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Potential Revenues, Summary Evaluation from a Sustainability Perspective, and Implementation Aspects

Margit Schratzenstaller, Alexander Krenek

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Abstract

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Tax-based Own Resources to Finance the EU Budget: Potential Revenues, Summary Evaluation from a Sustainability Perspective, and Implementation Aspects

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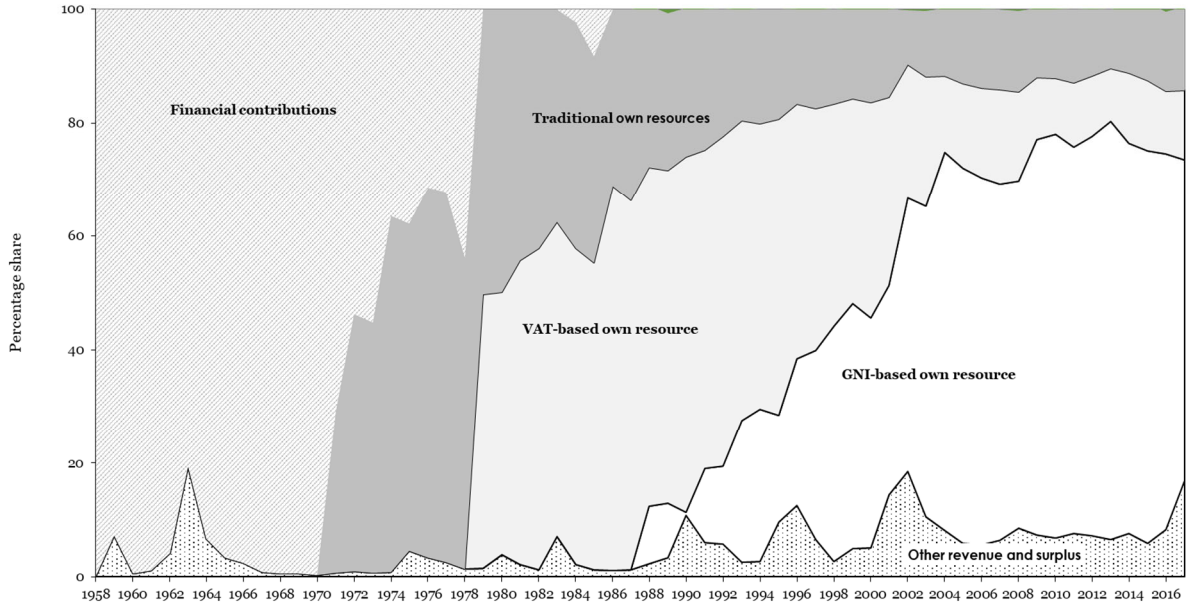
Keywords: EU system of own resources, tax-based own resources, EU budget, sustainability-oriented taxation

JEL classification code: F55, H23, H87, Q58

1 Introduction and background[1])

In the recent debate and the negotiations about the European Union's next Medium-term Financial Framework (MFF) for the period 2021 to 2027, the system of own resources financing EU expenditures plays a more prominent role compared to the previous EU budgets. The current EU budget is primarily financed by contributions from Member States (VAT- and GNI-based own resources), while "true" own resources2 have continuously lost in importance (see figure 1). In 2017, VAT-based own resources accounted for 12.2 per cent of overall EU revenues and GNI-based own resources even for 56.6 per cent, while traditional own resources contributed a rather small share of 14.7 per cent only.

Figure 1: Composition of EU revenues in a long-term perspective, 1958 to 2017



Source: European Commission, own calculations.

The system of own resources and its long-term development have been the object of a long-standing debate within academia as well as the various European institutions.[3] On the one hand, the current own resource system has various advantages: It provides steady, predictable and reliable revenues balancing the EU budget[4]; it results (at least before the application of the various rebates and correction mechanisms) in a fair national distribution of the financial

[1] We thank Andrea Sutrich for careful research assistance and Danuše Nerudová, Ulrike Spangenberg, Stefan Lehner and Guntram Wolff for valuable suggestions. The research leading to these results has received funding from the European Union's Horizon 2020 research and innovation programme 2014-2020, grant agreement No. FairTax 649439.

[2] HLGOR (2016) discusses in more detail which revenue sources qualify as "own" resources.

[3] See for a detailed overview Schratzenstaller et al. (2016).

[4] The EU is prohibited to incur debt (Art. 311 TFEU).

burden; and it follows the subsidiarity principle, as Member States can decide autonomously about the sources financing national contributions (Schratzenstaller et al. 2017). On the other hand, a number of critical points have been raised by many observers: the system's complexity and intransparency; the missing direct link between EU revenues and citizens which is weakening democratic accountability; the very limited financial autonomy the system of own resources grants to the EU; and the fact that it furthers a net position thinking at Member State level (Schratzenstaller et al. 2016 and the literature cited therein).

One central objection brought forward in particular by the European Commission as well as by the inter-institutional High Level Group on Own Resources (HLGOR) established to explore future-proof options for the system of own resources (HLGOR 2016) is that the own resources system does not make any positive contribution to the various EU strategies and policies implemented to cope with the manifold long-term challenges confronting the EU (Schratzenstaller et al. 2017). These challenges range from recent and imminent enlargement rounds and persisting regional disparities over demographic change, growing income and wealth inequality and risk of poverty, (refugee) migration, (youth) unemployment, climate change and energy transition to technological change. They all have in common that uncoordinated unilateral action on Member State level will lead to insufficient results, while addressing these challenges via common initiatives, inter alia using the EU budget, would create European added value.[5]

It is against this background that the European Commission as well as the HLGOR, but also the European Parliament have (repeatedly) called for the introduction of tax-based own resources to partially substitute national contributions to the EU budget. Our specific contribution to this debate consists in the exploration of sustainability-oriented options for tax-based own resources which are able to support sustainable growth and development in the EU.

The paper is structured as follows. Chapter 2 briefly presents the concept of sustainability-oriented taxation in the context of own resources for the EU developed by Schratzenstaller et al. (2017). Based on this concept, we develop sustainability-oriented evaluation criteria to assess the suitability of specific candidates for tax-based own resources. We then briefly present various options for tax-based own resources and estimations of their revenue potential (chapter 3). In chapter 4 we undertake a summary evaluation of these options based on the evaluation criteria elaborated in chapter 2. Chapter 5 is dedicated to implementation aspects. In particular, we briefly present and discuss potential models to implement tax-based own resources in the EU given the existing legal framework in the EU. Chapter 6 concludes.

[5] See for the concept of European added value and the relevant areas HLGOR (2016) and Weiss et al. (2017).

2 Sustainability-oriented taxation in the context of EU own resources and sustainability-oriented evaluation criteria

Our work starts out from two central flaws which characterize Member States' tax systems and the EU system of own resources. Firstly, based on a comprehensive concept of sustainability-oriented taxation encompassing economic, social, environmental, and institutional/cultural sustainability developed by Schratzenstaller et al. (2017) (see figure 2), Member States' tax systems show substantial "sustainability gaps". The high tax burden on labour is harmful for growth and employment. At the same time, the long-term trend of cutting taxes on high incomes and wealth observable all over the EU has reduced tax systems' effectiveness with regard to mitigating income and wealth inequality. Moreover, it is increasingly difficult to effectively tax internationally mobile private wealth and corporate profits. There could also be a stronger role for environmental taxes. These sustainability gaps have been pointed out more recently also by the European Commission in its yearly assessments of Member States' tax policies.[6]

Secondly, the EU system of own resources financing EU expenditure does not contribute at all to central EU strategies and initiatives to support sustainable growth and development in the EU: for example, the Sustainable Development Goals and the 2030 Agenda for Sustainable Development, the Paris Climate Agreement, the EU Strategy for a Climate Neutral Europe by 2050, the EU Action Plan for a Circular Economy, or the EU Action Plan for Fair and Sustainable Taxation.

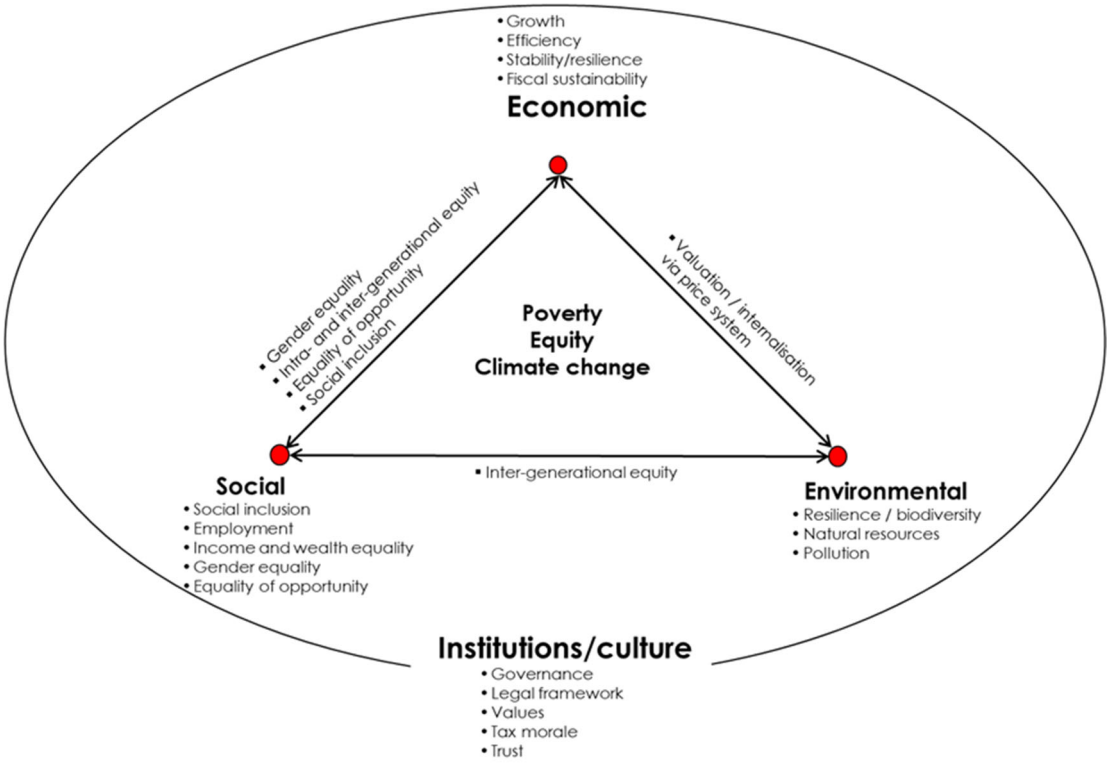
Our work simultaneously addresses these two flaws of revenue systems at Member State and EU level by suggesting to introduce sustainability-oriented tax-based own resources as an additional pillar of a reformed EU system of own resources. Substituting a part of national contributions by sustainability-oriented tax-based own resources would create space for Member States to cut more harmful taxes, particularly the high taxes on labour, and would thus allow a fiscally neutral, sustainability-enhancing tax shift at Member State level and in the EU as a whole, hereby also contributing to central EU policies.[7] In a similar vein, tax-based own resources offer themselves as a preferable option – compared to an increase of national contributions – to meet additional revenue needs to cover the Brexit gap[8] or to expand the EU budget volume as suggested by various actors (e.g. the European Parliament and the European Commission) in the current negotiations on the next MFF. Figure 2 illustrates the four dimensions of sustainabity-oriented taxation mentioned above.

[6] See for the most recent edition of the European Commission's yearly publication „Tax Policies in the European Union" European Commission (2018B); see also European Commission (2018A).

[7] Also the HLGOR (2016) recommends to discuss the introduction of new own resources not as additional, but as alternative revenue sources replacing GNI-based contributions, thus maintaining budget neutrality.

[8] For details regarding the Brexit gap see Schratzenstaller (2019).

Figure 2: Dimensions and objectives of a sustainability-oriented tax system



Source: Schratzenstaller et al. (2017).

Based on these four sustainability dimensions, we derive sustainability-oriented evaluation criteria for a first summary assessment of our selected options for sustainability-oriented tax-based own resources. Most of these criteria have been suggested and elaborated in earlier studies on tax-based own resources for the EU.[9] Our specific contribution is to link these criteria to our concept of sustainability-oriented taxation and to thus focus the evaluation of candidates for tax-based own resources on their contribution to sustainable growth and development. Figure 3 presents the evaluation criteria derived for the four dimensions of sustainability and brief explanations. The economic, the social and the environmental dimension and the related evaluation criteria are rather general and self-explanatory, and they can be applied to other areas of taxation without any further modifications.

[9] For a review of relevant work suggesting criteria to evaluate options for (tax-based) own resources for the EU and first deliberations on sustainability-oriented evaluation criteria for tax-based own resources see Schratzenstaller et al. (2016). See also Schratzenstaller (2013) for a more fundamental discussion of the rationale and evaluation criteria for international taxes.

Figure 3: Sustainability-oriented evaluation criteria for tax-based own resources

Dimension of sustainability	Evaluation criterion	Explanation
Economic sustainability	growth friendliness	The tax does not (significantly) harm economic growth
	Sufficiency/ fiscal sustainability	The revenues from the tax will be stable in the longer run
Social sustainability/ inclusiveness	Personal distribution of income and wealth	The tax mitigates the unequal personal distribution of income or wealth
Environmental sustainability	Environmental sustainability	The tax mitigates environmental problems
Institutional/ cultural sustainability	Revenue stability	The revenues from the tax are not subjected to short-term fluctuations
	Non-attributability	The revenues from the tax cannot be attributed to individual Member States
	Fair national distribution	The tax burden is not distributed too unevenly across Member States
	Fiscal integration	The tax contributes to fiscal integration in the EU
	Non-enforceability	The tax cannot be enforced at Member State level
	Non-interference	The tax does not interfere with Member States' tax systems
	Visibility	The tax is visible for a significant share of taxpayers/ citizens

Source: own representation.

The criteria referring to institutional/cultural sustainability are more specifically focusing on own resources for the EU budget and therefore shall be presented in more detail here.

A first criterion for institutional sustainability **is short-term stability of revenues**, which is important as the EU is not allowed to incur deficits. Therefore, a tax-based own resource should provide a continuous and reliable stream of revenues without major fluctuations.

The criterion of fair **national distribution of the tax burden** requires that the burden from the tax is not distributed too unevenly across Member States. Following the principle of national ability to pay will improve political acceptability of tax-based own resources for Member States.

The criterion of **non-enforceability** implies that the tax cannot be enforced effectively at Member State level, either due to tax competition and tax avoidance when the taxed subject or activity is mobile across borders, or because the taxed activity is associated with a cross-border externality so that Member States would set tax rates at suboptimal levels. Introducing the tax at EU level on a harmonized basis will improve enforceability.

Related is the criterion of **fiscal integration**, which means that the tax supports the European integration process, e.g. by contributing to horizontal tax harmonization.

The criterion of **non-interference** with Member States' national tax systems is fulfilled if the tax is additional, i.e. that it does not exist already in any Member State. Thus vertical tax competition is avoided, as well as conflicts regarding the distribution of revenues between Member States and the EU level.

Visibility of the tax is given if a significant share of taxpayers/citizens pays and thus feels the tax, thus strengthening transparency and accountability at the EU level.

Non-attributability of revenues to individual Member States means that revenues of a tax-based own resource cannot be attributed directly to individual Member States, as the bases or activities subjected to the tax contain a cross-border element, for example cross-border externalities. In this case assigning the revenues to a supra-national budget stands to reason.

Of course, these criteria differ with regard to their scope. It can also be expected that no candidate will fully meet all evaluation criteria. However, evaluating options for tax-based own resources based on these criteria helps to identify potential synergies and trade-offs between the different sustainability dimensions and evaluation criteria. Moreover it must be stressed that a negative score of a certain candidate with regard to one or more criteria does not necessarily mean that this candidate is definitely not suited as own resource. Firstly, for most criteria, negative effects can be mitigated by accompanying measures. Secondly, a basket solution, i.e. the introduction of several tax-based own resources as suggested by the HLGOR (2016) and the European Commission (2018C und 2018D) in its proposal from May 2018, would ensure that potential negative effects of individual tax-based own resources would be counterbalanced at least to a certain extent.

Finally, it must be pointed out that although, in general, the weight given to each of these criteria depends on political priorities, the criterion of non-attributability is of particular relevance in the context of own resources to finance the EU budget. In principle, the main argument for a complete or partial assignment of tax revenues to a supra-national budget – instead of national budgets – is that revenues cannot be clearly attributed to individual Member States because of cross-border externalities. Otherwise, taxes that cannot be enforced effectively on Member State level could just be coordinated among Member States by harmonizing tax bases and/ or tax rates or by introducing minimum tax rates, with revenues going into national budgets.

3 Options for sustainability-oriented tax-based own resources and revenue potential

In a first step we estimated the revenue potential of our seven selected options for tax-based own resources. These options were chosen because we expect them to significantly contribute to central EU goals and strategies, particularly with regard to sustainable growth and development. Four of the seven options – a carbon based flight ticket tax, a border carbon adjustment for the EU Emission Trading System (ETS), a surcharge on national fuel tax rates, and a nuclear power tax – can be classified as "green" tax-based own resources and have been selected particularly for their expected positive contribution to environmental sustainability. We thus, similarly to the HLGOR (2016), put a specific focus on such taxes that can be expected to have a positive environmental impact and would constitute an important element of "a coherent approach to environmental fiscal reform." (HLGOR 2016: 41) The HLGOR (2016) in its final report analysed carbon taxes in general as well as revenues from auctioning emission certificates within the EU ETS and from taxing motor fuels.

To use revenues from taxing financial transactions and corporate profits as own resources for the EU has been proposed repeatedly by the European Commission[10] as well as by the HLGOR (2016) as they are obviously based on bases and activities containing a cross-border element, which is why we also include these two options. Finally, we analyse the potential of an EU-wide net wealth tax based on Piketty's simple concept for a European net wealth tax (Piketty 2014), suggesting, in contrast to Piketty, to use revenues as own resource for the EU budget.

As figure 4 shows, the revenue potential of our candidates varies widely – ranging from € 4 billion to € 156 billion per year. To illustrate their potential contribution to financing the EU budget, we relate potential revenues to overall EU revenues for 2017 (€ 139 billion). A financial transaction tax based on conservative assumptions as well as a carbon-based flight ticket tax, a nuclear power tax and a share of 1% of a CCCTB would not be able to provide a substantial contribution to EU revenues. However, a financial transaction tax estimated under less conservative assumptions, a net wealth tax, a border carbon adjustment for the EU ETS, and a surcharge on national fuel tax rates could substitute significant shares of current own resources.

It should be noted here that a relatively limited revenue potential does not necessarily preclude a certain tax as tax-based own resource. Introduced within a basket of several tax-based own resources, the revenues also from such minor taxes would add up to substantial amounts.

[10] See European Commission (2018C) and the references cited therein.

Figure 4: Options for tax-based own resources and potential tax revenues

Study	potential tax-based own resource	Refe-rence year	Member States involved	details	potential re-venues, bil-lion €	potential reve-nues, % of EU rev-enues 2017
Krenek/ Schratzen-staller (2017A)	carbon-based flight ticket tax	2014	EU28	carbon price 25 € to 35 € per tonne CO_2 emis-sions	4 to 5	2.9% to 3.6
Krenek/ Sommer/ Schratzenstaller (2018)	border carbon adjust-ment for the EU Emis-sion Trading System	2021	EU28	carbon price 54 € per tonne car-bon emissions embodied in imports	27 to 84	19.4% to 60.4
Nerudová/ Dobran-schi/ Solilová/ Schratzenstaller (2018)	surcharge on national fuel tax	2014	EU28	0.03 € to 0.20 € per liter fuel	13 to 86	9.4 to 61.9
Dellinger/ Schrat-zenstaller (2018)	nuclear power tax	2014	EU-14 (Member States produc-ing nuclear power)	€ 0.01 per kWh electricity pro-duced and tax on windfall profits for a car-bon price of €25 per tonne carbon emis-sions	8 to 19	5.8 to 13.7
Krenek/ Schratzen-staller (2017B)	net wealth tax	2014	EU20 (Member States for which HFCS data are available)	1% on house-hold net wealth above € 1 mil-lion; 1.5% on household net wealth above € 1.5 million	156	112.2
Nerudová/ Schrat-zenstaller/ Solilová (2017)	financial transaction tax	2016	EU10 (“Coalition of the Willing”)	0.1% on equity; 0.01% on deri-vatives	4 to 33	2.9 to 23.7
Nerudová/ Solilová (2019)	CCCTB-based own re-source	2014	EU28	1% of CCCTB	8	5.8

Source: slightly modified version of Schratzenstaller (2019).

4 Summary evaluation of options for sustainability-oriented tax-based own resources

This chapter undertakes a summary evaluation of our seven selected options for tax-based own resources for the EU budget. For most criteria the assessment undertaken here, which is presented in an overview in figure 5, is not corroborated by own empirical evidence, but rests on existing empirical evidence which was reviewed in the individual analyses for the selected candidates for own resources.[11] Overall, the scope of our work only allows for the summary evaluation presented here. In some cases the potential effects with regard to specific evaluation criteria are unclear or unknown and require further in-depth analyses. Nonetheless, our summary evaluation should provide some guidance for policy-makers considering the implementation of tax-based own resources. The following sections briefly summarize the results of the summary evaluation based on the sustainability-oriented evaluation criteria presented in chapter 2.

4.1 Economic sustainability

4.1.1 Growth-friendliness

From a perspective of economic sustainability, the growth effects of taxes are one aspect of interest. Generally, our whole concept to substitute current national contributions by certain tax-based own resources aims at increasing growth-friendliness of Member States' tax systems: Revenues from the suggested tax-based own resources are intended to replace a share of Member States' national contributions to the EU budget, which would create space for Member States to cut other taxes more harmful for growth and employment, particularly the high taxes on labour. Recycling revenues based on this reform concept for the EU system of own resources, therefore, puts into perspective potential negative growth effects some of our candidates can be expected to have.

Of our tax candidates, only the financial transaction tax will have an – albeit very small, as the impact assessment of the European Commission (2011) shows – unambiguously negative impact on growth. Taxes on fuel and flight tickets may have counteracting effects, so that their overall impact on growth is difficult to determine: [12]

[11] See for the references figure 5.

[12] See Abdullah and Morley (2014), who conclude that environmental taxes in general and transport taxes in particular do not have a substantial impact on economic performance, and the literature cited therein.

Figure 5: Summary evaluation of candidates for sustainability-oriented tax-based own resources

Potential tax-based own resource	**Carbon-based flight ticket tax**	**Border carbon adjustment**	**Surcharge on national fuel tax**	**Net wealth tax**	**Financial trans-action tax**	**CCCTB**	**Nuclear power tax**
Growth friendliness	?	+	?	?	-	+	?
Sufficiency	?	?	?	+	+	?	-
personal distribution of income and wealth	+	-	0	+	+	0	0
environmental sustainability	+	+	+	0	0	0	+
non-attributability	+	+	+	-	+	-	+
short-term revenue stability	+	+	+	+	-	-	+
fair national distribution	+	-	-	-	-	+	+
non-enforceability	+	+	+	+	+	+	-
fiscal integration	+	+	(+)	+	+	+	+
non-interference	(+)	+	+	(+)	(+)	+	-
Visibility	+	-	+	+	-	-	-

Source: Own presentation. + … positive contribution; – … negative contribution; – 0 … neutral; ? … unclear/not known.

On the one hand, they may impede growth by decreasing consumption and production, whereby the size of these negative effects depends on the substitution elasticity with regard to alternative modes of transportation. On the other hand, taxing transport fuels and aviation may further eco-innovation and thus increase the long-term growth potential.[13] Also the growth effects of taxing nuclear power cannot be predicted seriously. There is little hard empirical evidence on the growth impact of a net wealth tax: while it has been identified as a relatively growth-friendly tax in various empirical studies,[14] it bears the risk to dampen savings and investment and thus economic growth (Clements et al. 2015).

A CCCTB can be expected to further economic growth by reducing the administrative burden für firms and fiscal authorities, and to the extent Member States will agree on certain elements (for example, the tax allowance for research expenditures) of the common tax base. Also a border carbon adjustment for the ETS may be favourable for economic growth in the EU, as it removes competitive disadvantages of products produced within the EU and thus subjected to carbon pricing via the ETS towards imported products.

4.1.2 Sufficiency of revenues

Almost all tax candidates regarded can be expected to yield stable revenues at least in the medium run. A tax on nuclear power is the only obvious exception: considering the phase-out of nuclear power foreseen in a number of nuclear power producing Member States, the revenue potential will decrease in the future. Also the future revenue potential of a CCCTB-based own resource may be uncertain: Up to now, the ongoing long-term trend of decreasing corporate income tax rates has not led to a fall in corporate tax revenues. It is questionable, however, whether the factors up to now stabilizing corporate tax revenues will be effective in the future also (Nicodème et al. 2018).

There is also some uncertainty in the long-run with regard to the sufficiency of the carbon-based revenue sources, i.e. the flight ticket tax, the surcharge on national fuel taxes and the border carbon adjustment for the ETS. On the one hand, considering the relatively low elasticities of demand[15] and the growth projections for transport and the aviation sector, taxes on transport fuel and flight tickets have a considerable long-run revenue potential. Also a border carbon adjustment for the ETS will yield increasing revenues in the future, as our model simulations show (Krenek, Sommer and Schratzenstaller 2018). If on the other hand the international and national goals and commitments with regard to a long-term decarbonization are

[13] See OECD (2010) and Popp (2019) and the literature cited therein.

[14] See Krenek and Schratzenstaller (2017B) and the literature cited therein.

[15] See Nerudová et al. (2018) and Krenek and Schratzenstaller (2017A) and the literature cited therein.

successfully implemented, these carbon-based revenue sources will become obsolete in the long run.

The ever-increasing volume of financial transactions and its broad base should ensure a significant long-term revenue potential of a financial transaction tax. Given the ongoing accumulation of net wealth, which can be expected to continue in the future, a net wealth tax should be able to generate substantial revenues in the long run.

4.2 Social sustainability

With regard to tax systems, social sustainability primarily refers to the impact of taxes on the distribution of income and wealth. Most clear-cut are the distributional effects of a net wealth tax, which would mitigate the unequal wealth distribution. A net wealth tax in the design proposed by Krenek and Schratzenstaller (2017B) would affect less than 5% of households on average for the 20 EU countries included and would thus specifically focus on the wealthiest group of households. The European Commission's impact analysis suggests (European Commission 2011) that a financial transaction tax would not have undesirable distributional effects. It may rather, as Schäfer (2016) shows, have progressive effects. Empirical evidence surveyed by Nerudová et al. (2018) suggests that fuel taxes are less regressive than other environmental taxes and place the highest burden on middle income classes. The little existing empirical evidence on the distributional effects of taxing flight tickets tends to show progressive effects or at least the absence of regressive ones.[16] According to the literature reviewed by Dellinger and Schratzenstaller (2018), nuclear power taxes are difficult to pass on to consumers, so that they would hardly have any undesirable distributional effects. It can be assumed that the only candidate included that will exert regressive distributional effects is a border carbon adjustment for the European Emission Trading System, which will make carbon-intensive imported products more expensive. Of course, the exact effects depend on the consumption patterns in importing EU Member States; considering the over-proportional marginal propensities to consume in lower income groups, however, these should be affected over-proportionally by a system of border carbon adjustment. While generally a corporate income tax should have progressive effects (Gravelle 2013), the introduction of a CCCTB should not affect personal income distribution.

Unfortunately, it is hardly possible to identify gender-differentiated effects for our candidates for tax-based own resources. The scarce existing empirical evidence on the distributional impact of taxes for women and men shows that consumption taxes generally affect women more than men due to their on average lower incomes and higher marginal propensities to

[16] See Krenek and Schratzenstaller (2017A) and the literature cited therein.

consume.[17] Accordingly, a flight ticket tax, a surcharge on national fuel taxes, and a border carbon adjustment for the ETS may be expected to burden women more than men. In contrast, based on the plausible assumption and the scarce empirical data showing that there are more male recipients of high incomes in general and of capital income in particular and also more male wealth owners, men would be affected more by a net wealth as well as a financial transaction tax[18] compared to women.

4.3 Environmental sustainability

A contribution to environmental sustainability can be expected by the four "green" candidates: a border carbon adjustment, a carbon-based flight ticket tax, a surcharge on a fuel tax, and a nuclear power tax. The first three options particularly are targeted at the reduction of carbon emissions, while a nuclear power tax addresses the potential dangers associated to nuclear power[19].

Taxes on net wealth, financial transactions and a CCCTB are not related to environmental aspects and therefore are neutral with regard to environmental sustainability.

4.4 Institutional sustainability

Our evaluation of institutional sustainability of the seven candidates for tax-based own resources rests on several sub-criteria, which are, as already mentioned, specifically formulated with regard to the task at hand – namely to identify suitable own resources to finance the EU budget.

4.4.1 Non-attributability of revenues

Revenues of a given tax are not directly attributable to specific countries if the tax is levied on activities or bases which are not exclusively connected to individual countries. This is obviously the case for a flight ticket tax levied on carbon emissions, a border carbon adjustment, and a surcharge on national fuel taxes; as the carbon emissions targeted by these taxes are not restricted to individual countries. Nuclear power tax revenues are not directly attributable to a specific country as well, as they are addressing external effects which partially are cross-border in nature. Also, financial transactions and the use of national stock exchanges often have a cross-border dimension, which makes it difficult to attribute the revenues from taxing them to individual countries.

Only revenues from a tax on net wealth and from a corporate income tax based on a CCCTB are clearly attributable to those countries where net wealth or the factors according to which

[17] See Gunnarsson et al. (2017) for an overview.

[18] The findings by Schäfer (2016) suggest that a financial transaction tax would burden men more than women.

[19] See Dellinger and Schratzenstaller (2018) for details.

the CCCTB is allocated to the countries in which a multinational company is active are located.

4.4.2 Short-term revenue stability

With the exception of the corporate income tax revenues based on a CCCTB, which is rather sensitive to cyclical fluctuations, and the financial transaction tax, levied on highly volatile financial transactions, all tax candidates can be expected to generate stable revenue streams in the short run, as their tax bases are not cyclically sensitive.

4.4.3 Fair national distribution

Figure 6 relates the revenue potential for each candidate[20] accruing to the individual Member States to their GDP, as a simple measure for the country-specific tax burden. Member States are ranked according to their GDP per capita, with Luxembourg ranking first and Bulgaria ranking last. Figure 6 illustrates that – gauged by this very simple measure – the country-specific tax burdens vary across the individual candidates for tax-based own resources. While the flight ticket tax, the nuclear power tax and a share of a CCCTB over-proportionately burden several "richer" and "poorer" countries as well, the countries over-proportionately burdened by a surcharge on national fuel taxes are mostly poorer countries. In contrast, the net wealth tax and the financial transaction tax imply an over-proportionate burden for richer countries.

It should be noted, however, that the simple measure used here to capture the national incidence of potential tax-based own resources is misleading for those candidates for which tax revenues are not attributable to individual countries. Relating revenues collected in a given country to its GDP disguises that a part of the revenues is exported due to the transnational nature of the tax base, and/ or because the tax base is not clearly attributable to a specific country. This is particularly true for financial transactions, fuel consumption, and international flights.

[20] Except for the border carbon adjustment, for which a two-country model (EU constituting one country and the rest of the world constituting the second one) was used to predict long-term revenues, thus making a differentiation between member states impossible.

Figure 6: Revenue potential of candidates for tax-based own resources in EU Member states in % of GDP

EU Member states	Flight Ticket Tax[1)]		Nuclear Power Tax[2)]		Fuel tax[3)]		Net Wealth Tax[4)]		Financial Transaction Tax[5)]		C(C)CTB[6)]	
	bn. €	% of GDP	bn. €	% of GDP	bn. €	% of GDP	bn. €	% of GDP	bn. €	% of GDP	bn. €	% of GDP
Luxembourg	0.005	0.01	0.000		0.548	1.10	0.9	1.81	0.000		0.029	0.06
Ireland	0.081	0.04	0.000		1.091	0.56	2.6	1.33	0.000		0.061	0.03
Denmark	0.096	0.04	0.000		1.277	0.48			0.000		0.167	0.06
Sweden	0.097	0.02	1.399	0.32	2.031	0.47			2.406	0.52	0.296	0.07
Netherlands	0.385	0.06	0.087	0.01	2.983	0.44	8.7	1.30	0.000		0.605	0.09
Austria	0.084	0.03	0.000		2.205	0.66	4.9	1.47	1.346	0.38	0.102	0.03
Finland	0.076	0.04	0.510	0.25	1.358	0.66	1.5	0.73	0.000		0.071	0.03
Germany	0.916	0.03	2.066	0.07	17.514	0.60	47.5	1.62	10.008	0.32	0.799	0.03
Belgium	0.107	0.03	0.719	0.18	2.960	0.74	8.1	2.02	2.479	0.58	0.205	0.05
United Kingdom	1.242	0.05	1.303	0.06	10.596	0.46			0.000		3.197	0.14
France	0.772	0.04	9.357	0.44	12.894	0.60	31.5	1.47	13.134	0.59	1.063	0.05
Italy	0.395	0.02	0.000		8.971	0.55	28.0	1.73	2.793	0.17	0.471	0.03
Spain	0.630	0.06	1.237	0.12	7.962	0.77	15.2	1.46	0.000		0.406	0.04
Malta	0.011	0.13	0.000		0.107	1.26	0.1	1.18	0.000		0.000	0.01
Cyprus	0.029	0.16	0.000		0.245	1.39	0.7	3.98	0.000		0.000	0.00
Slovenia	0.003	0.01	0.136	0.36	0.499	1.33	0.3	0.80	0.029	0.07	0.003	0.01
Portugal	0.125	0.07	0.000		1.404	0.81	2.0	1.16	0.248	0.13	0.056	0.03
Czech Republic	0.037	0.02	0.644	0.41	1.451	0.93			0.000		0.099	0.06
Estonia	0.005	0.02	0.000		0.239	1.19	0.2	1.00	0.000		0.010	0.05
Greece	0.114	0.06	0.000		1.660	0.93	1.3	0.73	0.180	0.10	0.013	0.01
Slovakia	0.006	0.01	0.324	0.43	0.522	0.69	0.1	0.13	0.184	0.23	0.033	0.04
Lithuania	0.009	0.02	0.000		0.144	0.39			0.000		0.006	0.02
Latvia	0.011	0.05	0.000		0.276	1.17	0.2	0.85	0.000		0.009	0.04
Hungary	0.022	0.02	0.333	0.32	1.033	0.98	0.5	0.47	0.000		0.060	0.06
Poland	0.075	0.02	0.242	0.06	3.795	0.92	1.9	0.46	0.000		0.112	0.03
Croatia	0.013	0.03	0.000		0.534	1.23			0.000		0.026	0.06
Romania	0.026	0.02	0.000		1.404	0.93			0.000		0.075	0.05
Bulgaria	0.022	0.05	0.338	0.79	0.499	1.17			0.000		0.007	0.02
Total	5.392	0.04	18.694	0.17	86.202	0.61	156.2	1.47	32.807	0.37	7.980	0.06

Source: own calculations. Notes: Countries ranked according to GDP per capita in 2017. Highlighted cells show above average values. - 1) High tax scenario (35 € per tonne carbon emissions), base year 2014. – 2) Nuclear power tax base year: 2014. – 3) 3) Fuel tax tax rate 0.20 €/litre, base year: 2014 – 4) Net Wealth Tax base year: 2014. – 5) Financial Transaction Tax static scenario (0.01% derivatives 0.1% equity, 0.01% OTC), base year: 2016. 6) 1% of CCCTB, base year: 2014.

4.4.4 Non-enforceability on the national level

Almost all candidates cannot be enforced at all or only insufficiently on the national level. Tax competition puts pressure on national fuel tax rates (Nerudová et al. 2018), the corporate income tax (OECD 2019), flight ticket taxes (Krenek and Schratzenstaller 2017A), and the net wealth tax (Krenek and Schratzenstaller 2017B). There is a broad consensus that a financial transaction tax could not be implemented unilaterally (IMF 2010, European Commission 2011), and it is in the nature of the border carbon adjustment for the EU ETS that it can only be introduced for the EU as a whole. Only taxes on nuclear power are not endangered by tax competition.

Cross-border externalities are another factor weakening the effectiveness of unilateral implementation of certain taxes. When determining national tax rates, national governments neglect cross-border externalities (e.g. carbon emissions or externalities of nuclear power generation), thus fixing suboptimal tax levels. Moreover, governments may try to act as freeriders if other governments have already implemented taxes effectively reducing cross-border externalities (Auerswald, Konrad and Thum 2011). Such cross-border externalities are relevant for a carbon-based flight ticket tax, a fuel tax, a nuclear power tax, and a financial transaction tax.

4.4.5 Fiscal integration

All tax-based own resources introduced on a harmonized basis in all EU Member States would directly contribute to fiscal integration in the EU through tax harmonization. Accordingly, a carbon-based flight ticket tax, a financial transaction tax, a nuclear power tax, a net wealth tax, and revenues based on a CCCTB would increase fiscal integration. Also a surcharge on national fuel taxes would strengthen fiscal integration in the EU, albeit to a lesser degree. Fiscal integration would be deepened also by a border carbon adjustment for the EU ETS.

4.4.6 Non-interference

With the exception of a border carbon adjustment for the EU ETS[21], all options analysed interfere to some extent with national tax systems. However, our candidates for tax-based own resources currently are applied to differing degrees in EU Member States.

Interference with national tax systems is most obvious for revenues based on a CCCTB and revenues from a fuel tax: Both corporate income taxes and fuel taxes exist in all EU Member States. This is why we suggest that Member States transfer a uniform share of a CCCTB to the

[21] Compared to the option to transfer (part of the) revenues from the EU ETS (by auctioning emission certificates) to the EU budget, as suggested by the HLGOR (2016) and the European Commission (2018C), this option has the advantage of complete non-interference with existing provisions, as currently 50% of EU ETS proceeds are earmarked for climate-related actions at Member State level.

EU budget and levy a uniform surcharge on their national fuel taxes to be transferred to the EU.

A flight ticket tax is levied in 5 EU Member States as of 2019 (the four EU Member States mentioned in Krenek and Schratzenstaller 2017A and Sweden, which introduced its flight ticket tax in 2018). A net wealth tax exists in Spain only, on a temporary basis (Krenek and Schratzenstaller 2017B). In 2018, 8 of the 14 nuclear power producing Member States taxed nuclear power (Dellinger and Schratzenstaller 2018); however, interference issues are losing in urgence as the importance of existing nuclear power taxes is continuously decreasing.

Although none of the EU Member States levies a broad-based financial transaction tax, 11 Member States have some kind of tax on specific financial transactions, which, however, with the exception of the British stamp duty do not yield significant revenues. Belgium, Greece and Cyprus levy a stock exchange transaction tax. A stamp duty on certain financial transactions is applied in Ireland, the UK and Malta. France and Italy have implemented – in face of the until now fruitless efforts to introduce a financial transaction tax within enhanced cooperation – a financial transaction tax on certain financial transactions including high frequency trades. Finland, the Netherlands and Poland tax specific financial transactions not taking place on organized exchanges. Insofar as an EU-wide financial transaction tax would cover the transactions subject to transaction taxes currently levied at Member State level, interference issues would have to be addressed.

4.4.7 Visibility

Most visible are those taxes that affect a significant share of taxpayers. This is obviously the case for a flight ticket tax and a fuel tax. Also, a net wealth tax would be visible – not because a significant share of individual taxpayers would have to pay the tax, but because all individuals would have to be assessed whether they are liable for taxation.

4.4.8 Conclusion

Overall, based on our sustainability-oriented evaluation criteria, a carbon-based flight ticket tax is best suited among the potential options analysed here. Also, a border carbon adjustment, a surcharge on national fuel taxes, a net wealth tax and a financial transaction tax appear as well suited, while a nuclear power tax and a share in a CCCTB score less well. The criterion of non-attributability of tax revenues, which we have pointed out as particularly important to assess whether revenues from a specific candidate should be used to finance the EU budget, is fulfilled by all options with the exceptions of a net wealth tax and a share in a CCCTB. All candidates would further European integration, and most of them could not be implemented effectively at the national level.

5 Implementation aspects

Implementation aspects include institutional as well as legal aspects, which both will be addressed in this chapter.

5.1 Legal implementation aspects

Before looking in detail into the specific legal provisions relevant for decisions on EU own resources, some general remarks shall be made regarding the decision process related to the introduction of new tax-based own resources.

Firstly, all decisions on new own resources, and therefore also on new tax-based own resources, which are intended to complement or replace the current measures to finance the EU budget, have to comply with the own resource system in Article 311 (1) TFEU (see 5.1.1.). Whereas national states may directly levy taxes to gain revenue, the EU, lacking any fiscal sovereignty, may raise revenue exclusively through "own resources", basically contributions from the Member States or – to a limited extent – "other revenue". Article 311 (3) TFEU sets down the procedure for implementing and changing the current form of own resources, which is a specific legislative procedure with some distinctive features. The decision about changes in the existing own resource system not only requires the unanimous support of the Council after consulting the European Parliament, but also the approval of the national parliaments according to their constitutional requirements.

Secondly, tax-based own resources, based on the introduction or expansion of taxes across the EU, have to comply with the EU's tax competences, addressed in Articles 113, 115, 192 and 194 TFEU (see 5.1.2.). New own resources may be either based on the provisions relevant for the harmonization or approximation of national taxation necessary for the functioning of the internal market (Articles 113, 115 TFEU). Or they may consist of fiscal measures introduced to pursue environmental and energy purposes (Articles 192 (2) and 194 (3) TFEU). The decision to use the revenues from harmonized or approximated taxes or from fiscal measures relevant for environmental or energy policy has to be based, in a second step, on an own resource decision according to Article 311 TFEU, as mentioned above.

All decisions to harmonize or to approximate national taxes or to introduce new taxes across the EU are subject to a special legislative procedure (Spangenberg, Mumford and Daly 2018; Weishaar 2018). This special legislative procedure requires the unanimous agreement of the European Council, while the European Parliament as well as the European Economic and Social Committee have only consultation rights. Obviously, the unanimity requirement is a very effective obstacle to implementing coordinated or harmonized tax provisions in the EU (Kube, Reimer and Spengel 2016). The enhanced cooperation procedure (Articles 326 to 334 TFEU),

allowing a group of at least nine Member States to introduce coordinated or harmonised measures, offers some form of escape from deadlock situations created by the special legislative procedure for those Member States willing and determined to implement certain tax measures (Spangenberg, Mumford and Daly 2018). However, until now no tax measures have been introduced under the enhanced cooperation procedure. The most prominent example for an initiative resting on the enhanced cooperation procedure is the financial transaction tax, the introduction of which, after meeting fierce resistance by a number of Member States, is currently pursued under the enhanced cooperation procedure. That taxes introduced within enhanced cooperation are structurally unsuitable as own resources, as some authors claim (see, e.g., Kube 2017), is not necessarily the case: If all Member States agree on a new own resource decision including the implementation of tax-based own resources by the group of Member States participating in enhanced cooperation, the participating Member States could reduce their national contributions correspondingly.

The following sections will give a brief overview of the relevance of these legal provisions for any decision on tax-based own resources for the EU. On this basis we will identify the legal provisions providing the specific legal basis for our candidates for tax-based own resources.

5.1.1 Legal basis of the own resources system of the EU

As mentioned above, the EU finances its budget by so-called "own resources", based on Articles 310 and 311 TFEU (Spangenberg, Mumford and Daly 2018). According to Article 311 TFEU, "[t]he Union shall provide itself with the means necessary to attain its objectives and carry through its policies. Without prejudice to other revenue, the budget shall be financed wholly from own resources."

This provision has two important implications (Waldhoff 2016; Spangenberg, Mumford and Daly 2018). Firstly, it implies that the EU is not allowed to incur debt. Secondly, it does not grant genuine taxation rights – in the sense of legislative and revenue competences – to the EU (Kube 2017). However, own resource decisions based on Article 311 TFEU allow for the introduction for new or different own resources, and therefore also tax-based own resources – contingent, as mentioned above, on the application of the special legislative procedure requiring unanimity of the European Council. Waldhoff (2016) also points out that while Article 311 TFEU in principle allows to depart from the own resource decisions, as Article 311 TFEU mentions "other revenue", this kind of revenues would not be permitted to contribute to financing the EU budget as a primary revenue source (see also Buser 2013). In any case, any decision to introduce tax-based own resources as new own resources would have to comply with the own resource decision in Article 311 (3) TFEU, as the provisions that allow for the harmonization of

existing taxes or the introduction of new taxes across the EU (see in detail section 5.3.) do not automatically include taxes for which the revenue competence lies with the EU.

5.1.2 Legal basis of tax-based own resources

Generally, the legal provisions governing tax-based own resources include Articles 113 and 115 TFEU (referring to the harmonization of direct and the approximation indirect taxes) and Articles 191, 192 and 194 TFEU (referring to the introduction of environmentally-motivated fiscal revenues) and will be briefly presented in this section.

5.1.2.1 Article 113 TFEU – harmonization of indirect taxes

Article 113 TFEU confers a direct mandate to the EU to harmonize indirect taxes to the extent that such a harmonization is necessary to guarantee the functioning of the internal market. This implies that the EU can adopt legislation which Member States are obliged to implement (Spangenberg, Mumford and Daly 2018). The scope of Article 113 TFEU is restricted to taxes containing cross-border aspects. The harmonization mandate refers to the tax base and to tax rates if harmonization if necessary to avoid market distortions and to secure the functioning of the internal market. As it is more difficult to justify the necessity of full harmonization of tax rates and to find political majorities for full tax harmonization, harmonization of tax rates in reality is limited to introducing minimum tax rates.

It should also be pointed out that the harmonization mandate only covers taxes already existing in EU Member States, which precludes the use of Article 113 TFEU as justification of the harmonized introduction of not yet existing new taxes in EU Member States (Buser 2013). Therefore, Article 113 TFEU cannot constitute a legal basis for newly introduced taxes serving as tax-based own resources. It is applicable, however, for taxes existing in some Member States already.

5.1.2.2 Article 115 TFEU – approximation of direct taxes

In contrast to indirect taxes, the EU does not have an explicit mandate to harmonize direct taxes. The precondition for the EU to take the initiative with regard to harmonizing direct taxes are imminent distortions of the internal market. In such cases, Article 115 TFEU permits the adoption of directives for the approximation of laws, regulations and administrative provisions of the Member States which directly affect the establishment or functioning of the international market, which includes directives about direct taxes. These directives are to be implemented by Member States and result in the harmonization of national tax provisions across Member States (Kube, Reimer and Spengel 2016). Analogously to indirect taxes, the mandate of the EU would cover a harmonization of the tax base and tax rates if deemed necessary for the functioning of the internal market; again, however, limited to already existing taxes.

5.1.2.3 Articles 191, 192 and 194 TFEU

Articles 191, 192 and 194 TFEU constitute the legal basis for the EU to become active with regard to environmental and energy policy. Article 191 provides the EU with a mandate regarding initiatives aiming at "preserving, protecting and improving the quality of the environment". According to Article 192 (2) TFEU, such initiatives can also include fiscal measures under the premise that their primary purpose is not the generation of revenue but the achievement of environmental goals (Spangenberg, Mumford and Daly 2018). Article 194 (3) provides a similar specific competence that permits the adoption of fiscal measures with a view to the objectives concerning energy policies in Article 194 (1) TFEU. In contrast to Article 113 TFEU, Articles 192 (2) and 194 (3) TFEU would permit the introduction of new taxes for environmental purposes, thus granting legislative competence with regard to environmental taxes to the EU (Buser 2013). According to Waldhoff (2016), allocating the revenue from such environmentally-motivated fiscal measures to the EU budget should be possible if they do not constitute a primary revenue source.

5.2 Institutional implementation aspects

In principle, there are various design options for tax-based own resources to finance the EU budget (HLGOR 2016). Three possible designs are conceivable.[22]

Under a revenue-sharing system, EU and Member States would participate in the revenues from a tax that would be fully harmonized (regarding tax rate and tax base) across Member States. As the tax would be introduced by Member States, which would receive the revenues and transfer these (partially) to the EU, this implementation model can also be called transfer system. Such a transfer system offers itself for tax-based own resources resting on taxes which do not yet exist in any EU Member State and would therefore be additional to the already existing national taxes. It can also be applied for already existing taxes levied in only a few Member States. In this case, however, the agreement of these Member States to give up their claims to the revenues of the respective tax and, if necessary, to adjust the tax rate and/ or the tax base to the harmonized design of the tax agreed EU-wide would be required.

The surcharge system would require the harmonisation of the tax base only. The EU would then levy a surcharge in addition to the existing national tax rates, which would not be harmonised, and would receive the revenues from this surcharge. This is the appropriate model for taxes which already exist in all EU Member States and are levied on an identical tax base.

[22] See also Raddatz and Schick (2003).

The separation system would allow the EU to introduce a specific tax and to collect its revenues. In this case the EU would have own legislative and revenue competencies.

Of these three models, both the transfer as well as the surcharge system would be compatible with the current EU Treaties. They are specific forms of a revenue sharing arrangement between the EU and EU Member States. The introduction of new harmonized tax based resources involves changes in the current own-resource system and would have to be determined in an own resource decision. Article 311 TFEU explicitly allows the introduction of new or the elimination of existing own resources. In both cases, tax revenues would be collected by Member States. Depending on the harmonization provisions of the TFEU on which a specific tax would be based, it would rest on EU or national legislation. A separation system, which would require own legislative and revenue competencies of the EU, is not possible within the existing legal framework of the EU (Waldhoff 2016).

5.3 Legal basis and institutional implementation of candidates for sustainability-oriented tax-based own resources

This section identifies the legal basis for the individual candidates for tax-based own resources analysed above. In principle, all of them should be permitted based on Article 311. Their introduction would be based on the relevant harmonization or approximation rules anchored in the TFEU (see section 5.1.2) and an own resource decision (see section 5.1.1).

The most obvious legal basis of an **EU-wide carbon-based flight ticket tax** is Article 192 (2) TFEU: considering the fact that aviation is not adequately covered by the EU ETS and that unilateral introduction of an effective flight ticket tax imposing an adequate price on carbon emissions of international flights is doomed to failure due to competitive pressures, as previous experience made by EU Member States has shown (Krenek and Schratzenstaller 2017A). As a flight ticket tax is levied in some Member States already, a mandate for introducing a harmonized flight ticket tax in the EU could also be based on Article 113 TFEU permitting the EU to harmonize indirect taxes, provided that such a harmonization can be justified to avoid competitive distortions in the internal market.

The legal basis of the Emission Trading System (ETS) itself is Article 192 TFEU (ex Article 175 (1) TEC) (Directive 2003/87/EC). This provision should also permit the introduction of **a border carbon adjustment for the EU ETS**, the primary purpose of which is to improve the functioning of the ETS by mitigating the problem of carbon leakage (Krenek, Sommer and Schratzenstaller 2018). Articles 113 and 115 governing the harmonization of taxes in the EU bear no relevance in this case.

The legal basis for the EU Energy Tax Directive adopted in 2003, which also includes fuel taxes, is Article 113 TFEU (ex Article 93 TEC) (Directive 2003/96/EC) (Weishaar 2018). Also, a **surcharge on national fuel taxes** should be permitted by Article 113 TFEU governing the harmonization of indirect taxes. In face of the existing distortions of competition in the internal market caused by differing national fuel tax rates, a surcharge on national fuel tax rates may be justified based on Article 113 TFEU insofar as it would decrease the relative differences between national fuel tax rates, thus somewhat easing harmful fuel tax competition (Nerudová et al. 2018). Article 192 (2) TFEU may constitute an additional legal base for a uniform surcharge on national fuel tax rates to pursue environmental purposes.

The introduction of a **nuclear power tax** in the nuclear power producing EU Member States should be possible based on Articles 192 (2) and 194 (3) TFEU. Articles 113 and 115 TFEU should not be relevant in this case.

The **financial transaction tax** has been initiated by the European Commission based on Article 113 TFEU, which can be justified by the existence of a financial transaction tax similar to the one proposed by the European Commission in two Member States (Italy and France) (Wernsmann and Zirkl 2014). Accordingly, Member States could agree on a harmonized tax base and tax rates.

A **CCCTB-based own resource**, drawing on a harmonized corporate income tax base in the EU, would be based on Article 115 TFEU (Kube 2017).

An **EU-wide net wealth tax** is the only candidate analysed here that obviously does not have any legal basis in the EU Treaties. Therefore, taxing net wealth on a harmonized basis, based on EU legislation referring to Article 115 TFEU, is not permitted within the current legal framework of the EU.

Figure 7: Legal basis of candidates for sustainability-oriented tax-based own resources

Potential tax-based own resource	carbon-based flight ticket tax	border carbon adjustment for the EU Emission Trading System	surcharge on national fuel tax	nuclear power tax	financial transaction tax	CCCTB-based own resource	net wealth tax
Art. 113 TFEU	X	-	X	-	X	-	-
Art. 115 TFEU	-	-	-	-	-	X	-
Art. 192 (2) / 194 (3) TFEU	X	X	X	X	-	-	-
Implementation model	transfer system	transfer system	surcharge system	transfer system	transfer system	surcharge system	transfer system

Source: own representation.

6 Conclusions and outlook

The proposal for the MFF 2021 to 2027 launched by the European Commission on May 2, 2018 in fact aims at enhancing the EU budget's European added value. To address the long-term challenges the EU is facing, the European Commission proposes a combination of expanding the EU budget volume and shifting the structure of EU expenditures as well as revenues.

The European Commission (2018C, 2018D) suggests several structural reforms for the EU system of own resources which are based on the recommendations derived by the HLGOR (2016). These reforms include a simplification of the system of own resources. Along with the elimination of the UK rebate, which will become obsolete with the Brexit, all other rebates for certain net contributing countries shall be phased out. Moreover, the calculation method for the VAT-based own resource shall be simplified. These proposals are to be welcomed, as they will make the own resources system less complicated and more transparent.

In addition, the European Commission's plans foresee a diversification of own resources: new "true" own resources are to replace or complement, respectively, the EU's current funding sources. Concretely, the European Commission proposes to channel 20% of the revenues from auctioning emission trading certificates as well as the revenues from a rate of 3% of a harmonised corporate tax base (CCTB) and from a tax of € 0.80 per kilogram of non-recycled plastic waste into the EU budget. These new own resources are expected to raise a share of 12% of overall EU revenues in the future, thus reducing the share of national contributions from currently more than 80% to 71% by 2027.

Indeed, the three new own resources suggested by the European Commission appear as "natural-born" true own resources for the EU (Schratzenstaller 2018): The plastic tax due to the cross-border nature of the environmental damage associated with plastic waste and the use of fossil fuels for plastic production. The other two options are directly connected with EU policies to cope with important European challenges transgressing national borders. However, the financial contribution of these new own resources would be rather moderate in quantitative terms. Therefore, the introduction of further tax-based own resources beyond the European Commission's proposals, along the lines presented above, can be expected to create considerable additional European added value.

A central prerequisite for the implementation of tax-based own resources is a parallel far-reaching shift in the EU's spending priorities (HLGOR 2016). Otherwise, the introduction of tax-based own resources may rather reinforce Euroscepticism in the EU, as they are much more visible for citizens than the current revenue sources. The recent proposal by the European Commission aims at a rather moderate restructuring of EU expenditures (Schratzenstaller 2019). The share of agricultural and of cohesion expenditures (regional and social funds) is to decline to 29% of overall expenditures each. The share of the research framework programme Horizon would increase from 7.3% to 7.6% of overall expenditures, while the share dedicated to cross-border infrastructure (Connecting Europe Facility) would stagnate at about 2%. The largest increases are foreseen for the areas migration, asylum, border management, defence and external relations, which together will more than double their share in overall expenditures, from currently 7.7% to 15.5%. To increase added value of EU expenditures and to thus make tax-based own resources for policy-makers and citizens acceptable, a more decisive shift of expenditures towards research and education, the infrastructure needed for a European decarbonization strategy, integration policy and development cooperation is required.

Ultimately EU Member States need to overcome the net position thinking currently blocking the route to an EU budget adequate in structure and size to meet future challenges for the EU. This again requires the acknowledgment of the manifold benefits provided to all EU countries by their EU membership. Substituting a major share of national contributions by sustainability-oriented tax-based own resources may act as a catalyst to secure net contributors' agreement to maintain or even increase the current spending level in exchange for a far-reaching reform of EU expenditure to enhance European added value. Therefore, one crucial success factor for a future-oriented reform of EU finances is to understand the need for package solutions, as stressed by Núñez Ferrer et al. (2016) and the HLGOR (2016), comprising the expenditure as well as the revenue side of the EU budget. An obvious example is the concentration of cohesion funds on "poorer" Member States, which currently in the majority strongly object to any tax coordination as they regard the option of tax cuts or generally lower tax levels as one of the few instruments available to them to secure their competitiveness, in exchange for their agreement to the EU-wide introduction of tax-based own resources on a harmonised basis. Another package deal may include the introduction of carbon-based levies and specific support measures to further decarbonisation for particularly strongly affected countries (Núñez Ferrer et al. 2016), possibly within agricultural or cohesion funds or expenditure on cross-border infrastructure. Package deals would require to identify the economic, social and environmental

regional impact in addition to the fiscal impact of the various options for tax-based own resources. Such a detailed impact analysis, which goes beyond the scope of our research, constitutes a most interesting question for further research.

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8 Project information

FairTax is a cross-disciplinary four year H2020 EU project aiming to produce recommendations on how fair and sustainable taxation and social policy reforms can increase the economic stability of EU member states, promoting economic equality and security, enhancing coordination and harmonisation of tax, social inclusion, environmental, legitimacy, and compliance measures, support deepening of the European Monetary Union, and expanding the EU's own resource revenue bases. Under the coordination of Umeå University (Sweden), comparative and international policy fiscal experts from eleven universities in six EU countries and three non-EU countries (Brazil, Canada and Norway) contribute to FairTax research.

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