

Tax Reforms, Social Inequality and Automatic Stabilizers

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Abstract: Numerous studies address the issue of tax reforms and their relationship to social inequality. However, the results are ambiguous or contradictory. Therefore, this article aims to bring more light to this issue by analyzing theoretically and practically, econometrically, the link between the subjects analyzed: fiscal reforms, automatic stabilization and social inequality in EU with 28 countries. In addition, the idea of tax reform has been simplified by analyzing the evolution of personal income tax rates in EU-28 countries, with only those with a higher progressivity to surprise the idea of automatic stabilization. However, the outcomes for selected countries from EU-28, although modest in terms of linkage intensity, confirm the starting hypothesis: increasing progressivity may support reducing social inequality and boosting economic growth.

Keywords: EU-28; fiscal reforms; smoothing the economic cycle; stabilization instruments

JEL Classification: E63; H11; P11

1. Introduction

When politicians and the media launch the idea of fiscal reform, the population, companies and even public institutions are suspicious about their possible positive effects. Part of the tax reforms are aimed at better balancing the public budget and implicitly reducing budget deficits. Noteworthy, lower government deficits reduce interest rates in the face of the possibility of not materializing the risk that the government may incur tax increases and taxes in the future, so it can provide predictability. Moreover, in the case of countries with major fiscal imbalances, in order to reduce the risk premium for interest rates in the economy and to restore liquidity and the solvency of the public budget, tax adjustments and reforms are considered indispensable. They are perceived as fiscal stabilization reforms in order to mitigate the macroeconomic instability generated by rising inflation, increased interest rates and undesirable effects of trade imbalances as well as the accumulation of public debt. For example, in the 1980s, the implementation of fiscal reforms that

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drastically reduced government spending in Ireland (1987-1989) and Denmark (1984-1986) led to a reduction in private consumption to a lesser extent than expected. Thus, businessmen have also acted to boost the economy by rebuilding and upgrading production units, featuring this kind of tax reform as a government commitment to lower taxes and duties in the future. Other successful episodes of fiscal reforms aimed at consolidating public finances (e.g. Belgium - 1987, Sweden - 1987, Norway - 1986, United States - 1977, Australia - 1987, 1988, New Zealand - 1992, Japan - 1987) also indicates the need that the amplitude of the fiscal consolidation reform to be high (over 4% of GDP) (McDermott & Wescott, 1997). Another example, in the Netherlands, a cut in spending (of 15% of GDP) over the period 1982-2000 has created a fiscal space for reduced taxes and has stimulated job creation and private sector investment, avoiding an unfavourable effect on income inequality (IMF, 2015).

At the same time, revenue-side reforms have lower chances of success (except for emerging and low-income countries, according to Akitoby, 2015) than those targeting the expenditure side (e.g. a reduction in budget expenditures - namely of the primary structural deficit - up to about 4% of GDP over two years can lead to a 50% success of the consolidation reform) (McDermott & Wescott, 1997).

Concerning compromise or trade-off between equity/equality and efficiency, we can see that things are not quite straightforward when switching from direct taxation to indirect taxation (which aims at promoting economic growth and reducing distortions); process associated usually with the increase of social inequality and the reduction of fiscal system progressivity.

Therefore, the article aims to address the issue of tax reforms through its relationship with social inequality. In the context of reforms, it will be of interest to promote non-discretionary character reforms, so that will outline the use of automatic stabilizers.

2. Description of the Problem in the Context of Literature Overview

Tax reforms can pose serious shocks to the economy, especially if social equity is aggravated by the reduction in social transfers, of which the initial purpose was to boost labour participation. For example, tax reforms in the 1980s are thought to have created a wider dispersion of wages and greater social inequality. Between 1980 and 2000, Caminada, Goudswaard and Wang (2012) noted that income inequality increased, being only partly offset by complementary measures to increase redistribution. At the same time, Ball and others (2013) note that inequalities are often generated by fiscal consolidation measures, especially when they are based on spending.

Reducing inequality can include providing well-targeted budget transfers, health services and education in less-favoured areas (areas with poor industrial networks,

rural areas, etc.), increased spending on education and health (Martinez-Vazquez, Moreno-Dodson & Vulovic, 2012), provision of technical training for better labour mobility from non-productive activities to higher value-added activities (Akitoby, 2015).

However, Acosta-Ormaechea, Komatsuzaki and Correa-Caro (2017) state that, analyzing nine tax reform episodes in seven high-income countries and using the synthetic control method for the 1975-2010 period, less developed countries following fiscal reforms experienced higher levels of economic growth, and reforms have not generated major changes in aggregate societal inequalities. Moreover, in cases where the reform periods coincided with the increase in income inequality, there was insufficient evidence to indicate a causal link between a more uneven distribution of income and tax reforms. Because of the multitude of studies often with contradictory results, the present study aims to address the issue of fiscal reforms and adjustments (implicitly non-discretionary) from the perspective of connection with social inequality.

3. Methodology and Data Sources

In the context in which tax reforms target the progressive taxation, the latter is associated with the reduction of social inequalities (when it does not generate greater tax evasion and inappropriate use of incomes). This is all the more relevant if we consider that taxation is used to support government spending on social security and social transfers. At the same time, it is interesting to analyze the extent to which a single tax rate (now on named flat tax rate) leads or not to increase social inequality, acting, according to de facto theory, sometimes as a regressive tax. In addition, it is of interest to analyze the extent to which income inequality responds to fluctuations in the economic cycle, knowing that aggregate demand and implicitly economic growth is higher when income inequality is reduced and vice versa. To quantify the income inequality, we used the Gini coefficient of equalized disposable income - EU-SILC survey according to Eurostat methodology and data.

From the theoretical point of view, in order to better connect tax reforms with the automatic stabilization mechanism, but also with the issue of social equity, simplifying Dinga and al. results (2011, p. 119, fig. 36), we can say that automatic stabilizers aim in particular at a progressive tax regime, that is to say, greater social equity achieved through taxation. At the same time, the fiscal reforms with an automatic nature in addition to progressivity imply a regime of stimulating the economy and a good capillarity, both of the bases and of the rates of taxation. Therefore, the article will look at the extent to which these elements are present at the level of EU countries (e.g. progressivity or single quota/flat tax rate, number of thresholds or brackets number, Total general government revenue % GDP, Total general government expenditure % GDP, Top statutory personal income tax rates

(including surcharges) and Top statutory corporate income tax rates, including surcharges) and the extent to which they can connect to the issue of social inequality (the Gini coefficient of equalized disposable income - EU-SILC survey). Econometric processing, using panel data, will use Eurostat statistics as well as statistics from the European Commission and other international bodies.

4. Results Obtained

According to economic theory, fiscal reforms can affect economic growth through four main transmission channels: labour supply, total factor productivity, investment in human and physical capital (IMF, 2015).

With regard to labour supply, the tax system (e.g. by reducing labour tax rates) and social transfers can substantially influence decisions on labour market participation and working time, especially for specific groups such as workers elderly and women (OECD, 2011) and may stimulate or inhibit long-term economic growth. At the same time, through reforms with provisions on tax cuts, the youth unemployment issue can be interfered, an indicator that is extremely high in Europe after the crisis (Banerji et al., 2014).

In this regard, a possible link between tax reforms, which are transmitted via the labour supply channel and automated stabilizers, is unemployment aid. It, designed in an effective tax reform, can protect the income of people struck by structural or transitional unemployment. However, when they return to work, it can work as a tax on labour income, creating obstacles to work. Unemployment benefits play an essential role in advanced economies through programs designed to protect people from loss of income due to unemployment. However, these programs, if not well designed, can adversely affect incentives and employment outcomes (Meyer, 2002; Abbring et al., 2005; OECD, 2006).

In advanced economies, calling for social benefits, with clear eligibility criteria and conditional on participation in active labour market integration programs are effective tools designed in the framework of tax and labour market reforms. For example, in the Netherlands, before the mid-1980s, almost one fifth of the working-age population benefited from unemployment and disability benefits, increasing access to labour market participation (Watson et al., 1999), and in Germany widespread reform to improve job search efficiency and encourage labour demand led to an increase in the labour force participation rate at 74% from 66% over the period 2000-2013, as well as a reduction in the unemployment rate at 5.2% in 2013 (OECD, 2014).

It should be noted that there are major differences between advanced economies and emerging economies in the sense that if in advanced economies the labour tax is

negatively correlated with employment; in the developing economies the link is less obvious, on the background of narrower base revenue and a more limited social protection network (IMF, 2014).

From the perspective of total factor productivity, tax reforms can target direct and indirect measures to increase R & D expenditure in the public sector and provide tax incentives to encourage private R & D spending. Also, public spending on building and strengthening the transport infrastructure and offering high quality public services can have an immediate effect on the productivity of the private sector and lead to technological progress. At the same time, public investment in a high-performance education system can help improve the absorption of innovative technologies at the level of companies and increase the capacity to integrate young people into the labour market. Thus, public investment can help increase overall factor productivity and ensure long-term economic growth.

At the same time, tax reforms regarding capital taxes can influence the investment or savings decisions. At company level, corporate tax may reduce return on investment projects. In this respect, in the model proposed by Devereux and Love (1994) it is argued that the cuts in capital tax rates encourage investment and support long-term economic growth.

If we refer to the human capital, recognized in literature (Barro, 2001) as a driver of long-term economic growth through participation in production activities and the promotion of technical progress, tax reforms can contribute by investing in education and health to the accumulation of human capital. For example, some studies (e.g., Pecorino, 1993) show that reductions in income tax rates can contribute to increasing human capital stock and contribute to long-term economic growth.

Therefore, the role of fiscal policies is to achieve as much as possible economic priorities: ensuring the best possible tax compliance, stimulating employment, facilitating the investment phenomenon, and reducing social inequalities. The link between these priorities is extremely tight.

Fairness and fair competition in the business environment is related to the elimination to the greatest possible extent of discrepancies, irregularities and abuses, while encouraging better tax compliance. Fiscal compliance allows for the provision of public funds to reduce social inequalities and to ensure the growth of jobs, as well as the funding of social conversion and mobility programs. Reducing social inequalities and increasing the number of jobs and possibly the quality of the workforce can provide a healthier basis for business support and boosting investment. At the same time, supporting investment can help increase employment and reduce social inequalities and poverty. In this sense, through the proposed objectives, tax reforms and related reforms can conjugate as appropriate as possible to these economic and social priorities and can increase the effectiveness of their achievement.

Thus, in the context of analyzing the link between automatic stabilizers and tax reforms, according to EY (2018), a series of elements of recent tax reforms aim at greater transparency, a better harmonization of differences between countries' tax systems and an and an increasingly internationally combined policy in order to combat tax evasion, but also to harmonize tax systems.

With regard to personal income tax in OECD countries, the “Tax Policy Reforms 2018: OECD and Selected Partner Economies” (OECD, 2018) highlights the trend towards implementing reforms aimed at reducing labour income tax rates, possibly leading to the reduction of tax revenues on short-term to reduce.

In order to improve labour market participation, these reforms aim at increasing the progressiveness of personal income tax rate at the same time as shaping the trend of increasing personal income tax revenues and extending tax exemptions for certain financial incomes. Thus, in 2018, according to this report, the most significant reforms in the EU were implemented by Latvia, which introduced a progressive regime on personal income tax and France, which introduced a new single tax on personal capital gains. Compared with previous years, in 2018, in OECD countries, the reduction in corporate tax rates has accelerated, amid a reduction in the rates of some countries that traditionally had high rates of corporate income tax, generally at the same time as measures to extend corporate tax bases. Although they have increased investment incentives, measures on R & D tax incentives have remained limited (OECD, 2018).

If we strictly refer to Europe, in the European Commission's 2018 report “Taxation Trends in the European Union, Data for the EU Member States, Iceland and Norway” at the beginning of 2018, the maximum personal income tax rate was 39% for EU28, with no significant change since 2013, while the average personal income tax rate rose slightly in 2018 for the euro area to 42.6%. As the OECD report mentioned above, Latvia and France have increased their maximum rates of personal income tax, while countries such as Portugal, Romania and Finland have lowered their rates. Thus, asymmetries in personal income tax rates remain considerable in the EU28, ranging from a minimum of 10% in Bulgaria to over 55% in Denmark and Sweden.

Turning to a qualitative and quantitative approach, if we analyze at the level of the countries of the European Union the fulfilment of criteria that reflect on the one hand the idea of fiscal reform and on the other hand the automatic stabilization (which implies progressive and capillary rate) we can see (see Table 1) that, out of the many EU28 countries, only 13 of them meet the required criteria at the same time.

Thus, although tax adjustments occurred in all member countries, for the idea of tax reform we only considered the change in the higher personal income tax rate for the considered analysis period (2007-2017) according to the European Commission's 2018 report, “Taxation Trends in the European Union, Data for the EU Member States, Iceland and Norway”. Thus, we excluded from the calculation countries such

as Germany, Malta, the Netherlands, Austria and Romania.

Table 1. The classification of the countries of the European Union with 28 countries according to the criteria: reform, progressivity and capillarity according to the higher rate of the personal income tax rate for the period 2007-2017

Country Code	Reforms considered taking into account the change in the top rate of personal income tax for the period 2007-2017, Yes (1) / No (0)	Progressive tax rates (1) or flat tax rate (0)	Capillarity	
			Yes (1) / No (0). We considered "Yes" if there are ≥ 3 thresholds/brackets	Number of brackets
BE	1	1	1	5
BG	1	0	0	0
CZ	1	0	0	0
DK	1	1	0	2
DE	0	1	1	4
EE	1	0	0	0
IE	1	1	0	2
EL	1	1	1	4
ES	1	1	1	5
FR	1	1	1	5
HR	1	1	1	3
IT	1	1	1	5
CY	1	1	1	5
LV	1	0	0	0
LT	1	0	0	0
LU	1	1	1	8
HU	1	0	0	0
MT	0	1	1	5
NL	0	1	1	4
AT	0	1	1	7
PL	1	1	0	2
PT	1	1	1	5
RO	0	0	0	0
SL	1	1	1	5
SK	1	1	0	2
FI	1	1	1	5
SE	1	1	1	4
UK	1	1	1	4

Source: European Commission (2018) and Eurostat data. Author's conception and processing

Notes: BE - Belgium, BG - Bulgaria, CZ - Czech Republic, DK - Denmark, DE - Germany, EE - Estonia, IE - Ireland, EL - Greece, ES - Spain, FR - France, CY - Cyprus, LV - Latvia, LT - Lithuania, LU - Luxembourg, HU - Hungary, MT - Malta, NL - Netherlands, AT - Austria, PL - Slovakia, FI - Finland, SE - Sweden, UK - United Kingdom.

At the same time, to take into account only those reforms based on the tax system progressivity, for personal income tax, we exclude all countries with a flat tax rate: Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania and Hungary. Romania,

during the analysis period, had a flat tax rate but was already excluded from the previous criterion of the fiscal reform, considering in this study that the fiscal adjustments were of a small scale and did not fit into the concept of reform.

In order to better capture the part of automatic stabilization, we also excluded those countries that, although having progressive rates of personal tax, have a small number of tax thresholds or brackets (under 3). By this criterion we have given up Denmark, Ireland, Poland and Slovakia. Thus, the remaining 13 countries simultaneously meet the three criteria for reform, progressivity and capillarity of personal income tax rates. At the same time, for the period 2007-2017, if we also take into account the change or not of the higher corporate income tax, according to the same report of the European Commission, we have to exclude from the analysis countries such as Belgium, Bulgaria, Ireland, Malta, Austria, Poland and Romania. Except, Belgium, these are already found in the exclusions made to the criterion on the higher rate of personal income tax. Therefore, we will only analyze 12 countries to see the connectivity between income inequality, the concept of tax reform and automatic stabilization. These countries are Greece, Spain, France, Croatia, Italy, Cyprus, Luxembourg, Portugal, Slovenia, Finland, Sweden and the United Kingdom.

Thus, for the period 2007-2017, using a correlation matrix between the economic growth rate, the Gini coefficient, used in the literature to capture social inequality, the number of personal income tax thresholds, Top statutory personal income tax rates and respectively Top statutory corporate income tax rates and Total general government revenue % GDP and Total general government expenditures % GDP for Greece, Spain, France, Croatia, Italy, Cyprus, Luxembourg, Portugal, Slovenia, Finland, Sweden and the UK, we can draw a series of empirically relevant conclusions on the link between the gradual increase in personal income tax rates, social inequality and economic growth. We recall that according to Eurostat, the Gini coefficient is defined as the relationship of cumulative shares of the population (arranged according to the level of equalized disposable income) to the cumulative share of the equalized total disposable income received by them. Theoretically, the relationship between the elements analyzed should be in the idea that increasing progressiveness can lead to a decrease in social inequality and an increase in the rate of economic growth. The correlation matrix cannot identify the causality, but only the existence of the link by revealing its strength and the meaning/sign of the link (see Table 2).

Table 2. Correlation matrix between real GDP growth rate, Gini coefficient, personal income tax rate brackets number, top statutory personal income tax rates, top statutory corporate income tax rates as well as total general government revenues and expenditures (%GDP) for Greece, Spain, France , Croatia, Italy, Cyprus, Luxembourg, Portugal, Slovenia, Finland, Sweden and the United Kingdom for 2007-2017

	<i>RGDPGR</i> <i>R (%)</i>	<i>Gini</i> <i>coef</i>	<i>BN</i>	<i>TSPITR</i> <i>(%)</i>	<i>TSCITR</i> <i>(%)</i>	<i>TGGR</i> <i>(%GDP)</i>	<i>TGGE</i> <i>(%GDP)</i>
RGDPGR (%)	1						
Gini coef	-0.202	1					
BN	0.158	0.146	1				
TSPITR (%)	-0.004	0.140	-0.315	1			
TSCITR (%)	-0.036	0.237	0.238	0.345	1		
TGGR (%GDP)	0.035	0.488	-0.005	0.562	0.317	1	
TGGE (%GDP)	-0.362	0.179	-0.248	0.521	0.365	0.731	1

Source: European Commission (2018) and Eurostat data. Author's conception and processing

Notes: RGDPGR (%) - real GDP growth rate, Gini coef - Gini coefficient of equalized disposable income - EU-SILC survey, BN - number of personal income tax rate brackets, TSPITR – top statutory personal income tax rate, TSCITR – top statutory corporate income tax rate (% of GDP), TGGE (% GDP) - total general government revenue (% of GDP), TGGE (% GDP) – total general government expenditures (% of GDP).

It can be seen that although there are negative correlations at least in the first columns of the table, the bonds are generally extremely weak without requiring a development of the analysis by regression equations. A higher Gini coefficient signifies the increase in social inequality, so its negative connection with the economic growth rate supports the theory and the starting hypothesis. The same can be said of the fact that the number of thresholds is positively correlated, albeit extremely weak, with the economic growth rate. It is also supportive of the theory that higher income and profit tax rates (TSPITR and TSCITR) are negatively correlated with economic growth, suggesting that reforms should always aim at adjusting higher rates of taxation. At the same time, the significance of the negative correlation between the higher rates of personal income tax and profit versus the Gini coefficient might suggest that their growth would reduce social inequalities, considering that the tax systems analyzed are progressive. Equally, it should be noted that both general government expenditure and revenue are negatively correlated with the Gini coefficient, suggesting that it contributes significantly to reducing social inequalities. This is more evident in the case of revenue, suggesting that the increase in the progressivity of tax rates contributes to reducing social inequalities.

5. Conclusion

In the context of contemporary economic imbalances, reforms in general and tax reforms in particular play an important role in bringing the world's economies to normal. Often viewed as having a negative social impact, tax reforms can be designed to increase the progressiveness of tax rates. Increasing the progressivity of tax rates is considered both theoretically and in practice as having a beneficial impact on reducing social inequalities. Thus, this study addresses the link between tax reforms, social inequalities and automatic stabilizers.

Using data from the European Commission (European Commission, 2018) and Eurostat for the EU28 for the period 2007-2017 and based on a series of hypotheses and simplifications, we selected data for 12 countries (Greece, Spain, France, Croatia, Italy, Cyprus, Luxembourg, Portugal, Slovenia, Finland, Sweden and the United Kingdom) with a high rate of progressive tax. With 132 statistical observations using panel data, the results can be considered as credible as possible. In theory, the increase in progressivity should be correlated negatively with social inequality and positive with the rate of economic growth. The matrix of correlation between selected elements, though extremely weak, reflects and confirms these correlations. Therefore, the results of the study confirm once again the theoretical statements that the increase in the progressive rate of personal income tax rates contributes to the reduction of social inequalities.

6. Future Directions to Be Approached

Where there is sufficient information, the same type of analysis could be extended to the tax base. In addition, since countries such as Germany, Malta, Belgium, the Netherlands and Austria have highly progressive personal income tax rates with a high degree of granularity or capillarity, other authors resuming the analysis on other periods and, after other systematization, may have reintroduce them in their attention. At the same time, to see if the flat tax rate has a regressive effect, which could theoretically increase social inequalities, it would be interesting to analyze all the EU-28 countries that have a flat tax rates: Bulgaria, Romania, Czech Republic, Estonia, Latvia, Lithuania and Hungary. Equally, countries such as Denmark, Ireland, Slovakia and Poland, considered in this study as having personal income tax rates with low capillary, could be reintroduced into an analysis that better captures the valences of reduced versus high capillarity.

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