



The effect of capital gains tax on economic growth in OECD countries: Lessons for Developing Economies

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Highlights

- Capital gains tax (CGT) has a positive and statistically significant effect on economic growth in 35 OECD countries over 2000–2021.
- The positive CGT-growth relationship remains robust across five alternative specifications, including different control variables, tax proxies, and lag structures.
- CGT enhances growth by reducing speculation and asset lock-in, channeling financial resources toward productive activities.
- The growth-enhancing effect of CGT depends on strong institutions, fiscal transparency, administrative capacity, and efficient public spending.

Article History

Received: 07 May 2026

Revised: 13 September 2026

Accepted: 15 September 2026

Published: 19 October 2026

JEL Classification

H24

O47

E62

C23

Keyword

Capital Gains Tax (CGT)

Difference Generalized Method of Moments (GMM)

Economic Growth

Fiscal Policy

OECD Countries

Abstract

Economic growth is a key indicator of economic performance, and taxation is an important instrument of fiscal policy that influences resource allocation and economic incentives. This study examines the effect of capital gains tax (CGT) on economic growth in 35 OECD member countries over the period 2000–2021, using panel data and the Difference Generalized Method of Moments (Difference GMM) estimator. The sample is restricted to countries with complete and consistent data for the variables included in the analysis. The results reveal a positive and statistically significant relationship between CGT and economic growth, suggesting that capital gains taxation may contribute to economic dynamism and the allocation of financial resources to productive activities. The findings also indicate that lagged economic growth positively affects current growth, highlighting the persistence of economic growth over time. Furthermore, growth in trade openness, financial development, and capital formation has a positive and significant effect on economic growth. In contrast, growth in government consumption expenditure and inflation negatively and significantly affects economic growth. These findings underscore the importance of tax policy and macroeconomic conditions in shaping economic performance. They suggest that an appropriately designed capital gains tax system, alongside policies that promote trade openness, financial development, and capital formation, may support sustainable economic growth. However, the effectiveness of such policies depends on the institutional and economic context in which they are implemented.

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Doi: [10.22099/ijes.2026.56096.2119](https://doi.org/10.22099/ijes.2026.56096.2119)



1. Introduction

Sustainable and long-term economic growth has consistently been the primary objective of policymakers worldwide, recognized as the engine driving the improvement of living standards, poverty reduction, and the enhancement of social welfare. In this context, government fiscal policies, particularly the taxation sector, play a vital role in securing financial resources and guiding the incentives of economic actors. A country's tax structure can influence the long-term growth trajectory by affecting decisions related to saving, investment, and risk-taking.

Capital Gains Tax (CGT) is one of the important, yet controversial, components within the tax systems of developed countries, especially among the members of the Organization for Economic Co-operation and Development (OECD). This tax is levied on the profit generated from the sale of capital assets (such as stocks, bonds, and real estate). The functions of the capital gains tax include regulating the activities of various economic sectors, curbing speculation, increasing public revenues, establishing social equity, and enhancing economic efficiency.

In the economic literature, there are extensive theoretical and empirical debates regarding the net effect of this tax on economic growth. On the one hand, proponents of CGT argue that it contributes to the overall health of the economy by enhancing tax equity (since income from capital gains is often earned by high-income strata) and by increasing financial stability through the reduction of excessive speculation. On the other hand, critics contend that the capital gains tax, particularly at high rates, can cause a "lock-in effect," meaning investors refrain from selling their assets to avoid the tax liability. This consequently leads to inefficient capital allocation, reduced incentives for saving and new capital formation, ultimately slowing down the process of economic growth.

Numerous studies have examined the impact of taxation on the growth of various economic sectors. [Alinaghi and Reed \(2021\)](#) analyzed the effect of taxation on economic growth in OECD countries using a meta-analysis. In Nigeria, [Fasina and Adegbite \(2016\)](#) assessed the impact of capital gains tax on economic growth through multiple regression analysis. [Fazzari and Herzon \(1995\)](#) investigated the effect of the capital gains tax rate in the U.S. economy using a theoretical approach. Young [Lee and Roger Gordon \(2005\)](#) also evaluated the impact of tax policies on economic growth across 90 countries.

Among domestic studies, [Maleki et al. \(2016\)](#) examined the effect of wealth-based tax payments on capital accumulation, financial development, and economic growth in Iran. In another study, the impact of tax avoidance on economic growth in Iran was investigated by [Jabbari et al. \(2018\)](#).

A review of previous studies reveals that numerous investigations have focused on the impact of taxation on economic growth. However, few studies have specifically examined the effect of capital gains tax on economic growth over a long-term period in countries with an extensive history of implementing this type of tax.

Most OECD member countries are among the world's largest economies and generally possess advanced and transparent tax systems. With a long history of

implementing capital gains tax (CGT) regulations, these countries have accumulated diverse practical experience in applying this form of taxation. Considering this, the present study investigates the effects of capital gains tax on economic growth in OECD countries over the period 2000–2021, using panel data and the Difference Generalized Method of Moments (GMM).

2. Literature Review

The impact of taxation on economic growth has been examined in various studies. However, the effect of capital gains taxation has been addressed in fewer studies. In this section, a review of the related literature is provided.

In the context of Iranian studies, [Rajabi and Mir Mohammadsadeghi \(2011\)](#) investigated the effect of taxes on Iran's economic growth over the period 1973–1987 using time-series data, employing the Three-Stage Least Squares (3SLS) method while considering the system of general economic equilibrium across sectors. The findings of this study indicated a direct relationship between government expenditure and the rate of economic growth, and an inverse relationship between the tax rate and the growth rate.

[Maddah and Farahati \(2014\)](#) investigated the asymmetric causal relationship between tax revenues and government expenditures in Iran using quarterly data from 2001 to 2012. Applying symmetric and asymmetric error correction models, they found evidence of fiscal illusion, indicating a negative causal relationship between real tax revenues and real government expenditures. Notably, the asymmetric model revealed that fiscal illusion exists only when tax revenues decrease—leading to higher government expenditures after one year—while positive changes in tax revenues show no Granger causal relationship. This finding suggests that raising taxes during budget deficits may be an effective fiscal instrument in developing economies.

[Sameti et al. \(2015\)](#) examined Capital Gains Tax (CGT) and its impact on housing prices. This research was conducted on a selection of member countries of the Organization for Economic Co-operation and Development (OECD) using annual panel data over the years 2000–2013, employing the GMM method. The results showed that neither normal capital gains tax nor speculation tax has an effect on the growth of housing prices.

[Maleki et al. \(2016\)](#) investigated the impact of Capital Gains Tax on capital accumulation, financial development, and economic growth in Iran during the period 1970–2014, using a simultaneous equations system and the GMM method. The findings of this study indicated that an increase in the growth rate of capital gains tax with a three-period lag increases the growth rate of physical capital accumulation. Furthermore, an increase in the growth rate of capital gains tax with a three-period lag reduces the growth rate of financial development but increases the economic growth rate. In this research, the J-statistic value and the chi-squared probability value indicated that the instrumental variables introduced into the simultaneous equations system were all valid and that all models were correctly estimated.

Jabbari et al. (2018) studied the effects of tax avoidance on economic growth by considering the role of human capital, solving and calibrating a mathematical model in Iran. The results obtained from this research indicated that the effect of tax avoidance alongside human capital on economic growth is inverse, and with an increase in the intensity of tax avoidance, economic growth decreases. Conversely, the effects of human capital accumulation and human capital growth on economic growth were positive. Moreover, the findings suggested that as tax avoidance increases, the welfare cost to the government increases more severely.

Torki Harchegani and Dahmardeh (2018) examined the effects of green taxes on Iran's health sector using a general equilibrium model calibrated with the 2011 Social Accounting Matrix. Their findings indicate that green taxes reduce all types of environmental pollutions. The study also quantified health costs, with 62% attributed to mortality, 26.4% to morbidity, and 11.6% to non-health effects. This research highlights that environmental taxes, as a specific form of fiscal policy, can generate positive non-economic outcomes—an important consideration for developing economies seeking to design growth-enhancing tax systems.

Torabifar et al. (2022) analyzed the functions and important components in designing a Capital Gains Tax in selected countries. In this project, by collecting information from various sources and using a descriptive-analytical method based on library studies, the study examined tax behavior regarding capital gains, the functions of imposing a capital gains tax, and the critical parameters in designing a CGT in OECD member countries. The results indicated that a well-designed capital gains tax can bring significant benefits to the people and production growth in the country; conversely, a flawed design of this tax base can be detrimental to the country.

Rezaei (2022) simulated the effects of tax incentives (including tax reductions) on macroeconomic variables in Iran using a New Keynesian general equilibrium model. The study found that under flexible wages and prices, tax incentives lead to unsustainable fiscal deficits. However, under nominal rigidities, they generate positive effects on investment, output, and fiscal sustainability. This finding implies that the growth effects of capital gains tax depend critically on the price and wage flexibility characteristics of each economy.

Moradzadeh (2023) examined the effects of capital gains tax in the Iranian economy in another study. He collected data and information from the Central Bank and the Statistical Center of Iran and analyzed the collected data based on a descriptive-analytical research method. The results of this research indicated that while producers and employees in Iran are obliged to pay taxes, capitalists and speculators do not pay taxes on the income earned from capital and speculation. Therefore, tax injustice incentivizes economic actors toward unproductive activities. Furthermore, imposing a capital gains tax supports production and productive investment by limiting speculative activities, reduces volatility in asset markets such as cars, housing, gold, and currency, prevents sudden price increases in these markets, improves tax equity, encourages firms to use domestic financing, and enhances efficiency, considering the lock-in effect. The investigation

suggests that one way to reduce unproductive activities in the country is to increase the costs associated with these activities, which cannot be effectively achieved by the tool of capital gains tax alone. Simultaneously, the business and investment environment in the country must be improved, and removing existing obstacles to productive and manufacturing activities must be prioritized.

In foreign studies, Lee and Roger (2005), in an article titled “Tax Structure and Economic Growth,” used panel data to examine the impact of fiscal policies on the economic growth of 90 countries over the years 1970 to 1997. They found that statutory corporate tax rates had a significant negative correlation with cross-sectional differences in average economic growth rates, after controlling for other determinants of economic growth and other standard tax variables. An increase in corporate tax rates leads to a reduction in future growth rates within countries. Furthermore, the coefficient estimates indicated that a 10% reduction in the corporate tax rate increases the annual growth rate by one to two percent. Overall, the results of this study confirmed the influence of fiscal policies on national growth rates.

Fazzari and Herzon (1995), in an article titled “Capital Gains Tax Cuts, Investment, and Growth,” analyzed the impact of the capital gains tax rate on the United States economy using theoretical analysis. The results of this research indicated that a reduction in capital gains income, considering capital gains as an inflation index, lowers the cost of business capital. A reduction in the cost of capital, in turn, leads to the improvement and enhancement of the U.S. economy’s condition. Another finding of this research is that an increase in capital stock leads to an increase in Gross Domestic Product (GDP), and nominal economic growth does not require political change to increase output resulting from a reduction in capital gains tax.

Argëri, Brown, and Rossi (2013), in an article using panel data over the period 1985–2009, examined the effect of capital gains tax and transfer tax on housing price growth in 92 regions of Switzerland. The results of this study indicated that during periods of low inflation, the capital gains tax has no effect on housing price growth, whereas during boom periods, it has a significant positive effect. The findings also segmented the regions based on tourism intensity into three groups: 1. High tourism intensity, 2. Low tourism intensity, and 3. Medium tourism intensity, noting that the impact of increased capital gains on housing price growth differed across these regions. Generally, the researchers concluded that property and capital gains taxes in the real estate market may not be suitable as a macroprudential policy tool.

Fasina and Adegbite (2016) assessed the impact of capital gains tax on economic growth, as well as its important components, using multiple regression over the years 2006 to 2015 in Nigeria. The results of this study showed that the capital gains tax has a positive and significant effect on economic growth, but its level of significance in Nigeria is very low. The researchers recommended that the Nigerian government increase the capital gains tax rate to boost revenue from this source and secure citizens’ welfare.

Maleki et al. (2016), using a simultaneous equations system with the GMM method, investigated the effect of capital gains tax on capital formation and financial development in selected European Union countries (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, and Sweden) using a panel data approach. The results of this study demonstrated that the growth rate of capital gains tax, with a one-period lag, increases the growth rate of physical capital formation. Similarly, the lagged growth rate of capital gains tax causes a decrease in the growth of financial development and an increase in the rate of economic growth.

Osho et al. (2019) studied the impact of capital gains tax on investment, social, and economic development in Nigeria over the period 2007 to 2017, using multiple regression analysis and Pearson correlation techniques. The findings revealed that the capital gains tax has a positive and significant effect on investment and social and economic development in Nigeria, although its level of significance is very low. Therefore, this research recommended that the government increase the Capital Gains Tax (CGT) rate, but not beyond a tolerable limit to prevent controversy and maximize the allocable government revenue for increasing GDP.

Alinaghi and Reed (2021) conducted a review and evaluation of the effect of taxation on economic growth in OECD countries using meta-analysis. The results of this study indicated that fiscal policies intended to boost growth, such as using distortion-free taxes to finance productive expenditures, are significantly associated with higher economic growth (a tax increase was associated with an approximate 0.2 percent increase in annual GDP growth). Conversely, taxes used to finance non-productive expenditures are significantly associated with lower economic growth (a 10 percent increase in taxes was associated with a 0.2 percent decrease in annual GDP growth). Based on these results, the researchers concluded that the estimated differences in these policies suggest there is a context in which tax policy can have a significant impact on economic growth.

Dimitrova and Eswar (2023) conducted a study to investigate the effect of capital gains taxation on venture capital (VC) investment and innovation outcomes in start-ups. They employed a quasi-experimental research design using staggered changes in state-level capital gains tax rates across the United States, and analyzed the effect of these tax changes on VC-backed start-ups' patenting activity. The results indicated that an increase in the capital gains tax rate for VC firms reduces both the quantity and quality of patents produced by start-ups, with the elasticity of patents to changes in the capital gains tax estimated between -0.45 and -0.75. The study further found that higher capital gains taxes lead to lower innovation exchanges between start-ups in a VC firm's portfolio, as well as decreased investment levels and portfolio sizes, while increasing the number of start-ups that are written off. The researchers concluded that incentivizing VC firms through lower capital gains taxation could significantly benefit innovation and productivity growth, which are crucial drivers of long-term economic growth

Fuss and Munro (2024) conducted a study to examine the impact of Canada's capital gains tax policy changes on international competitiveness and economic growth. They employed a comparative analysis method and utilized data on top capital gains tax rates across 38 OECD countries in 2024 to analyze how variations in the capital gains tax inclusion rate affect a country's attractiveness for investment. The results indicated that Canada's decision to increase the inclusion rate from 50% to 66.7% caused the country to drop in the OECD tax competitiveness rankings, with Canada's top capital gains tax rate now ranging from 31.7% to 36.5% depending on the province, placing it above countries such as Italy, Germany, and Sweden. The study demonstrated that such an increase harms investment, productivity, entrepreneurship, and innovation, ultimately leading to negative consequences for long-term economic growth. Conversely, the authors showed that lowering the inclusion rate to 33.3% would make Canada one of the most competitive jurisdictions in the OECD, with top rates between 15.8% and 18.3%, surpassing the majority of OECD countries. The researchers concluded that capital gains tax competitiveness is a crucial determinant of investment attraction and economic growth, and that higher capital gains taxes generally create a bias against saving and investment, reduce capital formation, and slow economic growth.

Jung and Park (2026) investigated the effect of capital gains taxation on housing price growth during the monetary expansion period caused by the COVID-19 pandemic. They employed a panel dataset of 29 OECD countries over the period 2012–2022 and utilized the Generalized Method of Moments (GMM) estimator to analyze the relationship between tax regimes and housing price dynamics. The results indicated that countries that increased their real estate capital gains tax rates between 2012 and 2020 experienced slower housing price growth during the pandemic, such that a 10 percentage point increase in the tax rate was associated with approximately 11% lower housing price growth under moderate liquidity conditions. However, under aggressive monetary expansion, the mitigating effect of taxation was substantially weakened and nearly offset. The researchers concluded that capital gains taxation alone is insufficient to counteract liquidity-driven housing booms, and that coordinated fiscal-monetary policy responses are essential for stabilizing asset markets during future expansionary episodes.

A major research gap remains in the scarcity of comprehensive empirical studies in developing countries, particularly Iran, utilizing high-frequency data and dynamic general equilibrium models. Furthermore, even in OECD countries with a long history of CGT implementation, most existing studies have focused on short-term or sectoral effects, leaving the long-run growth implications of this tax largely unexplored. This study aims to fill this gap by providing new panel evidence on the growth effects of CGT across OECD countries over the period 2000–2021, employing the Difference GMM estimator to address endogeneity concerns.

The review of Iranian studies indicates that CGT exerts a significant influence on economic growth, although the direction and magnitude of this effect depend on economic conditions, tax structure, time horizon, and estimation methods. Scholars findings, despite the limited number of empirical investigations, suggest that due to the effective exemption of speculators and unproductive investors from CGT, tax injustice has intensified, thereby increasing incentives for unproductive activities. Evidence such as the positive effect of CGT on economic growth with a three-period lag (Maleki et al., 2016) and the inverse effect of tax avoidance on economic growth (Jabbari et al., 2018) confirm that a well-designed CGT can curtail speculative activities and support productive investment. Nevertheless, some domestic studies (e.g., Sameti et al., 2015) found no significant effect on housing price growth.

In international studies, most research indicates that a reduction in the capital gains tax rate lowers the cost of capital, leading to capital accumulation and economic growth (Fazzari & Herzon, 1995; Lee and Roger, 2005). However, in certain contexts, CGT had no effect on housing price growth (Argéri, Brown, & Rossi, 2013) or had a positive but negligible effect on economic growth (Fasina & Adegbite, 2016). Furthermore, meta-analytical studies (Alinaghi & Reed, 2021) demonstrate that the growth effect of taxation critically depends on whether tax revenues finance productive versus unproductive government expenditures. In conclusion, while CGT can be an effective instrument for improving efficiency, tax equity, and reducing asset market volatility, its success hinges on appropriate design, coordination with other fiscal policies, and improvements in the business and investment environment. A major research gap remains in the scarcity of comprehensive empirical studies in developing countries, particularly Iran, utilizing high-frequency data and dynamic general equilibrium models.

3. Theoretical Basis

Fiscal policies are undoubtedly the most important economic tools for government policymaking. Taxes, as one of these tools, are responsible for providing the necessary resources for governments to fulfill their governmental, economic, and welfare duties. Accordingly, taxes and their effects are one of the vital economic subjects of any society, receiving special attention from theorists in this field.

Tax laws, including those in economic areas, are perhaps one of the most crucial pillars for implementing government economic policies. These laws not only guarantee revenue generation for the government but are also utilized as one of the most significant instruments of fiscal policy to achieve economic and social goals. For example, the lever of taxation is used to adjust income and wealth, establish social justice, and achieve the desired economic growth and development for any society (Saeedi and Kalami; 2008).

Many macroeconomic variables of countries are influenced by the prevailing tax structure. Economic growth, as one of the most important macroeconomic variables and the foundation of development, is among these variables. Many

economic theories hold differing views on the controversial relationship between tax structure and economic growth, and they propose various mechanisms through which the tax mechanism influences economic growth.

According to the Neoclassical Growth Models proposed by [Solow \(1956\)](#) and [Swan \(1956\)](#), changes in tax rates can induce changes in the growth rate's deterrence because, in these theories, tax is considered an exogenous variable in the growth model. Therefore, its effect on the long-run growth rate is transient. [Barro \(1990\)](#), in his endogenous growth model where fiscal policy is incorporated endogenously into the production function, noted the permanent and positive effect of government spending on the marginal productivity of physical capital. However, [Barro's \(1990\)](#) model offered little explanation for the relationship between tax structure and economic growth. The two-sector endogenous growth model by [Lucas \(1990\)](#), which considers human capital and time as internal factors, concluded that the growth rate does not change in response to changes in capital tax rates, assuming a constant labor supply ([Babaki and Efati, 2022](#)).

[Gober and Bruns \(1997\)](#) believe that tax structure is related to GDP, saving, and investment. Empirical studies in this area show a heterogeneous relationship between tax structure and growth across different contexts. Differences in the stage of development, political orientation, the presence of an informal economy, inequality, market size, etc., create these heterogeneous effects ([Safi et al., 2017](#)). Nevertheless, the tax structure in a country is very important for growth because taxation can affect the determinants of the growth rate.

Investment, as the engine of economic growth, plays a crucial role in moving the economy out of recession and is another economic variable affected by tax policies and structure. Using fiscal policy to aid investment is possible through various means. This assistance sometimes takes the form of economic subsidies and other times comes in the form of tax exemptions or deductions. Therefore, in general, the regulation of income tax laws should be harmonized with the government's economic policies to encourage the private sector to invest in productive and industrial endeavors. Furthermore, higher taxes should be imposed to deter investment in non-productive areas or activities not aligned with economic development plans, compelling investors to allocate their capital to the production sectors favored by the government.

The effects of fiscal policies and budget balance on macroeconomic performance have always been a point of contention among economists from different schools of thought. Consequently, the economic effects of fiscal policies and budget deficits on private investors depend on the reasons for the budget deficit and the method used to finance it. Given this, the effects of government debt on macroeconomic variables depend on consumer rationality or predictability, the possibility of consumers obtaining loans, and the possibility of intergenerational bequests. Therefore, according to the theoretical foundations, the external or internal effects of fiscal policies and government budget deficits on private investors are variable and are examined under three perspectives ([Maleki et al., 2021](#)):

Different schools of thought have offered competing perspectives on the macroeconomic effects of fiscal policy. Classical economists argue that budget deficits crowd out private investment through higher interest rates, while Keynesians contend that deficit spending can stimulate aggregate demand and investment, particularly under conditions of underutilized resources. The Ricardian equivalence view, in contrast, posits that rational households anticipate future tax liabilities and adjust their savings accordingly, neutralizing the effects of deficit financing (Saleh, 2003; Bahmani-Oskouee, 1999; Izadkhasti & Arabmazar, 2016). However, these debates are not directly related to the specific mechanisms through which capital gains taxation influences economic growth and are therefore only briefly mentioned here.

Taxes are broadly divided into two categories: Direct Taxes and Indirect Taxes, each of which includes several different types of taxes. One type of direct tax is the Capital Gains Tax (CGT). Capital Gains Tax (CGT) is a tax levied on the gain resulting from the transfer (buying and selling) of capital assets, including various types of movable or immovable, tangible or intangible assets. In other words, it is a tax applied to the profit derived from owning a capital asset that changes hands through exchange, transfer, sale, or gift. This type of tax is applied to the total profit amount after deducting the allowable expenses for the disposal of the subject assets.

Capital gains tax is only applied when an asset is sold, not when it is merely held by an investor. An investor might hold stocks whose price increases annually, but the capital gains tax is not applied to those stocks until the investor sells them. The most common capital gains arise from the sale of stocks, bonds, precious metals, and real estate. These types of taxes are established by the government, much like other taxes, and their specific regulations may vary from one jurisdiction to another.

The Capital Gains Tax, like other taxes, has various effects on economic variables. Lower and higher rates of CGT affect the financial status of households and corporations. When the capital gains tax rate is lowered, the after-tax return on equities increases, stock prices rise, household wealth increases, some capital gains are realized, consumption increases, production and returns increase, capital costs rise, household financial assets tend to increase, debt decreases, the debt burden lessens, and the financial condition of the household improves. A reduction in the capital gains tax also leads to an increase in capital gains realization because investors and businesses cash in on long-term capital profits. With the spending or saving of these capital gains, consumer expenditure increases. The rise in asset prices, both in stock values and residential real estate, is reflected in the household's balance sheet as increased wealth and reduced debt due to increased income and realized capital gains (Pinar, 2012).

The revenue generated from higher capital gains tax rates is uncertain because it depends on how the realization of gains reacts to higher tax rates. If the realization of gains decreases significantly, only a small net revenue might be generated. Capital gains realization could even decrease to the extent that revenue

is lost under higher rates. The more a reduction in the capital gains tax increases savers' returns and lowers the cost of capital for businesses, and the more savings and investment respond to such changes, the more likely it is that such a tax cut will stimulate savings and investment and increase Gross National Product (GNP). A reduction in the capital gains tax can affect growth in several ways. A cut in the capital gains tax increases the real after-tax rate of return for savers, which can lower the cost of capital for businesses. When the capital gains tax rate increases, taxpayers may decide to postpone realizing gains or even hold assets until they die and transfer the accumulated gains to their beneficiaries without paying tax. Some researchers believe that a low capital gains tax rate plays a significant role in strengthening economic growth and promoting entrepreneurial incentives (Fasina & Adjei, 2016).

Hungerford (2010) showed that a reduction in the capital gains tax increases saving and investment, thereby boosting long-term economic growth by providing a short-term economic stimulus. It appears that reducing the capital gains tax rate lowers public savings and may have little to no effect on private savings. Consequently, many analysts note that a cut in the capital gains tax is likely to have an overall negative impact on national saving. Furthermore, they observe that lowering the capital gains tax rate is unlikely to have a large effect on the long-run level of output or the path to that long-run level (i.e., economic growth).

According to Pinar (2012), a reduction in the capital gains tax will mainly benefit very high-income taxpayers, who are more likely to save most of the tax reduction. A temporary reduction in the capital gains tax is likely to have a negative impact on short-term economic growth. Higher taxes on capital gains and dividends significantly harm the economy and job growth. Furthermore, a permanent change in tax rates may affect the asset holding period and alter the percentage of accrued gains realized each year.

4. Research Methodology

Since the objective of this study is to investigate the effect of the Capital Gains Tax on economic growth for OECD countries, the present study utilizes panel data spanning the period 2000–2021, extracted from the World Bank database. Panel data can be estimated using many different models.

Given the nature of the data used in this research, which will be explained in more detail in later sections, the current study estimated the model under review by employing the Difference GMM (Generalized Method of Moments) model in Stata software.

As mentioned, this study is structured around panel data, which is a combination of cross-sectional observations (OECD countries) over a specific time period. This data structure offers significant econometric advantages over purely time-series or purely cross-sectional data. These advantages include:

- **Modeling Dynamics:** Panel data allows for the use of dynamic models. These models enable us to incorporate the lagged effects of variables; in other words, we can include the impact of past growth rates on the current growth rate in

the model, which is essential for a true understanding of the economic growth process.

- **Controlling for Unobserved Heterogeneity:** The most important advantage of panel data is its ability to control for unit-specific unobserved heterogeneity. These factors include constant institutional, cultural, political, or geographical characteristics of the countries that affect growth but cannot be directly measured (such as bureaucracy quality or work ethic). By using various methods, including the GMM approach, these factors can be removed from the model, preventing bias arising from omitted variables.
- **Increased Degrees of Freedom:** Combining the cross-sectional and time dimensions results in a larger dataset and more degrees of freedom for estimating the model. This significantly improves the statistical power and efficiency of the estimates, especially in relatively small cross-sections like OECD countries.

Given that the dependent variables in this study suffered from the problem of endogeneity, the OLS (Ordinary Least Squares) method could not be used for estimation. There are several methods available to address this issue, but the GMM method demonstrated the best performance compared to other models in this research. Therefore, the chosen econometric model for this study is the Difference GMM method.

4.1. Introduction of the Econometric Model and Estimation Results

Based on the existing theoretical foundations in this field and considering the dynamic nature of economic growth, the structural equation model for economic growth, which includes a one-period lag of the dependent variable, is specified as follows:

$$Y_t = \alpha_1 + \alpha_2 * FD_t + \alpha_3 * K_t + \alpha_4 * TOP_t + \alpha_5 * CPI_t + \alpha_6 * GCE_t + \alpha_7 * TAX_t + \alpha_7 Y_{t-1} \quad (1)$$

Y_t : Economic Growth Rate

FD_t : Financial Development Growth Rate

K_t : Physical Capital Formation Growth Rate

TOP_t : Trade Openness Growth Rate

CPI_t : Inflation

GCE_t : Government Consumption Expenditure Growth Rate

Y_{t-1} : Economic Growth Rate with a one-period lag

Tax : Growth rate of capital gains tax

4.2. Cross-Sectional Dependence Test

Before estimating the main model, it is necessary to conduct preliminary tests. One of these tests is the Cross-Sectional Dependence Test, which is employed to investigate the presence of correlation across cross-sections. This test

determines whether the model errors are dependent on each other among the cross-sectional units. The hypotheses for this test are as follows:

- **Null Hypothesis (H_0):** No Cross-sectional Dependence (Cross-sectional independence)
- **Alternative Hypothesis (H_1):** Presence of Cross-sectional Dependence

5. Results

To examine the presence of cross-sectional dependence among the studied units, the Pesaran CD test was utilized. The results of the test are presented in Table (1). As observed, the test statistic value is equal to 28.288 and its probability value (p-value) is 0.000, which is statistically significant at the 5 percent level of significance. Based on this result, the null hypothesis of no cross-sectional dependence is rejected. Therefore, it can be concluded that dependence exists among the cross-sectional units of the model.

Table 1: Results of the Pesaran Test for Cross-Sectional Dependence

Test	Test statistic	p -value	Result
Pesaran's CD Test	28.28	0.000	Rejection of the null hypothesis

Source : Research findings

5.1. Results of the Second-Generation Panel Unit Root Test (CIPS)

Given the presence of cross-sectional dependence among the units, the Second Generation Pesaran Panel Unit Root Test (Pesaran CIPS Test) was employed to check for the stationarity of the variables in the panel data. This test is the most appropriate option for panel data exhibiting cross-sectional dependence because it accounts for the possibility of correlation across cross-sectional units in its calculations. The hypotheses for this test are as follows:

- **Null Hypothesis (H_0):** All time series are non-stationary (have a unit root).
- **Alternative Hypothesis (H_1):** Some time series are stationary.

The results of the Second Generation Pesaran Unit Root Test are presented in Table (2). The test statistic values for all variables are less than the critical values at the 1%, 5%, and 10% significance levels. Therefore, the null hypothesis of the presence of a unit root and non-stationarity of the variables is rejected, leading to the conclusion that all variables are stationary. Consequently, the model was estimated using the level data without differencing. Since all research variables are stationary, there is no need for a cointegration test.

Table 2: Results of the Pesaran Unit Root Test (Pesaran CIPS Test)

Variable	CIPS Statistic	Critical Value 1%	Critical Value 5%	Critical Value 10%	Result
Y	-3.404	-2.23	-2.11	-2.04	I(0)
TOP	-4.209	-2.23	-2.11	-2.04	I(0)
GCE	-3.563	-2.23	-2.11	-2.04	I(0)
K	-3.929	-2.23	-2.11	-2.04	I(0)
CPI	-4.121	-2.23	-2.11	-2.04	I(0)
TAX	-4.324	-2.23	-2.11	-2.04	I(0)
FD _t	-4.900	-2.23	-2.11	-2.04	I(0)

Source : Research findings

5.2. Variable Endogeneity Test

To examine the endogeneity or exogeneity of the variables in the economic growth model, two tests, the Durbin Test and the Wu–Hausman Test, were employed. The purpose of these tests is to determine whether the explanatory variables are correlated with the error term in the model.

The results of the Durbin and Wu–Hausman tests, presented in Table (3), indicate that only the Foreign Development (FD) variable has a very high test statistic value (21.71 in the Durbin test and 22.2 in the Wu–Hausman test) and a probability value (p-value) close to zero (0.0000). This signifies the rejection of the null hypothesis that this variable is exogenous. Therefore, FD is endogenous.

In contrast, the other variables have probability values greater than 0.05, which implies the non-rejection of the null hypothesis and suggests that these variables are exogenous.

Table 3: Results of the Endogeneity Test for Economic Growth Model Variables

Instrumented variable	Test Durbin	p - value	Test Wu- Hausman	Amount p	Endogenous result
FD	21.71	0.0000	22.2	0.0000	Endogenous
K	0.003	0.9591	0.003	0.9593	Exogenous
TOP	0.003	0.9559	0.003	0.9561	Exogenous
GCE	0.119	0.7297	0.118	0.7311	Exogenous
CPI	0.010	0.9193	0.010	0.9198	Exogenous
TAX	0.056	0.8123	0.056	0.8133	Exogenous

Source : Research findings

5.3. Addressing Endogeneity: Selection of the Difference GMM Estimation Method

Given the results from the endogeneity tests (Durbin and Wu–Hausman), which indicated that the FD (Foreign Development) variable is endogenous, the use of conventional Ordinary Least Squares (OLS) methods may lead to biased and inconsistent estimates for the coefficients. When one of the explanatory variables is correlated with the error term in the model, the assumption of independence between the error and the regressors is violated, causing classical estimators to lose their efficiency and validity.

To resolve this issue, the Difference GMM (Generalized Method of Moments) estimation method was employed for the economic growth model. The GMM approach, by utilizing the model's moment conditions and incorporating valid instrumental variables, allows for consistent and efficient estimation even in the presence of endogeneity. Furthermore, this method is more robust to heteroskedasticity and cross-sectional dependence and is widely used in macroeconomic and financial literature for dynamic panel models or those containing endogenous variables.

5.4. Estimation Results from the Models

The results of estimating the economic growth model using the Difference GMM method are presented in Table 4. The significance of all variables at the 1% level indicates the efficiency of the Difference GMM estimation method and the high explanatory power of the model in elucidating the economic growth rate of the countries under study.

The results of the model estimation indicate a positive and significant impact of capital gains tax on economic growth, with a coefficient of 0.083 at the 1% significance level. The findings suggest that in these countries, capital gains tax has increased the dynamism of the capital market and channeled funds towards productive activities by reducing speculative incentives and the phenomenon of asset lock-in. Furthermore, given the high efficiency of the administrative-tax system in OECD countries, the revenues generated from this tax base have been effectively allocated to infrastructural and development expenditures, leaving a net positive effect on economic growth. Therefore, it can be concluded that within the institutional framework of the studied countries, capital gains tax has functioned as a tool for enhancing resource allocation efficiency and fostering financial stability.

The positive and statistically significant coefficient of the economic growth rate with its own lag (0.07) indicates a strong and persistent effect of past growth on current growth. This finding reflects the presence of continuity in the economic growth process and the cumulative influence of contributing factors over time.

The trade openness growth rate (TOP), with a coefficient of 0.0324, exerts a positive effect on economic growth, consistent with the high degree of international trade among OECD countries and its role in facilitating technology transfer and enhancing productivity. The negative coefficient of government consumption expenditure growth (GCE), amounting to -0.4419 , suggests that even in advanced economies, an increase in current government spending can constrain private investment—through mechanisms such as the substitution effect—and consequently dampen economic growth.

The growth rate of physical capital formation (K), with a coefficient of 0.1251, confirms the pivotal role of capital accumulation in expanding the productive capacity of OECD countries. The significance of investment in the process of economic growth and development has been emphasized in most growth theories. Given the scarcity of investment resources and the necessity of

their optimal allocation to stimulate economic growth, it is essential to accurately identify a country's comparative advantages in capital allocation. Directing investment toward the most productive and efficient sectors enables the effective use of limited resources and fosters accelerated economic growth (Taghavi & Mohammadi, 2009).

The negative and statistically significant effect of inflation (CPI), with a coefficient of -0.102 , underscores the vulnerability of economic growth to price instability and highlights that even in stable OECD economies, maintaining inflation control is crucial for sustaining long-term growth.

The growth rate of financial development (FD), with a coefficient of 0.0366 , exhibits a positive relationship with economic growth. This indicates that the expansion of financial development—through advanced and efficient financial markets in these countries—facilitates the optimal mobilization of savings and the effective allocation of resources to productive activities.

Various theoretical perspectives have been proposed regarding the relationship between economic growth and financial development. The first posits that financial development leads to economic growth, which is known as the supply-leading theory. The second suggests that economic growth stimulates the demand for financial services and the creation of new financial instruments; hence, economic growth becomes the driving force behind financial development—known as the demand-following theory. The third perspective maintains that there is no significant relationship between financial development and economic growth. The fourth view holds that the relationship is bi-directional and simultaneous, implying that both the supply-leading and demand-following mechanisms operate concurrently (Motameni, 2009).

Based on the empirical findings of this study, conducted across OECD countries during the 2000–2021 period, the first hypothesis—namely, the supply-leading relationship—finds empirical support.

The diagnostic test results presented for the model in Table 5 indicate the validity of the estimates obtained using the Generalized Method of Moments (Difference GMM). The Sargan test, with a statistic of 28.49 and a p-value of 1.0000 , confirms the null hypothesis regarding the validity of the instruments, implying that the selected instrumental variables are all valid and uncorrelated with the error terms. The Hansen J test, with a statistic of 30.96 and a p-value of 0.999 , also confirms the validity of the instruments, while being robust to heteroskedasticity, making it a more reliable test for two-step Difference GMM estimations.

The AR(1) test, with a statistic of -3.573 and a p-value of 0.0004 , confirms the existence of first-order serial correlation, which is expected in dynamic GMM models due to the presence of a lagged dependent variable. The AR(2) test, with a statistic of -1.28 and a p-value of 0.2017 , indicates the absence of second-order serial correlation—an essential condition for the validity of GMM estimates. The Wald Chi² test, with a statistic of 7069.25 and a p-value of 0.000 , confirms that

the model as a whole is highly significant, indicating that the explanatory variables jointly have a strong impact on economic growth.

Taken together, these results demonstrate that the estimated model is statistically sound, and the obtained findings are robust, reliable, and worthy of reference.

Table 4. Estimated Results of the Economic Growth Model

Variable	Coefficient	Standard Error	z-Statistic	p-Value	Significance
Lagged Economic Growth (y_{t-1})	0.07	0.0177	9.79	0.000	Significant
Trade Openness Growth (TOP)	0.0324	0.0059	7.65	0.000	Significant
Government Consumption Expenditure Growth (GCE)	-0.4419	0.0149	-24.09	0.000	Significant
Growth of Physical Capital Formation (K)	0.1251	0.0161	7.77	0.000	Significant
Inflation (CPI)	-0.102	0.0268	-7.97	0.000	Significant
Tax Revenue Growth (TAX)	0.083	0.0065	11.76	0.000	Significant
Financial Development Growth (FD)	0.0366	0.0065	7.58	0.000	Significant
Constant Term	1.7846	0.0902	19.78	0.000	Significant

Source : Research findings

Table 5. Diagnostic Test Results of the Model

Test	Test Statistic	p-Value	Conclusion
Sargan Test	28.48894	1.0000	Instruments are valid
Hansen J Test	30.96	0.999	Instruments are valid
AR(1)	-3.573	0.0004	Significant
AR(2)	-1.28	0.2017	Not significant
Wald Chi ²	7069.25	0.000	Overall model is significant

Source : Research findings

Another approach to assess the robustness of the model is the bounding test for the coefficient of the lagged dependent variable, which is an excellent method for demonstrating the validity of GMM estimates. According to [Bond \(2002\)](#), a valid GMM estimate for the coefficient of the lagged dependent variable should lie between the OLS estimate (which is biased upward) and the fixed effects estimate (which is biased downward). If this condition is satisfied, it can be concluded that the GMM estimator is correctly specified and the results are not subject to severe bias. The results of this test are presented in Table 6.

Table 6: Bounding Test for the Coefficient of the Lagged Dependent Variable

Estimator	Coefficient of L1.y
OLS (Upper Bound)	0.02507
System GMM	0.0986
Fixed Effects (Lower Bound)	0.1578

Source : Research findings

As shown, the System GMM estimate (0.0986) lies between the OLS upper bound (0.02507) and the Fixed Effects lower bound (0.1578). This confirms that the GMM estimator is correctly specified and the results are robust to finite-sample bias.

5.5. Sensitivity Analysis

To further assess the robustness of our empirical findings and to complement the diagnostic tests and bounding test already presented, we conducted a comprehensive sensitivity analysis using five alternative approaches: (i) excluding financial development (gfd) from the model, (ii) excluding inflation (cpi) from the model, (iii) using an alternative proxy for tax revenue (gtax1 instead of gtax), (iv) employing two lags of the dependent variable (lags(2)), and (v) employing three lags of the dependent variable (lags(3)). These additional checks ensure that the main results are not driven by a particular model specification, choice of control variables, or lag structure.

The results of the sensitivity analysis are summarized in Table 7. As shown, the sign, magnitude, and statistical significance of the main coefficients—particularly the capital gains tax (gtax), government consumption expenditure (ggovt2), and physical capital formation (ggdi1)—remain largely stable across all specifications. The capital gains tax coefficient remains positive and statistically significant at the 1% level in all models, confirming the robustness of our main finding regarding the growth-enhancing effect of CGT in OECD countries.

The AR(2) test consistently confirms the absence of second-order serial correlation in all models, and the Sargan test confirms the validity of instruments in all specifications. The only exception is the inflation coefficient (cpi), which becomes insignificant when two or three lags are included. This suggests that the effect of inflation on economic growth is sensitive to the lag structure of the model, which is consistent with the short-run nature of inflation's impact on growth.

Overall, together with the diagnostic tests (Sargan, Hansen, AR(1), AR(2), Wald) and the bounding test (Bond, 2002), the sensitivity analysis confirms that our main results are robust and not driven by a particular specification, estimation method, or set of control variables.

Table 7: Sensitivity Analysis Results

Model	gtax	ggovt2	ggdi1	cpi	gfd	L1.y
Main Model	0.083***	-0.442***	0.133***	0.102***	0.037***	0.070***
Without gfd	0.076***	-0.430***	0.144***	0.116***	-	0.087***
Without cpi	0.082***	-0.428***	0.133***	-	0.036***	0.096***
With gtax1	0.058***	-0.484***	0.163***	0.222***	0.044***	0.088***
With lags(2)	0.072***	-0.460***	0.182***	0.034	0.017**	0.034*
With lags(3)	0.074***	-0.477***	0.186***	0.008	0.019**	0.065***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source : Research findings

6. Conclusion

Taxation constitutes one of the most important instruments for financing government revenues. Among various forms of taxes, the capital gains tax (CGT) stands out as a key component that, under appropriate institutional and economic conditions, can promote economic growth through multiple channels. The objective of this study is to examine the impact of capital gains taxation on economic growth in OECD countries during the period 2000–2021 using the Generalized Method of Moments (GMM).

The empirical findings reveal that capital gains taxation in OECD countries during 2000–2021 has had a positive and statistically significant effect on economic growth. This result suggests that, in the analyzed countries, the capital gains tax has contributed to enhanced capital market dynamics by reducing speculative motives and asset lock-in phenomena, thereby directing financial resources toward productive activities. Moreover, given the high administrative and fiscal efficiency in OECD tax systems, revenues generated from this tax base have been effectively allocated to infrastructure and capital expenditures, yielding a net positive impact on economic growth. Hence, within the institutional framework of these countries, the capital gains tax operates as an instrument for improving resource allocation efficiency and maintaining macro-financial stability.

The positive and significant coefficient of lagged economic growth indicates persistence in the growth process and the cumulative influence of underlying factors. The positive effect of trade openness on economic growth aligns with the high degree of international trade among OECD members, reflecting its critical role in technology transfer and productivity enhancement. Conversely, the negative coefficient of government consumption growth demonstrates that even in advanced economies, rising current government expenditures can constrain private investment through substitution effects, thereby dampening economic growth.

The positive coefficient of physical capital formation growth reaffirms the fundamental role of capital accumulation in expanding OECD countries' productive capacities. The negative and significant coefficient of inflation growth reflects the vulnerability of economic growth to price instability, emphasizing that maintaining low and stable inflation is essential for sustainable growth—even in the relatively stable OECD economies. Furthermore, the positive effect of financial development growth on economic growth suggests that financial development, through efficient and advanced financial markets, facilitates optimal savings mobilization and resource allocation toward productive sectors. This study, therefore, empirically supports the supply-led hypothesis, asserting that financial development precedes and fosters economic growth.

The empirical findings of this study, derived from the experiences of OECD countries, offer several important lessons for developing economies. First, the positive effect of capital gains tax on economic growth is largely contingent upon the presence of strong institutional quality, fiscal transparency, and administrative

capacity. In the absence of such institutional foundations, the introduction of CGT may not yield similar growth-enhancing effects and could even generate adverse outcomes, such as capital flight, tax avoidance, and reduced investment incentives. Therefore, developing economies should prioritize institutional reforms—including strengthening tax administration, enhancing public expenditure efficiency, combating corruption, and improving governance—prior to implementing or expanding CGT. Furthermore, the effectiveness of CGT in promoting growth is closely linked to the quality of public spending. As observed in OECD countries, tax revenues from CGT have been effectively channeled toward productive investments in infrastructure, education, and research and development, suggesting that developing economies should ensure that any additional revenues generated from CGT are allocated to capital expenditures rather than current consumption expenditures.

Second, the findings highlight the importance of a gradual and phased approach to CGT implementation. Developing economies, which often face capacity constraints and weak institutional frameworks, may benefit from starting with moderate tax rates and broadening the tax base gradually, while simultaneously investing in fiscal infrastructure, taxpayer education, and compliance mechanisms. Moreover, the results underscore the need for coordination between fiscal and monetary policies, as the negative effect of inflation on growth suggests that developing countries must maintain price stability to fully benefit from the growth-enhancing effects of CGT. In conclusion, while capital gains taxation can serve as a useful fiscal instrument, its success in developing economies is not automatic—it requires a supportive institutional environment, efficient public expenditure management, and a coherent policy framework that aligns tax policy with broader development objectives.

Author Contributions:

Conceptualization, all authors; methodology, Z.A; validation, T.S.E; formal analysis, all authors; resources, S.E; writing—original draft preparation, Z.A; writing—review and editing, all authors; supervision, T.S.E

All authors have read and agreed to the published version of the manuscript.

Funding

This research received no external funding.

Conflicts of Interest:

The authors declare no conflict of interest.

Data Availability Statement:

The data used in the study were taken from <https://data.worldbank.org/> (accessed on: 25 March 2026).

Acknowledgements

I acknowledge that artificial intelligence tools (chatgpt) were used solely for

English language editing in this article.

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