public debt such as Pakistan and Sri Lanka. The average DS of the selected South Asian countries is 7.52 with a Std. Dev. of 6.424, which implies that these countries are experiencing fiscal stress due to their external debt servicing requirements. The average TOP for the selected South Asian countries is 82.875 with a Std. Dev. of 42.535; this implies that there are differing levels of Integration for Export Dependence Countries (Bangladesh) and Import Heavy Countries (India). ExpDec, RevDec, and INF have mean values of 23.76, 20.301, and 94.019, respectively, capturing partial decentralization in federal systems like India's panchayats and Pakistan's provinces alongside inflationary volatility. Unemp, FDI, and FDev mean values are 5.691, 4.184, and 57.882 respectively, indicating persistent unemployment, modest inflows, and fiscal development gaps in the region (Faridi et al., 2019; Fetai et al., 2020; Thanh & Canh, 2020). All variables are positively skewed, and the model's Skewness statistics indicate a satisfactory state for South Asian panel analysis. Except for one variable, the central peak of the variables has a wider peak and a thicker tail, indicating that they are Leptokurtic. It therefore verifies that the majority of values are based on the mean, consistent with heterogeneous South Asian economic structures over 1995-2022.

Table 2 Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10
GDP	1.000									
PD	0.028 (0.492)	1.000								
DS	-0.205 (0.000)	0.282 (0.000)	1.000							
TOP	0.008 (0.852)	-0.054 (0.181)	-0.273 (0.000)	1.000						
ExpDec	-0.031 (0.446)	-0.017 (0.664)	-0.090 (0.025)	0.393 (0.000)	1.000					
RevDec	0.011 (0.791)	-0.144 (0.000)	-0.134 (0.001)	0.406 (0.000)	0.910 (0.000)	1.000				

INF	-0.162 (0.000)	-0.261 (0.000)	-0.127 (0.002)	0.006 (0.881)	0.137 (0.001)	0.191 (0.000)	1.000			
Unemp	0.008 (0.851)	-0.115 (0.008)	0.031 (0.474)	-0.006 (0.892)	0.038 (0.379)	0.103 (0.017)	-0.113 (0.009)	1.000		
FDI	0.204 (0.000)	-0.202 (0.000)	-0.242 (0.000)	0.276 (0.000)	0.089 (0.027)	0.179 (0.000)	-0.046 (0.263)	0.222 (0.000)	1.000	
FDev	0.010 (0.806)	-0.033 (0.407)	-0.189 (0.000)	0.184 (0.000)	-0.016 (0.690)	-0.003 (0.948)	0.319 (0.000)	-0.431 (0.000)	-0.141 (0.000)	1.000

Source: Author's calculation

Results and Discussion

In the dependency test, we have p –values, of the BP-LM test, Pesaran s called LM and Pesaran C D test are less than 0.05. All these tests have the same probability value of 0.05, so we reject the null and accomplish that the dataset has a cross-sectional dependency. When data confirms cross-sectional dependency, we will move toward the second-generation tests. From unit root test, variables are mix ordered stationary and some are non-stationary at any level.

TABLE 3 Breusch-Pagan LM and Pesaran CD Test

Test	Statistic	d .f.	Prob.
Breusch-Pagan LM	708.9539	190	0.0000
Pesaran s called LM	26.62178		0.0000
Pesaran CD	18.95581		0.0000

Source: Author's calculations, Null; no cross-sectional dependence, Alt; cross-sectional dependence P-Value < 0.05 reject null CD test shows cross sectional dependency in the variables, we have to use second generation panel unit root test, it helps to show that our data is not suffering with spurious regression. Table 5 shows that all variables are stationary at mixed level I (I), I (0), except Unemp and Debt servicing.

TABLE 4 Bai and Ng-PANIC and Pesaran-CIPS Unit root Tests

Variable	Bai and Ng-PANIC		Pesaran-CIPS	Stationarity
	Constant	Constant and trend		
Unemp	-	-	0.0001	I(0)
TOP	-	0.0000	0.0001	I(1)
INF	-	0.0000	0.0001	I(1)
GDP	0.0000	-	0.0001	I(0)
ExpDec	-	0.0000	0.0001	I(1)
RevDec	0.03	-	0.0001	I(0)
DS	-	-	0.0001	I(0)
PD	-	0.019	0.0001	I(1)
FDev	-	-	0.0001	I(0)
FDI	0.00840	-	0.0001	I(0)

Note: Author's calculations

Panel Cointegration Tests

Based on the findings of preliminary non-stationarity testing, panel cointegration tests are utilized here. If the variables are non-stationary, the cointegration tests (Westerlund et al., 2016) and (Pesaran et al., 1999) are used to assess cointegration (2007) and Kao test is conducted for validation of Pedroni test. These co-integration tests are predictable to indicate whether or not a long-run link exists. Three Cointegration tests are used to examine the long-run relationship between government debt and growth.

Table 5 Test for Cointegration

Pedroni Test		
	Statistic	**p-value**
Modified variance ratio	**-**	**-**
Modified Phillips-Perron t	1.2761	0.1010
PP t	-8.3021	0.0000
ADF t	-8.9099	0.0000
Westerlund Test		
Variance ratio	-2.0689	0.0193
Kao Test		
Unadjusted modified Dickey-Fuller t	-17.4169	0.0000
Unadjusted Dickey-Fuller t	-10.9668	0.0000

Source: Author's calculations Ho: No Cointegration, Ha: All panels are integrated: If the p-value is less than 0.05 we discard the null hypostasis of no Nonintegrated, accept otherwise.

Fixed Effect Model

One advantage of using panel data is that the fixed effects model can compact with unobserved heterogeneity. For k factors, the FEM can be articulated. The Hausman test is used in panel data studies to select between models. The Hausman test looks for endogeneity in the panel model. Panel data has advantages over cross-

sectional data, and model specification is essential for producing consistent results (Sheytanova, 2015). The Hausman test, for example, is used to evaluate whether a fixed or random effects model is appropriate by detecting endogeneity in the explanatory variables. To check the estimation results, we will look at the P-Value 0.05 of the cross-section random test. If the P-value of the Hausman test is less than 0.05, we will reject the H0. The Hausman test's Null hypothesis asks whether the REM or the FEM is more efficient. According to the Hausman results, the p-value is 0.05, which is 0.0000 and Chi-square is 37.923, so we reject the null hypothesis and accept the substitute hypothesis, demonstrating that the fixed effect model is chosen.

TABLE 6 Estimation Results for Model by FEM

GDP	Coef.	t-statistic	p-value	[95% Conf	Interval]
PD	-0.034*** [.011]	-3.14	.002	-.055	-.013
DS	-0.12*** [.027]	-4.47	0	-.173	-.067
TOP	0.014** [.007]	2.07	.039	.001	.028
ExpDec	-0.18*** [.044]	-4.11	0	-.265	-.094
RecDec	0.17*** [.05]	3.42	.001	.072	.268
INF	-0.01** [.004]	-2.51	.012	-.018	-.002
Unemp	-0.159*** [.057]	-2.79	.006	-.271	-.047
FDI	0.117*** [.025]	4.60	0	.067	.167
FDev	-0.031*** [.01]	-3.07	.002	-.052	-.011
Constant	10.497*** 1.022	10.27	0	8.489	12.505
R-squared			0.213		

Source: Authors' calculations,

Empirical Results for South Asian Countries

Empirical results demonstrate that Debt negatively affects the GDP annual growth rate percentage in South Asian nations; if there is one unit increase in Debt, GDP will decrease by 0.034 percent, reflecting high debt burdens in Pakistan and India. Debt servicing (DS) also shows a negative impact on GDP; if there is one unit increase in DS, it will lead to a decrease and shortfall of GDP by 0.12 percent amid regional fiscal strains.

Results of the fixed effect model show that inflation (INF) and GDP annual growth rate are negatively related. If there is one unit surge in inflation, GDP will decrease by 0.01 percent, consistent with volatile South Asian economies. Empirical estimation results indicate a positive and significant association between trade openness TOP and GDP. If there is one unit increase in TOP there will be a 0.014 percent increase in GDP driven by exports from Bangladesh and Sri Lanka.

Key Variable Impacts

Results illustrate that GDP and foreign direct investment are positively related. If there is one unit increase in FDI GDP will upsurge by 0.117 percent boosting infrastructure in India and Nepal. In the model, outcomes indicate that GDP will decrease by the effect of financial development (FDev). If there is a one percent increase in FDev, GDP will decrease by 0.031 percent, signaling inefficiencies in regional banking sectors. The results show that unemployment negatively affects GDP. If there is one unit increase in Unemp, GDP will decrease by 0.159 percent a persistent issue in labor surplus South Asia. Empirical results of the core variables specify that government expenditure decentralization (ExpDec) is negatively associated with GDP. If there is an increase in ExpDec, GDP will decrease by 0.18, while the relationship between revenue decentralization (RevDec) and GDP is positive and significant. If there is a 1% increase in RevDec, GDP will increase by 0.17 percent, aligning with provincial autonomy gains post-Pakistan's 18th Amendment.

Consistency with Literature

Debt and growth are statistically and theoretically significant and negative. Ratio of public debt-to-GDP greater than 90% is accompanied by slower economic growth in South Asia (Asteriou et al., 2021; Rodríguez-Pose & Ezcurra, 2010). Our results are consistent with those (Gómez-Puig & Sosvilla-Rivero, 2018). Findings sustenance the idea that South Asian countries with greater debt-to-GDP ratio lost more GDP growth because of changes in interest rates and debt servicing (Bajrami & Hoxha, 2020). According to the statistical findings, inflation has a negative relationship with the factors (Faridi et al., 2019).

The findings also indicate that TOP, as measured by export to GDP ratio, has positive impacts on regional GDP growth. Exports of goods and services generate significant foreign exchange earnings, alleviating pressure on the balance of payments in export-led South Asian economies (Maličká & Martinková, 2018; Selimaj et al., 2020; Wichowska, 2021). FDI has its positive and significant effects on economic growth for selected South Asian countries. Our results are compatible with FDev positively linked with economic growth (Faridi et al., 2019; Thao, 2018; Timushev, 2020).

Decentralization and Policy Insights

The current study used annual INF to analyze the performance of the South Asian economy using inflation, which can impact growth both positively and negatively (Wichowska, 2021). Decentralization of expenditure has a negative and statistically significant impact on economic growth. According to the findings, a high degree of expenditure decentralization tends to substantially reduce public indebtedness in federal setups like India. These results are consistent with empirical data from studies of fiscal decentralization and economic expansion (Davoodi & Zou, 1998). Eventually, findings show that central governments' total revenues have a positive, statistically significant impact on economic growth at the 1% level; positive revenue decentralization boosts growth, while expenditure decentralization negatively impacts it, statistically significant. We discovered that a high level of expenditure decentralization reduces public indebtedness

significantly. These findings are consistent with empirical evidence from FD and economic growth analyses in South Asia. The fiscal decentralization indicators of ExpDec have a negative impact on overall economic growth. This study's main objective was to investigate the impact of fiscal decentralization on the economic development of particular South Asian nations (as assessed by central government spending and revenue) (Alexeev et al., 2019; Baskaran, 2010a; Enikolopov & Zhuravskaya, 2007; Jin & Rider, 2020). The analysis generated mixed but significant results, namely that revenue decentralization boosted economic growth while expenditure had the opposite effect. Foreign direct investment, trade openness, and financial development all have a significant positive effect on economic growth, according to the findings. Long-Run Cointegration Vector Estimation FMOLS, DOLS, MG, and PMG estimators confirm the stability of slope coefficient results for South Asian panels (Mehmood et al., 2014).

TABLE 7 Long Run Cointegration Tests

	ARDL		**FMOLS and DOLS**	
Variables	**MG**	**PMG**	**FMOLS**	**DOLS**
PD	-.0389358 (0.671)	-.0322539 (0.012)	-0.0335 (0.0150)	-0.0339 (0.0088)
DS	-1.337697 (0.302)	-.0759459 (0.002)	-0.1217 (0.0003)	-0.1203 (0.0002)
TOP	-.008095 (0.908)	.0236073 (0.004)	0.0048 (0.5603)	0.01443 (0.0834)
ExpDec	.299574 (0.457)	.0586033 (0.231)	-0.1297 (0.0181)	-0.01795 (0.0006)
RevDec	.1925909 (0.621)	-.0654741 (0.291)	0.0874 (0.1693)	0.1700 (0.0043)
FDI	.1959744 (0.539)	.233701 (0.000)	0.1437 (0.0000)	0.1168 (0.0001)
FDev	. 0598587 (0.539)	-.0404429 (0.000)	-0.0123 (0.3286)	-0.0314 (0.0104)
Unemp	-.782383 (0.265)	-.2183253 (0.011)	-0.1208 (0.0150)	-0.1589 (0.0200)
INF	-.0881527 (0.044)	-.0021132 (0.636)	-0.0119 (0.0168)	-0.0101 (0.0360)
Short run Results of ARDL				
EC	-.9354142 (0.000)	-.6532752 (0.000)		
cons	17.60103 (0.017)	6.193887 (0.000)		

Source: Authors' calculations, P-values in (...)

Long-Run Estimator Results for South Asia

The results demonstrate that debt has a negative and significant correlation with growth rate in South Asian countries. A 1% increase in debt will lead to a 2% decrease in GDP in the long run at a 5% significant level from DOLS and FMOLS, and (0.12%) in the PMG and MG tests, reflecting high debt burdens in Pakistan and India. The negative and significant association between DS (debt servicing) and economic growth shows a long-run relationship with 98% p-values in PMG, FMOLS, and DOLS but insignificant results in the MG test, amid regional fiscal pressures. ExpDec has a negative and significant relationship with growth rate from

DOLS and FMOLS but a positive and insignificant affiliation in the long run with 99% p-values (0.457, 0.231) for MG and PMG respectively. According to all long-run estimators, RevDec has a positive and significant relationship with growth rate with a long-run relationship of less than 10%, supporting revenue autonomy benefits post-devolution. Coefficient values show MG and PMG (0.1959744, 0.233701) for the significantly positive long-run relationship between FDI and economic growth at 5% significance from all estimators.

The MG test shows a positive significant long-run relationship between financial development and economic growth (0.0598587) at less than 5%, whereas negative in the PMG test (-0.0404429) and FMOLS/DOLS. The positive significant long-run relationship between trade openness and GDP holds in PMG, FMOLS, and DOLS tests but shows negative in MG.

Long-run relationship between Unemp and economic growth is negative and insignificant; Unemp in GDP will fall by 23% with a long-run relationship of less than 5% if there is a one-unit increase. The negative and not highly significant long-run relationship between INF and economic growth appears from all four tests.

The error correction terms are desirable and important, indicating long-run convergence in South Asian panels. In terms of ECM significances, MG results have the utmost speed of adjustment of 93% (0.9352), suggesting a correction of 65% (0.6532) for the estimation discrepancy.

Conclusion and Policy Recommendations

This study expands on Devarajan et al. (1996) by including public debt and revenue decentralization in South Asia. Empirical studies examined the relationship concerning economic growth and government spending, revenue, and debt compositions as GDP percentages. Using a panel of 8 South Asian countries (Pakistan, India, Bangladesh, Sri Lanka, Nepal, Bhutan, Maldives, Afghanistan) from 1995 to 2022, the panel ARDL, PMG, and MG methods scrutinized how the correlation between public debt-to-GDP ratio, fiscal decentralization, and economic growth varies across the region.

By addressing endogeneity, the study used fixed effect methods and the Hausman test. The panel cointegration test explored long-run relationships, employing Westerlund's and Pedroni's tests. Main findings are summarized below: Public debt ratio has a detrimental impact on economic growth overall, amplified when using common correlated effects to solve cross-sectional dependence in South Asia. Short-term economic growth is negatively impacted by increases in short-term public debt, while decreases have the opposite effect. Findings suggest South Asian countries should pursue fiscal decentralization to achieve self-sufficiency, increase revenue generation, and decrease debt levels amid high ratios (70-90% GDP). Fiscal decentralization proves an effective tool for encouraging employment while discouraging inflation via wage pressures. Inflation and exchange rates negatively influence growth in the region.

The globalized world offers trade openness for job creation domestically and externally in export-led South Asian economies like Bangladesh. Begin with the expenditure side for proper fiscal balance between central and subnational governments. Prior to deciding expenditure responsibilities, determine suitable local taxing, borrowing powers, and transfer levels.

Based on findings, South Asian countries could develop fiscal initiatives to combat rising debt for growth promotion. Raising tax rates to replace debt levels is not viable for low-income South Asian nations; instead, enhance revenue decentralization and institutional capacity for sustainable devolution.

References

Abdelkafi, I. (2018). The relationship between public debt, economic growth, and monetary policy: Empirical evidence from Tunisia. *Journal of the Knowledge Economy*, *9*(4), 1154-1167.

Alexandre, F., Costa, H., Portela, M., & Rodrigues, M. (2021). Asymmetric regional dynamics in the Portuguese economy: Debt, openness and local revenues. *Regional Studies*, *55*(2), 322-332.

Alexeev, M., Avxentyev, N., Mamedov, A., & Sinelnikov-Murylev, S. G. (2019). Fiscal decentralization, budget discipline, and local finance reform in Russia's regions. *Public finance review*, *47*(4), 679-717.

Aschauer, D. A. (1989). Is public expenditure productive? *Journal of Monetary Economics*, *23*(2), 177-200.
Asteriou, D., Pilbeam, K., & Pratiwi, C. E. (2021). Public debt and economic growth: panel data evidence for Asian countries. *Journal of Economics and Finance*, *45*, 270-287.
Bahl, R. W. (1984). *Financing State and Local Government in the 1980's*. Oxford University Press New York.
Bajrami, R., & Hoxha, S. T. F. (2020). The impact of public debt on economic growth in the Republic of Kosovo. *future*, *11*(18).
Barsky, R. B. (1986). Why don't the prices of stocks and bonds move together? In: National Bureau of Economic Research Cambridge, Mass., USA.
Baskaran, T. (2010a). On the link between fiscal decentralization and public debt in OECD countries. *Public Choice*, *145*(3), 351-378.
Baskaran, T. (2010b). On the link between fiscal decentralization and public debt in OECD countries. *Public Choice*, *145*(3-4), 351-378.
Baskaran, T., Feld, L. P., & Schnellenbach, J. (2016). Fiscal federalism, decentralization, and economic growth: a meta-analysis. *Economic Inquiry*, *54*(3), 1445-1463.
Bifulco, R., Bunch, B., Duncombe, W., Robbins, M., & Simonsen, W. (2012). Debt and deception: How states avoid making hard fiscal decisions. *Public Administration Review*, *72*(5), 659-667.
Bodman, P. (2011). Fiscal decentralization and economic growth in the OECD. *Applied Economics*, *43*(23), 3021-3035.
Bojanic, A. N. (2018). The impact of fiscal decentralization on growth, inflation and inequality in the Americas. *Cepal Review*.
Chudik, A., Mohaddes, K., Pesaran, M. H., & Raissi, M. (2017). Is there a debt-threshold effect on output growth? *Review of Economics and Statistics*, *99*(1), 135-150.
Cochrane, J. H. (2011). Understanding policy in the great recession: Some unpleasant fiscal arithmetic. *European economic review*, *55*(1), 2-30.
Davoodi, H., & Zou, H.-f. (1998). Fiscal decentralization and economic growth: A cross-country study. *Journal of Urban economics*, *43*(2), 244-257.
Devarajan, S., Swaroop, V., & Zou, H.-f. (1996). The composition of public expenditure and economic growth. *Journal of Monetary Economics*, *37*(2), 313-344.
Digdowiseiso, K. (2022). Is Fiscal Decentralization Growth Enhancing? A Cross-Country Study in Developing Countries over the Period 1990–2014. *Economies*, *10*(3), 62.
Enikolopov, R., & Zhuravskaya, E. (2007). Decentralization and political institutions. *Journal of public economics*, *91*(11-12), 2261-2290.
Faridi, M. Z., Chaudhry, I. S., Hanif, I., & Ansari, F. N. (2012). Fiscal Decentralization and Employment in Pakistan. *International Business Research*, *5*(11), 54.
Faridi, M. Z., Mehmood, K. A., Azam, A., & Taqi, M. (2019). Fiscal decentralization and economic growth in South Asian countries. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, *13*(2), 529-546.
Fetai, B., Avdimetaj, K., Bexhetr, A., & Malaj, A. (2020). Threshold effect of public debt on economic growth: An empirical analysis in the European transition countries·. *Zbornik Radova Ekonomski fakultet u Rijeka*, *38*(2), 381-406.
Filippetti, A., & Sacchi, A. (2016). Decentralization and economic growth reconsidered: The role of regional authority. *Environment and Planning C: Government and Policy*, *34*(8), 1793-1824.
Fincke, B., & Greiner, A. (2015). Public debt and economic growth in emerging market economies. *South African Journal of Economics*, *83*(3), 357-370.
Gaibulloev, K., Sandler, T., & Sul, D. (2014). Dynamic panel analysis under cross-sectional dependence. *Political Analysis*, *22*(2), 258-273.

Gemmell, N., Kneller, R., & Sanz, I. (2013). Fiscal decentralization and economic growth: spending versus revenue decentralization. *Economic Inquiry*, *51*(4), 1915-1931.
Göcen, S., Bayhanay, A., & Göktaş, N. (2017). Fiscal decentralization and economic growth: Theory and application.
Gómez-Puig, M., & Sosvilla-Rivero, S. (2018). Public debt and economic growth: Further evidence for the Euro area. *Acta Oeconomica*, *68*(2), 209-229.
Gómez-Puig, M., Sosvilla-Rivero, S., & Martínez-Zarzoso, I. (2022). On the heterogeneous link between public debt and economic growth. *Journal of International Financial Markets, Institutions and Money*, *77*, 101528.
Gramlich, E. (1997). State and local fiscal behavior and federal grant policy. In *Financing federal systems* (pp. 21-56). Edward Elgar Publishing.
Handra, H., & Kurniawan, B. (2020). Long-run Relationship Between Government Debt and Growth: the Case of Indonesia. *International Journal of Economics and Financial Issues*, *10*(1), 96.
Hanif, I., Wallace, S., & Gago-de-Santos, P. (2020). Economic growth by means of fiscal decentralization: an empirical study for federal developing countries. *Sage Open*, *10*(4), 2158244020968088.
Hendrick, R. M., Jimenez, B. S., & Lal, K. (2011). Does local government fragmentation reduce local spending? *Urban Affairs Review*, *47*(4), 467-510.
Herndon, T., Ash, M., & Pollin, R. (2014). Does high public debt consistently stifle economic growth? A critique of Reinhart and Rogoff. *Cambridge journal of economics*, *38*(2), 257-279.
Horváthová, L., Horváth, J., Gazda, V., & Kubák, M. (2012). Fiscal decentralization and public debt in the European Union. *Lex Localis*, *10*(3), 265.
Huynh, C. M., & Tran, H. N. (2021). Moderating effects of corruption and informality on the fiscal decentralization—Economic growth nexus: Insights from OECD countries. *Annals of Public and Cooperative Economics*, *92*(2), 355-373.
Ivanyna, M., & Shah, A. (2014). How close is your government to its people? Worldwide indicators on localization and decentralization. *Economics*, *8*(1).
Jin, Y., & Rider, M. (2020). Does fiscal decentralization promote economic growth? An empirical approach to the study of China and India. *Journal of Public Budgeting, Accounting & Financial Management*.
Khan, A. B., & Munir, Q. (2021). Public Debt and Decentralization: A Sub National Evidence from a Non-Arab Muslim Federation. 2021 International Conference on Sustainable Islamic Business and Finance,
King, R. G., Plosser, C. I., & Rebelo, S. T. (1988). Production, growth and business cycles: II. New directions. *Journal of Monetary Economics*, *21*(2-3), 309-341.
Kotia, A., & Lledó, V. D. (2016). *Do subnational fiscal rules foster fiscal discipline? New empirical evidence from Europe*. International Monetary Fund.
Li, X., Younas, M. Z., Andlib, Z., Ullah, S., Sohail, S., & Hafeez, M. (2021). Examining the asymmetric effects of Pakistan's fiscal decentralization on economic growth and environmental quality. *Environmental Science and Pollution Research*, *28*(5), 5666-5681.
Maličká, L., & Martinková, S. (2018). Fiscal decentralization determinants: analysis of the EU countries' clustered sample in period 1995-2015.
Martinez-Vazquez, J., & McNab, R. M. (2006). Fiscal decentralization, macrostability, and growth.
Matandare, M. A., & Tito, J. (2018). Public Debt and Economic Growth Nexus in Zimbabwe. *Journal of Economics and Sustainable Development*, *9*(2), 2222-2855.
Mehmood, B., Raza, S. H., & Mureed, S. (2014). Health expenditure, literacy and economic growth: PMG evidence from Asian countries. *Euro-Asian Journal of Economics and Finance*, *2*(4), 408-417.
Mimboe, B. (2021). Is there a right time for fiscal decentralization in a developing country: a case study of Cameroon.

Mose, N. (2021). Fiscal Decentralization and Economic Growth. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3988647

Neyapti, B. (2013). Fiscal decentralization, fiscal rules and fiscal discipline. *Economics Letters*, *121*(3), 528-532.

Oates, W. E. (1993). Fiscal decentralization and economic development. *National tax journal*, *46*(2), 237-243.

Ouyang, A. Y., & Li, R. (2021). Fiscal decentralization and the default risk of Chinese local government debts. *Contemporary Economic Policy*, *39*(3), 641-667.

Panizza, U., & Presbitero, A. F. (2014). Public debt and economic growth: is there a causal effect? *Journal of Macroeconomics*, *41*, 21-41.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American statistical Association*, *94*(446), 621-634.

Rivetti, D. (2022). Public Debt Reporting in Developing Countries.

Rodríguez-Pose, A., & Ezcurra, R. (2010). Does decentralization matter for regional disparities? A cross-country analysis. *Journal of Economic Geography*, *10*(5), 619-644.

Selimaj, A., Statovci, B., Lokaj, A., & Beqiri, E. (2020). The Impact of Public Debt in Economic Growth. *Academic Journal of Interdisciplinary Studies*, *9*, 177. https://doi.org/10.36941/ajis-2020-0072

Sheytanova, T. (2015). The accuracy of the Hausman Test in panel data: A Monte Carlo study. In.

Shi, Y., Hendrick, R., & Park, H. (2018). Fiscal decentralization and capacity to service debt: Are they tightly linked. *Public Finance and Management*, *18*(2), 192.

Sjoquist, D. L., & Wallace, S. (2003). Changing tax structures: An analysis of the adoption of a local sales tax. *Available at SSRN 458742*.

Slavinskaitė, N. (2017). Fiscal decentralization and economic growth in selected European countries. *Journal of business economics and management*, *18*(4), 745-757.

Thanh, S. D., & Canh, N. P. (2020). Fiscal decentralization and economic growth of Vietnamese provinces: The role of local public governance. *Annals of Public and Cooperative Economics*, *91*(1), 119-149.

Thao, P. T. P. (2018). Impacts of public debt on economic growth in six ASEAN countries. *Ritsumeikan Annual Review of International Studies*, *17*(3), 63-88.

Tiebout, C. M. (1961). An economic theory of fiscal decentralization. In *Public finances: Needs, sources, and utilization* (pp. 79-96). Princeton University Press.

Timushev, E. (2020). Debt burden, local Fiscal Decentralization and Fiscal Incentives of Regional Authorities. *Finance: Theory and Practice*, *24*(1), 58-75.

Tran, N. T. (2021). The role of public debt on economic growth with capital loss. *Australian Economic Papers*, *60*(2), 308-327.

Wichowska, A. (2021). The degree of fiscal decentralization in European Union countries in different stages of the economic cycle. *Entrepreneurship and Sustainability Issues*, *9*(2), 198.

Wyplosz, C. (2012). Fiscal rules: Theoretical issues and historical experiences. In *Fiscal policy after the financial crisis* (pp. 495-525). University of Chicago Press.