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Tax System Sustainability Evaluation: A Model for EU Countries

The global economic crisis seems to be over. Still, Europe is seeking its New Growth Path. A set of strategies has been proposed to formulate policy initiatives that address overall economic stagnation. The 'Europe 2020' strategy identifies fundamental objectives divided into three thematic dimensions. The selection of goals is based on the intent to deliver smart, sustainable and inclusive growth. Accordingly, the strategy focuses on employment, research and development, education and environment to create the conditions for taking a New Growth Path in Europe.

Contrary to monetary policy, fiscal and taxation policies are less harmonised at the national level in Europe. Regarding the general agreement for the Europe 2020 strategy across the EU, there is the question of how the relatively heterogeneous national fiscal and taxation policies can contribute to reaching the consensual Europe 2020 objectives and moving towards the New Growth Path. Changes in the structure of national tax systems, setting individual tax rates and related tax tools and mechanisms are sensitive topics among the electorate and governments are well aware of this. The potential to stabilise the economy or activate the growth path as well as EU policy coordination efforts and electorate sentiment are taken into account when setting national tax policy strategies. The consensual effort of the EU countries to find a New Growth Path strategy implies that the sustainable tax is preferred to policy activism. This is also in line with current trends in literature. Supporting sustainable socio-economic development that is smart, inclusive and environmentally sustainable determines the proposed design of the tax system.

This study deals with the question of how the internally heterogeneous tax systems of the EU countries can contribute to reaching Europe 2020 sustainability objectives. It proposes a general concept of tax system sustainability and its evaluation. In particular, we evaluate the extent to which the current tax systems of individual EU countries contribute to sustainable development in pre-defined pillars. To measure how the tax system of a particular country contributes to sustainable development in the areas of economy, society, environment and institutions, the tax sustainability index has been generated.[1] The modular construction of the model allows for the formulation of recommendations for tax policy in respective dimensions and areas. We present the results of the Czech tax system sustainability evaluation to illustrate the model's applicability and ability to draw policy implications.

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The concept of tax system sustainability

There is no consensus in literature on what tax system sustainability actually is and how to measure or evaluate it. From a simple macroeconomic perspective, we can define the sustainability of the tax system in relation to a balanced state budget. The connection of taxation to GDP growth is also frequently discussed in the literature. To our knowledge, classical tax theory and connected tax policy literature address only limited aspects of sustainability. The sustainability literature rarely takes taxes into account as tools for influencing the needs of a generation regarding the above defined economic, social, environmental and institutional pillars. Current taxation literature deals with terms such as 'fair taxation'[2] or 'equality in taxation'[3] but do not adequately address all four sustainability dimensions.[4]

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1 The index is described and validated in J. Janová, D. Hampel, D. Nerudová: Design and validation of a tax sustainability index, in: European Journal of Operational Research, 2019, forthcoming, available at https://doi.org/10.1016/j.ejor.2019.05.003.

2 See U. Beck: What is globalization?, 2015, John Wiley & Sons. Also see E. Ooghe, A. Peichl: Fair and efficient taxation under partial control, in: The Economic Journal, Vol. 125, No. 589, 2015, pp. 2024-2051.

3 C. Grown, I. Valodia (eds.): Taxation and Gender Equity: A comparative analysis of direct and indirect taxes in developing and developed countries, New York 2010, Routledge.

4 In this context, Stahel can be considered as the most complex study, connecting the sustainable taxation with the concept of circular economy. See W.R. Stahel: Policy for material efficiency – sustainable taxation as a departure from the throwaway society, in: Philosophical Transactions of the Royal Society of London: Mathematical, Physical and Engineering Sciences, Vol. 371, No. 1986, 2013. One of the latest studies trying to capture the multidimensional approach towards tax sustainability is by U. Spanenberg, A. Mumford, S. Daly: Navigating taxation towards sustainability, Fairtax Working Paper Series No. 16, 2018.

The basic accepted definition of sustainable development is given by the Brundtland commission as meeting the needs of the present without compromising the ability of future generations to meet their own needs.[5] We consider this relation between the needs of today's generation and the needs of future generations to be the key to sustainability. We follow the multi-dimensional approach to socio-economic sustainability and distinguish among the needs of society in the four dimensions that make up the basic pillars in our model. Thus, we focus on the sustainable development of the economy, society, environment and institutions.

As the tax policy is seen as an important component of the macroeconomic and microeconomic policy mix in individual EU countries, we examine the effect of taxes on the economy and society. We define the sustainable tax system as a tax system that contributes to the sustainability of a country's basic pillars in order to meet the needs of the present generation without putting limitations on future ones. Alternatively, we can also see it as a system of taxes, tax-related legislative measures and fiscal tools that do not distort the sustainable behaviour of economic agents in the sense of Brundtland's definition.

Our evaluation model follows the current debate in the 'beyond GDP' literature. Similar to the EU New Growth Path strategy, our study takes into account the critique of the GDP being a central measure of economic performance and indicator of welfare. With regard to welfare and living standards, other achievement measurements should be used to evaluate a country's ability to meet people's needs. Limited resources should be allocated and used in production in order to satisfy the maximum of needs and the achievements of today's generations should be sustainable. We try to capture the complexity of the needs of today´s generation. Since the influence of taxation upon sustainable development is examined from the perspective of each pillar, the respective pillars are further divided into particular policy areas.

The link between the tax system and the pillars of sustainable development

The evaluation model is based on the assumption that the tax system influences sustainable development in the four pillars. In fact, we expect the tax system to have a direct impact on the economic, social and environmental pillars. The institutional pillar has a special role in the model.

In accordance with the main goals of the Europe 2020 strategy, the economic pillar covers growth potential and stresses aspects of the EU New Growth Path strategy. It deals with such issues as smart growth potential, the knowledge-driven economy, sustainable investment activity, fiscal sustainability and indebtedness. Correspondingly, the social pillar focuses on employment, social cohesion, poverty and population growth; the environmental pillar covers issues of climate change, green innovation, emissions, renewable energy, energy conservation and waste prevention. Finally, whereas the tax system influencing the economic, social and environmental dimensions is assumed in the model, the relation between the tax system and the institutions is the opposite. The institutional pillar comprises factors that determine the functioning of the tax system and hence its impact on the three aforementioned pillars. The effectiveness of tax collection, compliance costs of taxation, the extent of the administrative burden and tax morale incentives together make up the components of the institutional pillar.

The institutional background interacts with the three other pillars as well as with the tax system sustainability. In our model, we focus on formal as well as informal institutions, which are directly linked to taxes and the tax policy in general. Analysing the impact of the tax system on the economy, society and the environment, one might question the importance of the structure and content of the tax system if it does not work effectively. The design of the tax system seems to be unimportant in terms of the selection of concrete tax rates, tax tools or other fiscal instruments with regards to its impact on the government's ability to effectively collect taxes, low tax morale or high compliance costs. In that case, the impact of the tax system and especially its contribution to sustainable development in the economy, society and environment would be questionable. Therefore, the institutional pillar creates the framework for the functioning of the taxation system and institutional sustainability can be considered as a crucial precondition of the sustainability of the taxation system.

The tax system sustainability evaluation model

'Beyond GDP' literature suggests alternative aggregate indicators including assessing and evaluating the economic performance as well as the welfare and well-being of nations.[6] In our analysis, the economic, social, environ-

5 See G.H. Brundtland et al.: Our Common Future: World Commission on Environment and Development. The Brundtland-Report, Oxford 1987, Oxford University Press.

6 See K. Aiginger, S. Bärenthaler-Sieber, J. Vogel: Competitiveness under new perspectives, WWWforEurope Working Paper No. 44, Vienna 2013, WWWforEurope – WelfareWealthWork. Also see J.E. Stiglitz, A. Sen, J.P. Fitoussi: Report by the Commission on the Measurement of Economic Performance and Social Progress, Paris 2010, Commission on the Measurement of Economic Performance and Social Progress.

mental and institutional dimensions are used to assess the state of achievements of the European society and its sustainability.

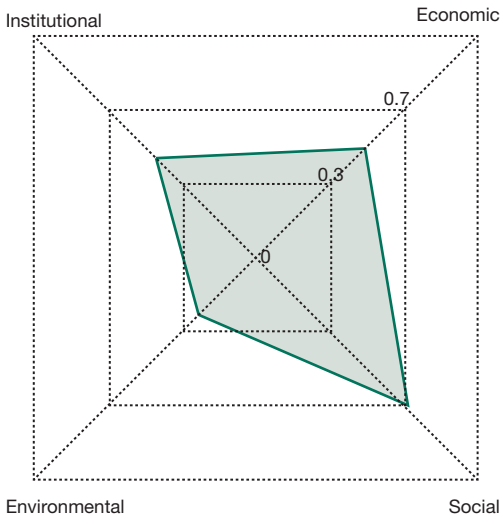
Stressing the policy impact of our tax system sustainability evaluation model, each pillar is further divided into policy areas that reflect current generation's priorities to be achieved to maximise satisfaction without limiting future generations. These priorities may change over generations, therefore we recommend modifying the policy areas, related tax tools and questions over time. The main tax policy tools either contribute to or refrain from distorting sustainable development within each policy area and each pillar respectively. Therefore, in order to evaluate how the taxation system contributes to sustainability within each defined policy area and pillar, it is necessary to identify the tax tools which can be used to achieve the goals mentioned above. The existence of such tools in the taxation system and the extent to which these tools are applied by EU Member States is verified through formulating questions connected with the tax system tool.

In summary, the evaluation concept is structured into pillars – socioeconomic dimensions influenced by the tax policy, policy areas within each dimension and the evaluation questions. The answers to the evaluation questions are valued in a pre-defined scale. The scale refers to the estimated strength of the contribution of a particular tax tool as a component of an individual country's tax system and how it supports the sustainability of each policy area in respective pillars. To reflect the importance of each policy area, we estimate weighted composite indices in a pre-defined scale describing the impact of the tax system on the sustainability in each pillar for each country.

This allows us to obtain numerical inputs for the tax sustainability evaluation model. The model makes it possible to assess the sustainability of the tax system of the analysed country from the overall as well as from each dimension's perspective. In addition, the model indicates policy areas which are either deficient or distort sustainability in respective dimensions. Policy implications are drawn from the model accordingly.

Then, the tax system sustainability indices are estimated and graphical sustainability polygons for each country are constructed. We use the sustainability diamonds as visualisation tools in order to interpret better the resultant index from a policy impact perspective. The polygon's asymmetries point to policy areas in each pillar that are not doing enough to contribute to sustainable development. Finally, the asymmetry of polygons consisting of individual pillars assesses the extent of the tax system contribution to sustainable development in all four pillars

Figure 1
Evaluation of the tax system sustainability for the Czech Republic



Note: Depicted are dimensionless indices defined on interval (0, 1). Value in interval (0, 0.3) means unsustainability of particular areas, (0.3, 0.7) sustainability and (0.7, 1) strong sustainability.

Source: For details see J. Janová, D. Hampel, D. Nerudová: Design and validation of a tax sustainability index, in: European Journal of Operational Research, 2019, forthcoming, available at https://doi.org/10.1016/j.ejor.2019.05.003.

in total. We applied this model to all EU countries in our research.

Figure 1 illustrates that the Czech Republic's tax system is considered sustainable as a whole as it sufficiently supports three out of the four dimensions and fulfills other technical conditions as well. The results also show a deficient contribution to environmental sustainability; in contrast, the tax system strongly contributes to the sustainability in the social dimension. The model enables us to identify particular policy areas and respective tax tools and measures that are either not applied or do not contribute to environmental sustainability. The Czech tax system does not contribute to sustainability in the areas of climate change, green innovations, renewable energy and recycling. In those policy areas, the appropriate tax tools and measures supporting sustainability and sustainable behaviour of economic agents are mostly not applied or not implemented at all.

Since the model can be applied universally, it can indicate dimensions and tax policy areas in EU countries that do not contribute to socio-economic sustainability with regards to the Europe 2020 strategy in general. From that point of view, tax policy implications might be drawn from the model.

Conclusions

We introduce a general concept of tax system sustainability. The sustainability concept is the theoretical point of departure for the proposal of the tax system sustainability evaluation model. The model represents a modular diagnostic tool that indicates the extent to which the current tax system of a EU Member State contributes to sustainability from an economic, social, environmental and institutional point of view. The structure of the model indicates the policy areas within particular socio-economic dimensions that contribute deficiently to tax sustainability. Moreover, the model can detect a particular tax policy tool, which is totally missing (for example, taxation of excessive emissions) or a tool which is applied insufficiently. The model can also provide tax system setting simulations and development in time. The results of the tax system sustainability evaluation in the Czech Republic are presented to illustrate the model's practical applicability. The model has pointed out the Czech tax system's deficient contribution to environmental sustainability.