Fiscal - Economic Perspectives in Promoting Sustainable Development of National Economies

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Abstract
In recent years, sustainable development has become a topic of major interest, aiming not only at economic growth, but also at enhancing social welfare and protecting the environment. The aim of this research is to analyse the role of taxation in promoting sustainable development and to assess how taxes affect the economy, the environment and society. The study is based on data collected from 163 national economies and uses statistical methods to examine the impact of the tax burden on sustainable development in national economies. The results show that tax dynamics significantly influence economic growth, the sustainability of national economies and social welfare. Furthermore, the article highlights the importance of tax policy in achieving sustainable development goals and suggests adopting a balanced approach to taxation that takes into account economic, social and environmental aspects. This research contributes to expanding knowledge in the field of sustainable development of national economies, providing a new perspective on the relationship between sustainable development and the tax burden.

Introduction

The concept of sustainable development has gained a lot of attention from researchers and national and international bodies, due to the pressing need to address global challenges such as climate change, environmental degradation and social inequality. Sustainable and harmonious development generally seeks to balance economic growth with social welfare and environmental protection to ensure a better future for current and future generations. Achieving sustainable development goals requires a holistic approach that takes into account economic, social and environmental factors.

In this context, tax policy has become an important tool for promoting sustainable development, as taxes can influence the economic behaviour of investors, and through tax incentives the government can influence businesses to adopt sustainable practices. Tax revenues can also be used to finance social and environmental programmes, thereby promoting sustainable development objectives. However, the effectiveness of tax policy in promoting sustainable development depends on the tax burden, which can vary according to economic conditions. It is therefore essential to analyse the relationship between taxation, economic growth, sustainability and social welfare in the context of the globalisation of the world's economies.

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In this context, an analysis of the correlation between sustainable development and fiscal pressure is required, which in practice requires an assessment of the role of taxation in the economic, social and environmental development of the world's economies. This research uses a quantitative approach to analyse data collected on financial and non-financial indicators of 163 economies from different economic and social backgrounds, focusing on exploring the impact of taxation on different dimensions of sustainability: economic growth, environmental protection and social welfare. In doing so, it aims to provide a comprehensive perspective on how tax policy can effectively contribute to achieving sustainable development goals in a globalised world.

The contribution of this article to the literature lies in the development and application of an innovative econometric model that integrates both financial and non-financial indicators to assess the interactions between fiscal policies and sustainable development. The results of the study provide valuable insights for policy makers, highlighting how well-designed fiscal policies can balance economic growth with the imperative of social and environmental protection, thus contributing to more sustainable and inclusive development.

Literature Review

The globalisation and internationalisation of the world's economies has highlighted the need to preserve national and international heritage by stimulating sustainable development. To this end, national and international regulators have developed various strategies to encourage business to adopt and implement sustainable development practices. These strategies include providing tax incentives for companies implementing sustainable development practices. At the same time, taxes are an important resource for national economies in ensuring sustainable development, economic growth, social and environmental well-being. The overlapping crises (economic, energy, health, military crises) have further accentuated the redefinition of the sustainable development objectives of the world's economies. In this respect, the European Commission is seeking to replace and identify new ways of measuring economic well-being with a set of social and environmental indicators.

The concept of sustainability was defined in 1987 by the United Nations World Commission on Environment and Development, also known as the Brundtland Commission, as follows: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"(Brundtland Commission, 1987) . The Brundtland Commission report also identified three pillars of sustainability or the triple bottom line of sustainability: economic, social and environmental. Along the way, researchers have sought to redefine the term sustainability (see Table 1), or in other words to adapt it to current economic needs, but the internationally accepted definition is the one given by the Brundtland Commission.

Table 1. Summary of researchers' definitions of sustainability

Author and year of publication	Title of the paper	Definition of the concept
Walker et al. (2004)	"Resilience, adaptability and transformability in social-ecological systems"	Sustainability is the ability of a system to maintain its productivity and diversity over time while continuing to provide ecosystem services at the same or higher level.
Sterman, (2012)	"A behavioral model of the dynamics of human systems for sustainability science"	Sustainability refers to the ability of a system to maintain its health and self-healing capacity over time.
Dresner, (2008)	"The principles of sustainability"	Sustainability means meeting the needs of the present without compromising the

		ability of future generations to meet their own needs, while ensuring social and economic well-being.
Rogers et al. (2010)	"An introduction to sustainable development"	Sustainability is the practice of balancing economic, social and environmental concerns to ensure that resources are used in a socially responsible, environmentally sound and economically viable way.

Source: author's elaboration according to literature

According to the definitions in the table above, we can conclude that the approach to the concept of sustainability in the literature aims at development based on economic, social and environmental well-being.

Fiscal pressure or taxation is a tool to promote sustainable development by providing incentives for certain behaviours or activities that affect the environment and society. For example, governments can impose taxes on activities that generate high levels of greenhouse gas emissions, such as the use of fossil fuels, and use the revenues to support the development of renewable energy sources. This can encourage individuals and businesses to adopt more sustainable practices and reduce their carbon emissions. On the other hand, high tax burdens can also hinder sustainable development by reducing disposable income and limiting the ability of individuals and businesses to invest in sustainable practices or technologies. The correlation between sustainable development and tax burdens is complex and policy makers need to balance the need for revenue generation with sustainable development objectives to create a fair, efficient and sustainable tax system. The literature provides strong evidence on the linkages between tax pressure and sustainable development of national economies. For example, Osei-Assibey et al. (2016) investigated the impact of fiscal incentives on renewable energy in Ghana and found that fiscal incentives are an effective way to promote renewable energy development. Xu et al. (2018) explored tax policies for sustainable development in China and found that tax reform and carbon taxes can help achieve the goal of transitioning to a low-carbon economy. Meanwhile, Rübbelke and Schöb (2018) examined the impact of carbon taxes and support for green technologies on the transition to a low-carbon economy using real options analysis, and found that a combination of the two policies can be more effective in sustainable development. Doda and Gennaioli (2019) argue that tax policies can stimulate green technology innovation. In the same agreement are Baer and Winkler (2019), who explored the relationship between taxation, innovation and the environment and found that tax policies can stimulate green innovation and improve environmental outcomes, results that were also confirmed by Delorme and Nkoumou (2020) who investigated the impact of carbon taxes on sustainable development in Sub-Saharan African economies.

The sustainable development of national and international economies is closely correlated with the quality of environmental regulation, taxes and performance, which is also confirmed by Kurniawati et al. (2020) who argue that environmental regulations and environmental taxes have a positive impact on sustainable development. Dhakal and Kharel (2021) exploring the relationship between energy taxation and sustainable development in South Asian economies concluded that energy taxation can be an effective way to promote sustainable development in the region.

Overall, studies in the literature demonstrate the importance of tax policies such as tax incentives, carbon taxes and environmental taxes in promoting sustainable development and reducing the negative environmental impacts of human activities. It can therefore be said that sustainable development and fiscal pressure are interlinked and require careful analysis and policy interventions to ensure a sustainable future for all.

Research Methodology

For the economic and financial model on sustainable development in relation to fiscal pressure, data were collected from 163 national economies belonging to the following economic and financial development groups: OECD (Organisation for Economic Co-operation and Development); OPEC (Organization of the Petroleum Exporting Countries); WTO (World Trade Organization), over the period 2013-2020. The structure of the database construction contained references to the following topics of interest: fiscal pressure, underground economy, population, GDP, level of FDI inflows and outflows, tax rate, overall country risk, fiscal pressure, political stability, government effectiveness, overall economic freedom score and related indicators.

The indicators are reported by the World Bank and the consolidation of the database was carried out using statistical data processing methods, transformation of qualitative information into quantitative information, parameterisation, regression analysis, frequency distributions, criteria segregation of the sample, statistical tests of homogeneity and representativeness. The results of the database parameterization are presented in Table 2.

Table 2. Results of database parameterization

Indicator/ Setting step	1	2	3	4	5
Fiscal Burden	< 25%	<50%	<75%	>75%	-
Country income per capita	very low level	low level	medium level	high level	-
Level of the shadow economy	<10% of the national economy	<20% of the national economy	<30% of the national economy	<50% of the national economy	>50% of the national economy
Population	< 100000 inhabitants	< 20 million inhabitants	< 45 million inhabitants	< 700 million inhabitants	>700 million inhabitants
PIB	under 300000$	under $200 billion	under $500 billion	under $10 trillion	over $10 trillion
Foreign direct investment inflows	below the negative $350 billion threshold	below the negative $150 billion threshold	under $15 billion	under $150 billion	over $150 billion
Foreign direct investment outflows	below the negative $300 billion threshold	below the negative $100 billion threshold	under $10 billion	under $200 billion	over $200 billion
Tax rate	between 0% and 10%	between 10% and 20%	between 20% and 30%	between 30% and 40%	Over 40%
General country risk	under 25%	under 50%	under 75%	over 75%	
Voice and responsibility	under 25%	under 50%	under 75%	over 75%	
Political stability	under 25%	under 50%	under 75%	over 75%	
Government effectiveness	under 25%	under 50%	under 75%	over 75%	
Quality of regulations	under 25%	under 50%	under 75%	over 75%	
Rule of law	under 25%	under 50%	under 75%	over 75%	

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Level of corruption	under 25%	under 50%	under 75%	over 75%	
Overall economic freedom score	under 25%	under 50%	under 75%	over 75%	
Right to property	under 25%	under 50%	under 75%	over 75%	
Government integrity	under 25%	under 50%	under 75%	over 75%	
Judicial effectiveness	under 25%	under 50%	under 75%	over 75%	
Government expenditure	under 25%	under 50%	under 75%	over 75%	
Fiscal health	under 25%	under 50%	under 75%	over 75%	
Freedom of business	under 25%	under 50%	under 75%	over 75%	
Freedom of work	under 25%	under 50%	under 75%	over 75%	
Monetary freedom	under 25%	under 50%	under 75%	over 75%	
Freedom of trade	under 25%	under 50%	under 75%	over 75%	
Investment freedom	under 25%	under 50%	under 75%	over 75%	
Financial freedom	under 25%	under 50%	under 75%	over 75%	

Source: elaborated by the authors

The prerequisites for the development of the financial economic model are described by the assumptions of the screening, which have been formulated based on the literature:

H1: Sustainable economic development of national economies depends on fiscal policy and financial accounting policy choices in line with internationally standardized practices and policies;

H2: The dynamics of regional economic development are influenced by global crisis phenomena that have an effect on changing elements of fiscal policy at the national level;

H3: Standardisation is a measure of well-being if the distribution of the well-being index at the level of the sample applying standardisation is homogeneous.

To assess sustainable development and design the model, the tax burden was selected as the dependent variable, projecting its evolution in relation to the other regression variables at the level of the overall sample and at the sub-sample level of each economic development group OECD; OPEC; WTO. Thus, the multiple linear regression model takes the form:

$$PF_n = \sum_{i=1}^{27} \alpha_{i_n} \cdot x_{i_3} + \varepsilon_n$$

unde:

PF_n – presiunea fiscală;

n – analysis period;

α_{i_n} - coefficients of regression variables (Table 1) ;

x_{i_n} - regression variables;

ε_n - Residual value.

Results and Discussions

The identification and development of new economic and financial models for analysing sustainable development in relation to various determinants is a continuing concern for both regulators and academia. For example, Paliu-Popa et al. (2017) investigated the impact of sustainable development on fiscal policies and poverty reduction in the European Union, while Gagalyuk and Klochko (2018) explored the link between fiscal poverty dynamics and environmental sustainability. Similarly, Andreea et al. (2019) analysed the impact of fiscal policies on sustainable development and poverty reduction in Romania. Meanwhile, Hossain and Bose (2020) studied the effects of fiscal policies on sustainable development and poverty reduction in Bangladesh. Basically, studies in the literature highlight the crucial role of tax policies in promoting sustainable development and reducing poverty levels. Based on the premise that sustainable development and tax burden dynamics are closely interlinked, we developed the economic-financial model, which analyses the impact of fiscal policies on sustainable development at the national economy and country group levels.

Table 3. Table of regression function coefficients

General model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	2,114	0,549
	Per capita income	0,064	0,063
	Level of shadow economy	0,092	0,060
	Population	0,135	0,067
	GDP	-0,128	0,083
	Foreign direct investment inflows	0,075	0,142
	Foreign direct investment outflows	-0,240	0,158
	Tax rate	-0,192	0,052
	Overall country risk	-0,142	0,101
	Item and Responsibility	0,011	0,055
	Political Stability	0,039	0,053
	Government Effectiveness	0,164	0,082
	Quality of regulation	-0,014	0,077
	Rule of law	-0,117	0,088
	Level of corruption	-0,116	0,073
	Overall eonomic freedom score	0,074	0,137
	Rights and property	0,079	0,086
	Government integrity	0,028	0,093
	Judicial effectiveness	-0,123	0,072
	Government spending	0,161	0,059
	Fiscal Health	0,069	0,046
	Business Freedom	-0,037	0,080
	Labour Freedom	0,032	0,058
	Monetary Freedom	0,024	0,080
	Freedom of Trade	0,254	0,075
	Investment Freedom	-0,025	0,064
	Financial Freedom	0,226	0,081

Source: developed by the author with SPSS

By the Pearson regression correlation test, the statistical significance level of the overall model is 72.3% while the adjusted R2 coefficient shows that at the overall sample level the significance level decreases to 43.2% which demonstrates hypothesis 1 of the research: Sustainable economic development of national economies depends on fiscal policy and financial accounting policy choices in line with internationally standardized practices and policies. At the sub-sample level applying economic and financial standardisation rules, there is an increase in the level of statistical

significance (Research hypothesis 3: Standardisation is a measure of welfare if and only if the distribution of the welfare index at the sample level applying standardisation is homogeneous.), in contrast, for World Trade Organization (WTO) member states that do not apply standardization, the correlation coefficients are below those determined for the overall sample. This finding suggests that the lack of application of standardisation in economic policy has a lesser or less consistent impact on sustainable economic development compared to entities that adopt these standards.

In this regard, studies in the literature provide strong evidence regarding the relationship between fiscal policies and sustainable development, helping to validate and support the results obtained in our study. For example, Lopez and Figueroa (2019) reached similar conclusions, highlighting the importance of fiscal policies in promoting sustainable development. According to them, pro-growth fiscal policies, characterized by low direct and high indirect taxes, have an impact on the composition of resources, leading to a tendency to over-invest in physical capital and under-invest in human capital, such as education and health. Thus, this imbalance in investment can have long-term consequences for the economy, including undermining the capacity for innovation and productivity growth by underestimating the importance of human capital in a modern economy. Education and health, for example, are key factors in the development of robust human capital, which can lead to innovation, sustainable economic growth and reduced social disparities.

Thus, the results of this study are consistent with findings from other research, reinforcing the idea that fiscal policy plays a crucial role in steering sustainable economic development.

Table 4. Summary of the general model and models by groups of countries

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
						R Square Change	F Change	df1	df2	Sig. F Change		
General	,723[a]		0,523	0,432	0,450	0,523	5,735	26	136	0,000	2,186	
OECD	,978[a]	0,257	0,956	0,812	0,312	0,956	6,651	26	8	0,005	2,039	1,922
OPEC	1,000[a]	.	1,000	1,000[a]	0	1,000		10	0		0,311	1,150
WTO	,705[a]	0,430	0,497	0,343	0,419	0,497	3,232	26	85	0,000	2,258	1,588
a. Predictors: (Constant), FinancialFreedom, FiscalHealth, PopulationTaxAssessment, LabourFreedom, FIOUT, VoiceResponsibility, TradeFreedom, MonetaryFreedom, BusinessFreedom, UndergroundEconomy, GovernmentExpenditure, PoliticalStability3, JudicialEffectiveness, InvestmentFreedom, FDIIN, RegulatoryQuality, GDP, CountryGiven, GeneralScore, ControlCorruption, LawOwnership, GovernmentIntegrity, GovernmentEffectiveness, RuleOfLaw, GeneralRisk												
b. Dependent Variable: TaxPressure												

Source: developed by the author with SPSS

ANOVA test demonstrates model validation by rejecting the null hypothesis and validating the alternative hypothesis: Sig <0.005 (selected error significance threshold):

Table 5. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
General	Regression	30,141	26	1,159	5,735	,000[b]
	Residual	27,491	136	0,202		
	Total	57,632	162			
OCDE	Regression	16,822	26	0,647	6,651	,005[c]
	Residual	0,778	8	0,097		
	Total	17,600	34			
OPEC	Regression	2,182	10	0,218		.[c]
	Residual	0,000	0			
	Total	2,182	10			
WTO	Regression	14,754	26	0,567	3,232	,000[c]
	Residual	14,925	85	0,176		
	Total	29,679	111			
a. Predictors: (Constant), FinancialFreedom, FiscalHealth, PopulationTaxAssessment, LabourFreedom, FIOUT, VoiceResponsibility, TradeFreedom, MonetaryFreedom, BusinessFreedom, UndergroundEconomy, GovernmentExpenditure, PoliticalStability3, JudicialEffectiveness, InvestmentFreedom, FDIIN, RegulatoryQuality, GDP, CountryGiven, GeneralScore, ControlCorruption,						

LawOwnership, GovernmentIntegrity, GovernmentEffectiveness, RuleOfLaw, GeneralRisk
b. Dependent Variable: TaxPressure

Source: developed by the author with SPSS

The dynamics of the Pearson correlation coefficients (see Table 6) provide an opportunity to evaluate the dynamics of the economic-financial model and confirm hypothesis 2 of the research "The dynamics of regional economic development is influenced by global crisis phenomena that have an effect on the modification of fiscal policy elements at the national level".

Table 6. Pearson correlation table for the financial economic model

INDICATOR	GENERAL	OCDE	OPEC	WTO
Income per capita	0,207	0,478	0,689	0,390
Level of underground economy	0,538	0,503	-0,142	0,352
Population	0,241	0,256	0,805	0,301
GDP	0,034	-0,033	0,810	0,345
Foreign direct investment inflows	0,183	0,373	0,494	0,308
Foreign direct investment outflows	0,053	-0,020	0,494	0,326
Tax rate	0,069	0,108	0,049	-0,008
Overall country risk	0,127	0,300	0,413	0,355
Item and Responsibility	0,145	0,552	0,187	0,234
Political Stability	0,169	0,241	0,144	0,271
Government Effectiveness	0,209	0,577	0,252	0,396
Quality of regulation	0,294	0,645	-0,027	0,497
Rule of law	0,131	0,458	0,192	0,304
Level of corruption	0,089	0,370	0,181	0,253
Overall economic freedom score	0,528	0,778	0,339	0,668
Rights and property	0,156	0,335	0,541	0,408
Government integrity	0,072	0,002	0,498	0,359
Judicial effectiveness	0,088	0,153	0,399	0,305
Government spending	0,708	1,000	-0,115	0,478
Fiscal Health	0,667	0,956	0,049	0,513
Business Freedom	0,256	0,454	0,561	0,395
Labour Freedom	0,393	0,534	0,360	0,385
Monetary Freedom	0,337	0,746	0,139	0,383
Freedom of Trade	0,514	0,748	0,139	0,683
Investment Freedom	0,316	0,499	0,350	0,541
Financial Freedom	0,435	0,563	0,522	0,716

Source: developed by the author with SPSS

By linking the results of the statistical analysis of the mean distributions of the variables with the specified indicators and parameterisation steps, we can get a clearer picture of how the various dimensions of economic development are measured and interlinked. Focusing on the "Tax Pressure" indicator, analysed across different country groups, gives us an insight into how this factor plays a significant role in different national and international contexts. For example, we note that within the overall sample of 163 countries, the average distribution of tax burden shows a value suggesting a high incidence of tax burden, exceeding the 75% threshold. This suggests that a large proportion of these countries face challenges in maintaining a balanced tax burden, as balance is essential to sustain economic growth without inhibiting competitiveness.

On the other hand, the OECD sample shows an average reflecting a moderate tax burden, indicating the possibility of a more favourable environment for growth and investment due to a tax regime that is considered less restrictive. In contrast, OPEC countries show an average again

reflecting a high tax burden, possibly as a result of dependence on natural resource revenues, which requires careful management of tax policy to maximise revenues without discouraging other economic sectors. In the WTO sample, we find that most member countries face similar challenges in managing the balance between fiscal needs and stimulating economic activity, indicating fiscal pressure above the mentioned threshold. This observation underlines the complexity and interdependence of factors influencing economic development at the global level.

The detailed analysis of the tax burden across different groups of countries highlights the importance of a thorough understanding of the specific context in which fiscal policies are applied and their impact on sustainable economic development. Tax pressure, as a key indicator, affects the ability of governments to finance essential public services and at the same time influences the business environment and investment attractiveness. Prudent and balanced management of fiscal policy is therefore essential to support economic growth while ensuring fiscal sustainability and improving social welfare in a way that reflects the specificities and needs of each sample or group of countries analysed. The research results highlight the importance of comparative analysis and careful interpretation of data in understanding the complex dynamics of sustainable economic development at the global level. Variations between different samples and associated statistical indicators reflect the diversity of tax approaches and their impact on economic sustainability, highlighting the need for tailored strategies to optimise economic development in different national and regional contexts.

Conclusions

This research provides significant insight into the correlation between sustainable development of the world's economies and fiscal pressure. The research results indicate that the sustainable economic development of national economies relies on fiscal and financial-accounting policy choices that align with standard global practices and policies. Furthermore, the study identifies that the dynamics of regional economic development are influenced by global crisis phenomena, influencing elements of fiscal policy at the national level. At the same time, we conclude that OECD member countries have an average distribution of the tax burden indicator below the 75% threshold level, while the OPEC and WTO samples have an average distribution above the threshold level, which highlights that the use of standardization is a measure of welfare and increases the level of statistical significance. The ANOVA test validated the alternative hypothesis, rejecting the null hypothesis, and the Pearson correlation test has a lower level of significance at the overall sample level but increases at the sub-sample level .

In conclusion, this study provides vital insights into the impact of tax policies and regulations on the sustainable development of the world's economies. The findings have significant implications for policy makers and business.

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