TAX CANONS AND THEIR MEASURES: CHALLENGES FOR FUTURE RESEARCH

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Abstract

The aim of this paper is to sum up and discuss our results so far in the field of good tax system principles, measurement and consequences of changes of the degree of their fulfilment, and to outline possibilities for future research in these fields. The research has been based on the construction of our own unique indicators of fulfilment of good tax system principles in sense of Adam Smith's tax canons. The results of our analyses indicate two important things. First, there exist statistically significant relationships between the indicators. However, the relationship is negative in some cases, which means that it may not be possible to reach all of the canons at the same time. Second, at least some of the indicators were confirmed to have statistically significant effects on behaviour of economic agents and thus must be considered when suggesting changes to tax system parameters (tax legislation). In our future research, we will analyse concrete links between particular tax canons and the degree of their fulfilment to find some kind of optimal mix of them for various types of countries that will cause the lowest degree of unwanted distortions and inefficiencies in the economies.

Keywords

Tax Canons, Tax Certainty, Tax Fairness, World Tax Index, WTI

I. Introduction

For almost a decade, the authors of the paper have done research in the field of taxation and its impacts on economy, or better said on society. As there has been no doubts in recent years among economists that taxation affects real economic measures, the research was originally based on estimations of impacts of taxes and changes of their rates on economic growth. Later, we also focused on the issue of government spending financed by various types of taxes and included them into our models. However, there still remained a problem of how to measure taxation if we wanted to avoid some failures of traditional measures such as tax quota or implicit tax rates.

In reaction to this challenge, we have suggested the World Tax Index (WTI) – a multicriteria indicator of taxation that combines hard data from generally accepted databases with soft data based on qualified expert opinion. The soft data reflects perception of taxation in fact and that brought us to an idea that it is the perception of taxation which may be more important than taxation rates and their changes when it comes to reaction in behaviour of economic agents. Of course, the perception of taxation differs in different countries according to tax mentality of the people, but in general, if taxation was perceived as correct by economic agents, it would eliminate tax avoidance and it wouldn't cause distortions in their behaviour. But what must taxation be to be perceived as "correct"?

Adam Smith in his Wealth of Nations already laid down tax canons as main principles for good tax system design. It includes canon of convenience (ease), canon of economy, canon of certainty and canon of fairness (or equity). These basic principles have perhaps not yet been overcome, and thus

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we have decided to move our research in this direction and to find out what changes in a society would appear if tax system was "good" in Smith's sense.

The aim of this paper is to sum up and discuss our results so far in the field of good tax system principles, measurement and consequences of changes of the degree of their fulfilment, and to outline possibilities for the future development of our research.

II. Canons of convenience and economy: World Tax Index

As already stated within the Introduction, the World Tax Index is some kind of precursor of our further indices connected to the issue of taxation perception. Although it was constructed with the aim to measure and compare levels of taxation in different countries, it includes administrative costs of taxation as well as ease of paying taxes, and thus may be also consider a measure of principles of tax convenience and economy.

Originally, WTI was designed as an alternative to the tax quota that struggles with many limitations. It is expressed by the percentage share of tax revenues to nominal gross domestic product and it may be computed either in the form of total taxation or separately for individual types of taxes. The tax quota is commonly published in a simple or compound form. Simple tax quota includes narrowly defined tax in the numerator, i.e. tax in a legal sense. The compound tax quota then works with broad-based taxes in the numerator, i.e. the levies that meet the fiscal characters. This includes, e.g. a part of the public insurance paid by the employer in the case of direct taxes, or duties in the case of indirect taxes. The basic advantage of the tax quota as a tax burden indicator is the simplicity of its design and the availability of a large sample of countries in a relatively long period. For these reasons, it is almost exclusively used in comparative studies and econometric analyses. The fundamental drawback, however, which is not often mentioned, is that the tax quota may not actually reflect the real amount of the tax burden. This is because there may be no demonstrable correlation between the effective tax burden and tax returns. As follows from the elementary Laffer curve (e.g. Laffer, 2004), the relationship between the size of the effective tax burden, described, for example, by the nominal tax rate on the one hand and tax revenues on the other, dramatically changes over time and is obviously nonlinear. At a relatively low level of the tax burden, there may be a direct correlation between its amount and tax revenues, but with decreasing marginal yield at an additional increase in the tax rate. At a certain level, however, the dependence of tax changes and the link becomes inversely proportional. Enlarging the tax burden does not increase tax revenues (and therefore not the tax rate) but reduces them. In other words, the tax quota doesn't work with the perception of tax changes and its influence on tax collection. Another disadvantage, rather marginal, is that the tax quota uses the indicator of gross domestic product, which may be statistically unreliable or involve the shadow economy to varying degrees in different countries, etc. The tax quota may thus be, rather than as an indicator of the tax burden, explained as the part of the GDP that is redistributed through taxes.

As a kind of supplement, rather than an alternative, to the tax quota, we can use implicit tax rates, which do not apply tax revenues to GDP, but just to the type of activity or commodities which are affected by taxes. It is therefore an analysis of the impact of the tax burden on activities according to their function (capital, labour and consumption). The implicit tax rate on consumption is the relation of consumption taxes (mainly VAT and selective excise taxes) to total household consumption. The rate on labour is defined as the share of taxes on labour (including public insurance) to total labour costs. The rate on capital income means the share of capital taxes in capital and corporate pensions, etc. The disadvantage of implicit tax rates is that in a credible and comparable form they are published only for the countries of the European Union. Also, the above described disadvantages of the tax quota may be applied in the case of implicit tax rates.

The main advantage of alternative indicators, including the WTI, is the elimination of the problematic relationship between the real tax burden and tax quota. Their disadvantage is, however, their difficult construction and shorter time series. Besides the tax quota and implicit tax rates, De Laet, Wöhlbier (2008) show yet another way to measure the tax burden. They assign various economic functions

(work, business, consumption) to various types of taxes, broken down according to national accounts, while their analysis is based on the definition of a tax as a compulsory unrequited payment to the government. Another alternative way to measure the tax burden is described by Kiss, Jedrzejowicz, Jirsáková (2009). Their criticism of the tax quota is mainly related to its structure. They thus offer a customized version of the tax quota, which is based on the original quota, but eliminates e.g. the influence of government, which is seen as the major source of distortion by the authors. In both cases, the authors only use some variation of the tax quota to measure the tax burden, which seeks to eliminate the most serious problems that are associated with its construction. Other researchers are not trying to measure the overall tax burden, but focus only on a particular area, resp. on a certain type of businesses. For the calculation, they use variously constructed effective rates, i.e. such rates that try to consider most aspects affecting the overall tax liability. For these methods, data sources derived e.g. from questionnaire surveys are often used, which leads to the above-mentioned problems of the time series, the number of observations, etc. Effective tax rates are often used to express the tax burden on corporations (Lazar, 2010, Janíčková, 2013), but also the tax burden on highly skilled labour (Elschner, Schwager, 2004) or e.g. the tax burden on the banking sector (Ricotti et al., 2010). None of these alternatives, however, offers a real measurement of the total tax burden, which would also take into account the perception of tax burden and factors such as progressivity of taxation, the administrative burden of tax collection, tax deductible expenses, etc.

The WTI was thus constructed as an overall multi-criteria indicator of the tax burden, combining data on tax conditions available from internationally-recognized data sources with data expressing a qualified expert opinion (QEO). The index value indicates the overall tax burden in relation to other countries under coverage, with higher WTI values representing a higher tax burden. The concept of the tax burden, with regard to the WTI, does not apply only to the amount of taxes collected and links to the GDP, as is the case for the tax quota. It seeks to expand its scope by incorporating other important aspects associated with, e.g. tax progression, the administrative difficulty of tax collection from the perspective of the payer, the range of tax exemptions, options concerning the tax deductibility of expenses, etc. One of the most noticeable advantages of the WTI, however, is the inclusion of the soft data expressing the QEO, and thus a level of tax burden perception, gained from a large-scale questionnaire survey among tax specialist from all the OECD countries, as already mentioned above.

The WTI is composed of the following five sub-indices:

- Corporate Income Tax (CIT, the relative level of tax burden with respect to corporate taxation),
- Personal Income Tax (PIT, the relative level of tax burden with respect to household taxation),
- Value Added Tax (VAT, the relative level of tax burden with respect to a VAT-type taxes),
- Individual Property Taxes (PRO, the relative level of tax burden with respect to property taxes),
- Other Taxes on Consumption (OTC, the relative level of tax burden with respect to selective taxes on consumption).

Each of the individual sub-indices is also the result of several factors. Therefore, the subindices also break down further into several components. The QEO survey was conducted four times in total – the first pilot round in 2010, the second, presented in Kotlán, Machová (2012), in 2011, then in 2012, and finally in 2017 for the Czech Republic. The first two rounds of the survey enriched us with valuable comments and suggestions from the tax experts and led us to change the methodology in 2013 in two important ways concerning the structure of selected WTI subindices and changes of the WTI subindices weights over time (see Machová, Kotlán, 2013). The latest modification of the WTI was published in Konôpková, Buček (2016). The new methodology is based on factor analysis and pilot project was held in 2017 for the Czech Republic to test the relevance of the method. The results of first analyses using this indicator were published in Konôpková, Machová (2017).

III. Canon of tax (un)certainty

During the period of testing the WTI in empirical analyses, we have shown that often changes in taxation are more harmful for economic growth and other economic variables than high but stable level of taxation, especially in case of countries with general acceptation of higher tax burden (the acceptation, however, comes from the knowledge of the fact that the higher tax burden is compensated with high quality of public services and goods financed by the taxes paid). From that reason, we have started our research of tax certainty (or uncertainty) impacts on economy and behaviour of agents.

We understand tax certainty a special case of general legal certainty that was first discussed by representatives of the Economic Analysis of Law (or Law and Economics) in the 1970s (Posner, 1973, Ehrlich, Posner, 1974). In their studies, they dealt with various factors that may affect legal uncertainty, but they were mainly concerned with the effectiveness of the law and the legal system. However, these and subsequent studies (e.g. Calfee, Craswell, 1984, Damato, 1983, or later Sutton, Dobbin, 1996) laid the foundations for examining the impact of legal uncertainty on the behaviour of economic agents.

Latest study by Lang (2017) shows that legal uncertainty may, under certain conditions, raise welfare as it discourages some actions with low private benefits, while it encourages other actions with high private benefits. This conclusion is, however, rather exceptional. Most of other current authors agree on generally accepted studies by Calfee, Craswell (1984), and Damato (1983) who explain how legal uncertainty distorts behaviour of agents, and that legal uncertainty increases overtime. These include studies concerning various fields of law, such as Meyer (2016), Afanasyev (2016), or Guenther (2015). There also exist studies investigating behaviour of legal entities in generally uncertain environment (Bernasconi, Levaggi, Menoncin, 2015, or Lawsky, 2013) and under conditions of political uncertainty (Katz, Owen, 2013).

On the other hand, current literature is not very rich in articles about tax uncertainty itself, or legal uncertainty concerning taxes. The basic literature for this is represented already by Smith (1776, ed. 1958), as stated within the introduction. His tax canons are also noticed by Romano (2002), Morse, Williams (2012), or Brokelind (2014). Although the literature is quite weak, some papers may be mentioned that complete, yet perhaps unequalled, Smith's approach. Fasora (2009) states that Smith's certainty principle is currently seen as a requirement for legal perfection and political transparency of the tax system, where frequent amendments to legislation in order to change the basic tax parameters do not allow this requirement to be met. The failure to meet these requirements opens space for corruption or lobbying, which can also undermine legal certainty, deform expectations, increase the administrative costs of taxation and lead to excessive tax burden. Studies by Easterly et al. (1991), Smith (1996), Edmiston (2001), or El-Shazly (2009) have shown over time that tax uncertainty in case of various types of taxes influences and distorts behaviour of agents, especially in sense of shadow economy activities, no matter if it concerns households or firms. These thoughts are supported also by Osofsky (2011), who criticises deliberate creating of uncertainty to increase tax revenue. However, also in this case, there exist opposite studies claiming that the effects of tax uncertainty on economy may be positive, or better said they are not negative - these includes studies by Niemann (2004, 2011) or Gergen (2010), who deals with the uncertainty in relation to the level of penalties for non-payment of taxes.

To summarise above mentioned, while there is quite a large amount of literature on uncertainty in general, the number of publications concerning tax certainty is very low. However, studies that touch this topic mostly agree on fact that tax uncertainty distorts behaviour of agents and thus is not socially beneficial nor desirable. The Lawsky (2013) approach is interesting, who models the process of tax payments and the consequences of non-payment of taxes under conditions of uncertainty, but it is a standard model that does not have the ambition to capture the entire tax system with more sophisticated methods.

Of course, we cannot ignore the fact that there also exist few studies rejecting negative effects of tax uncertainty. If we abstract from the legal explanations, there occurs a possibility that conclusions of

such studies may be drawn from methodologically wrongly executed analyses using wrong measure of uncertainty which is mostly based just on volatility of tax revenues. The derivation of the measure based on study of laws is necessary. Such measure may then be used to research the effects on behaviour of agents.

Measurement of legal uncertainty may be complicated in many ways. It is possible to use expert surveys to compare significance and frequency of changes of laws in the field of tax law on basis of their relation to similar changes in other fields of financial law or law in general, either within a country or across countries. However, it is necessary to investigate stability of legal system according to the legal force of particular laws. Different demands must be put on laws that make a part of constitutional legal order, different on other laws of higher or lower legal force.

The easiest way of the measurement is to watch the amount of amendments of laws that make a core of substantive tax law, i.e. especially laws that regulate particular types of taxes. It is also possible to watch the amount of amendments of procedural tax laws, or laws in related fields. In more sophisticated form, the analysis may be completed with the analysis of number of changes in particular paragraphs. Regarding the completion of law by courts, it is also useful to watch the consistency and stability, or the existence of the jurisprudence itself. Altogether, this may give at least tentative but still closer overview about stability and predictability of tax law. It is also possible to deal with certain selection of tax laws changes, e.g. to distinguish between essential changes that lead to rectification of a tax branch of law as a whole like recent change in Czech private law, and other changes.

We used more sophisticated approaches to the measurement of tax uncertainty that include both the quantitative as well as qualitative aspect. Our measure includes three key aspects – long-term aspect (systematic), medium-term aspect, and short-term aspect (operational). The systematic aspect is based on expert evaluation and decision if there was a very essential change in tax laws, e.g. similar to the recent recodification of private law, or essential change in related laws. The medium-term aspect covers very important, essential but not crucial changes in tax laws, e.g. those similar to implementation of flat tax rate of individual income tax in 2008, or electronic evidence of revenues in very recent time. The last aspect, operational one, includes analysis of particular substantive or procedural tax or related laws, meaning the number and significance of their amendments. Every tax change observed within the period 1993-2016 was categorised as general essential change, specific essential change, or other change (especially legislatively-technical). Essential change was understood as an amendment that led to the change in law (article, paragraph, etc.) that impacts effective tax rate, i.e. the construction of tax base across particular regulations. This means that it is such change that is typically common e.g. to all laws concerning various types of taxes. For example, it may be a change in statutory tax rate, or the number of allowances and credits, etc. Specific essential change is such change, that also affects effective tax rate but is, however, typical just for a certain type of tax. This may include e.g. depreciation conditions in case of corporate income tax, or the amount of turnover from which an entity is obliged to register for VAT. Other changes are considered not essential as they don't influence the effective tax rate. The overall tax uncertainty is then the result of the total aggregation of an indicator expressed as the number of fundamental changes in the tax legislation of the given type of tax and an indicator expressed as the weighted sum of the fundamental and other changes in the tax legislation. The results of first analyses using this unique indicator were also published in Konôpková, Machová (2017) and detailed methodology of its computation in Kotlán, Němec, Machová (2017).

IV. Canon of tax fairness

Tax fairness is probably the most important factor influencing the perception of taxation and its distortion effects. The concept of fairness as such is thus a very debated and ambiguous issue, which is subject to many controversies in both the historical and the contemporary context. The key studies to be mentioned in this context include e.g. Gaisbauer et al. (2015), which deals with the philosophical concept of taxation. It primarily focuses on the fairness of the very existence of taxation. However, it

also deals with a fair tax system design and fairness in the case of individual types of taxes. It deals with property taxes, excise taxes and income taxes and examines whether and for what reasons some of these taxes should be preferred. The categorization consisting in two basic approaches (see e.g. Van Herwaarden, Dekam, 1983 on the one hand, and Beck, 1983 on the other) can be regarded as established. The first one is the benefit principle, which can be rather seen as liberal and not extensively applied, particularly in Europe. The second is the ability-to-pay principle, which is more common and more acceptable, especially for left-wing governments.

Fair taxes can be regarded as those which are based on the benefit principle in terms of the utility from the consumption of public goods. This principle of tax fairness assumes that a situation can be regarded as fair if, for a given agent, a higher consumption of public goods is subject to higher taxation. It is mainly critical to determine the share of consumption of public goods in terms of the characteristics of features such as non-excludability and indivisibility and the related free-rider problem (see e.g. Carpenter, 2007). It is also quite difficult to determine whether there is a higher consumption of public goods among high-income groups, also with regard to ensuring some, primarily public, goods in the form of private goods (see e.g. Cherchye, De Rock, Platino, 2013). The benefit principle is closely linked to the concept of social welfare and utility. Kaplow (1995) deals with the utilitarian approach to taxation and maintains that tax systems are mostly built on anti-utilitarism, which is justified by the fact that utilitarian approach is not sufficiently egalitarian and can disrupt horizontal equity. Kaplow notes, however, that this justification is totally incorrect, at least in the case of economic policy authorities, who believe in the Pareto principle, the observance of which is contrary to all rules ensuring tax fairness.

The other concept of fairness is based on the idea that a tax system can be considered fair if it is based on the ability-to-pay principle and it is fair if the level of taxation for individual actors is determined by their ability to pay. According to this principle, the basic criterion of tax fairness is that each citizen should have equal opportunities to achieve self-realization, i.e. to maximize their potential (Repetti, 2008). It is also essential that everyone have equal access to democracy, i.e. to voting. If the tax system is designed so that it will respect these two criteria, then it will lead not only to fairness, but also to greater efficiency. These principles are then better reflected by a tax system based on progressive revenue taxes rather than a system based on excise taxes. Sugin (2010) criticized, to some extent, the ability-to-pay principle, primarily because he believes that fairness and the related equal opportunities can also be achieved by operation of institutions other than tax institutions and believes that the necessity to apply the ability-to-pay principle is determined by the wealth of society and its degree of inequality.

In addition to the above categorization, it is very important to mention other determinants of tax fairness. The perception of tax fairness appears to be the key factor. As well as in other areas, such as the perception of corruption or tax uncertainty, it seems important to relativize the actual tax fairness and its perception. Cornelissen, Himmler, Koenig (2013) provide an overview of literature showing that when people are aware of unfairness or the violation of any rules, it has a direct effect on their behavior in the area where the unfairness occurs. In the area of taxation, entities restrict activities where they feel lack of tax fairness and increase optimization or tax evasion.

Koenig, Wagener (2013) postulate that if labor is taxed more than capital, it leads to people feeling that it is unfair, which undermines the usually applied principle that capital should not be taxed at least in small open economies. If this perception of unfairness is high, it leads to higher capital taxes, lower labor taxes and lower endogenous government spending. Cuccia, Carnes (2001) describe the effects of the complexity of the tax system and the perception of tax fairness. A tax measure is perceived as unfair if it is complex in comparison with another measure which is not complex and still brings certain advantages to someone.

Studies examining the perception of tax fairness typically use different questionnaire surveys to obtain primary data, which are further processed using simple statistical methods. These studies include e.g. Wenzel (2002), Liebig, Mau (2005), Rawlings (2003), or Eichfelder, Kegels (2014), to

name a more recent study. We describe alternative possibilities of tax fairness measurement in detail in Kotlán, Machová (2015). According to that study, the approximation of tax fairness based on the ability-to-pay principle should use an indicator, which is calculated as the absolute value of the percentage decline in the Gini coefficient through taxation, which best reflects the progressivity of the tax system in the case of households. The approximation of the benefit principle then uses the indicator of the ratio of corporate tax rate to collective service spending.

V. Discussion on selected results of empirical analyses

Our contemporary research includes two directions of empirical analyses. The first group of analyses deals with the issue of mutual relationship between our indicators described above that express the level of fulfilment of tax canons, or good tax system principles. The second group of analyses includes estimations of the impacts of changes in the taxation indicators on behaviour of agents and thus on the economy or society.

In Konôpková, Machová (2017), the results of the analysis of the relationship between the perception of tax burden including ease of paying taxes and efficiency of their collection (WTI) and tax uncertainty in the period 2002-2016 are presented for the case of the Czech Republic. They show that the tax burden and its perception by corporations are likely to be negatively affected by often changes in tax legislation. This concerns not only the corporate income tax, but also the VAT. Rather surprising were the results concerning personal income taxes where the correlation was proved to be negative (the higher is the uncertainty, the lower is the perception of tax burden). This may be caused by the fact that although there were many changes in the legislation concerning personal income tax, they led to lower tax burden and it was also perceived as such by tax experts in fact. However, the correlation coefficient between overall uncertainty and personal tax burden was positive (although with lower statistical significance), which may confirm that other changes in tax legislation were raising the perception of tax burden also in case of households (e.g. the VAT).

We also estimated the impacts of tax fairness on economic growth in case of OECD countries in the period 2000-2012. The results of the analysis are published in Kotlán, Machová (2016) showing that following ability-to-pay principle negatively affects growth, and the effect is more serious than the effect of higher tax burden. On the other side, if the benefit principle is applied, the effect on growth is proved positive.

In Kotlán, Němec, Machová (2017), DSGE model with shadow economy is used to estimate the impacts of tax uncertainty on labour supply in the Czech Republic in the period 2002-2016. The negative impact of tax uncertainty in case of all types of taxes was confirmed when analysing the impulse-response functions of tax uncertainty. And in all cases, the labour supply deflects from the official to the shadow economy. Increasing tax uncertainty has therefore a very negative effect not only for direct but also for indirect taxes, and this legal uncertainty stimulates economic agents to behave lawlessly.

The results of our analyses so far indicate two important things. First, there exist statistically significant relationships between the indicators of tax canons fulfilment. However, the relationship is negative in some cases, which means that it may not be possible to reach all of them at the same time. Second, at least some of the tax canon indicators have statistically significant effects on behaviour of economic agents and thus must be considered when suggesting changes to tax system parameters (tax legislation).

VI. Challenges for future research

Our analysis has led us to the idea that achieving the desired level of fulfilment of all four tax canons may not be possible. Then there are other questions. If we cannot achieve a tax system that is efficient, simple, certain and fair, which of the tax canons should be preferred? Will the situation vary with different groups of countries? What characteristics are associated with the countries that should prefer each tax canon? What is the impact of the degree of fulfilment of particular canons on the general

equilibrium of the economy? Is it possible to achieve a Pareto-optimal situation, meaning that improving in the area of one tax canon will at least lead to a deterioration in the other, in order to avoid a distortive effect? Do we need to rethink the tax canons according to Smith? The answer to all these questions will be the subject of our further research, which will be based on the inclusion of all variables reflecting tax canons into the DSGE model for the Czech Republic.

VII. Conclusion

The aim of this paper was to sum up and discuss our results so far in the field of good tax system principles, measurement and consequences of changes of the degree of their fulfilment, and to outline possibilities for the future development of our research. Taxation is usually seen as a kind of necessary evil that serves to financially secure the provision of public goods and redistribution of wealth on the basis of the principle of solidarity. However, already Adam Smith has formulated several principles of good taxation referred to as tax canons, and he has shown that tax efficiency, ease of paying taxes, tax certainty and tax fairness do matter. It is generally accepted that in case of high tax rates, substitution effect causes lower tax revenues in sense of the Laffer Curve. But while many empirical studies in recent years have dealt with estimations of the right level of taxation that would be effective and would support economic growth, those aspects affecting the substitution effect have remained ignored. These aspects of taxation, nevertheless, influence the perception of taxation, i.e. the tax mentality of people. If they see the taxation in their country fair, predictable and effective, they may have no need to change their behaviour, and thus the substitution does not happen even in case of higher tax rates. But is it really possible to reach such an ideal tax system? In this paper, we discuss the results of several of our analyses to show that it is rather not possible. Thus, we have to research concrete links between particular tax canons and the degree of their fulfilment to find some kind of optimal mix of them for various types of countries (these homogeneous groups of countries must also be defined) that will cause the lowest degree of unwanted distortions and inefficiencies in economies. If we understand economics as a social science, the results of such research may be more valuable than standard quantitative analyses, as they will help us to better understand the behavioral responses to changes in setting the parameters of the tax system.

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