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The restructuring of the fiscal equalization system in Croatia*

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Abstract

The aim of this paper is to propose a model of fiscal equalization in Croatia. This paper tests the hypothesis of a lack of effectiveness of the existing fiscal equalization model compared to a model that would be based on alleviating the difference in the potential to collect revenue from the personal income tax and surtax. Fiscal inequalities of local government units are determined first under the current equalization system by calculating the Gini coefficients and graphically presented with Lorenz curves. Thereafter, a distribution of equalization grants is simulated based on the new (proposed) model. The effectiveness of the proposed model in alleviating the fiscal inequalities is determined in relation to the effectiveness of the current equalization system. It was found that the model based on equalizing the difference in the capacity to collect revenue from the personal income tax and surtax alleviates inequalities in fiscal capacities of local government units much better than the existing system at the same cost. The main conclusion is that the fiscal equalization in Croatia should urgently be redesigned in order to improve efficiency and fairness, but also the transparency and credibility of the equalization system.

Key words: *local government units, fiscal inequalities, fiscal equalization, Gini coefficient, Lorenz curve, Croatia*

JEL classification: *H77, D63*

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1. Introduction

Fiscal equalization in Croatia has, so far, been carried out through the personal income tax (PIT) revenue sharing and distribution of grants from the central government budget. However, criteria for tax sharing and allocation of grants are controversial. Preferential status in the fiscal equalization is granted to local government units (LGUs) in the areas of special state concern (ASSC) as well as in hill and mountain areas (HMA). Given the fact that the ASSC and HMA status does not rely on fiscal but mostly geographic criteria, the fiscal equalization policy conducted in this way can hardly be effective in mitigating local inequalities. Because of a questionable effectiveness and a lack of long-term strategic alignment of the existing system of tax sharing and distribution of central government grants, a restructuring of the fiscal equalization model might be beneficial for alleviating fiscal inequalities in Croatia.

This problem will be dealt with in this paper through testing *the hypothesis* of a lack of effectiveness of the existing fiscal equalization model compared to a model that would be based on alleviating the difference in the potential to collect revenue from the PIT and surtax. The paper proposes a new equalization model for alleviating fiscal inequalities between LGUs (cities and municipalities). However, if proved successful, the model could also be applied at the regional level (to mitigate fiscal inequalities between counties).

The second chapter presents a review of the theoretical and empirical literature dealing with fiscal equalization. The third chapter proposes a new fiscal equalization model and presents its main characteristics (basic objectives, funding, strategic targets and fiscal instruments for its implementation). The fourth chapter analyses the effectiveness of the proposed model, whereas the fifth chapter discusses results and implications of the introduction of the new model. The sixth chapter is the conclusion.

2. Literature review

The effectiveness of the fiscal equalization system in Croatia has already been dealt with in (Bronić, 2008) but only at the county (regional) level, whereas (Bajo and Bronić, 2007) demonstrated that the use of fiscal instruments in Croatia is not associated with the fiscal capacity of LGUs. These findings hinted that the fiscal equalization system in Croatia is inadequate and should be changed. However, finding an optimal design of the equalization system is not an easy task. The proposed (new) fiscal equalization system should be amended according to the good practices of other countries but taking into account national particularities.

Fiscal equalization systems have been studied extensively creating an almost non-exhaustive list of works on fiscal equalization in particular countries. Just to mention a few – (Schneider, 2002) deals with fiscal equalization in Austria, (Simon-Cosano et al., 2013) in Spain, (Gonçalves and Pinho, 2005) in Portugal, (Giarda, 2004) in Italy, (Johansson, 2003) in Sweden, (Verdonck et al., 2009) in Belgium, (Kalb, 2010) in Germany, (Boerboom and Huigsloot, 2007) in the Netherlands, (Žigienė, 2009) in Lithuania and (Balás and Hegedüs, 2001) in Hungary.

There are also numerous comparative studies (Blöchliger, et al., 2007) for OECD countries, (Bajo and Primorac, 2013) for EU countries, (Dabla-Norris, 2006) and (Slukhai, 2003) for transition countries, (Peteri, 2006) for South East European countries, (Trasberg, 2004) for Baltic countries and (Shah, 2006) for industrial countries.

Vast theoretical and empirical literature on fiscal equalization has still not reached the consensus on the optimal design of the fiscal equalization system that would be universal and serve as a benchmark for all fiscally decentralized countries. However, arguments in favour of certain characteristics of the equalization system are stronger than those against. Although fiscal equalization systems can be characterized in many ways, basic characteristics of the equalization system include: approach to fiscal equalization (general, asymmetric, conditional and specific), aim of equalization (equalization of fiscal capacities and/or fiscal needs), level of equalization (full vs. partial), financing of the equalization system (horizontal vs. vertical) and fiscal instruments used for equalization (grants vs. revenue sharing mechanisms).

Spahn (2007) distinguishes four approaches to fiscal equalization: general, asymmetric, conditional and specific approach. Under the general approach all LGUs are treated in the same way and equalization is carried out according to the unique formula, regardless of the different characteristics of the LGUs (administrative status, devolved competences, level of development, etc.). In an asymmetric approach, there are special arrangements for a small number of LGUs whose revenue-collecting capacity is in a positive or a negative way influenced by their administrative status. Accordingly, those LGUs may either be in a privileged or an underprivileged position in the equalisation system. The conditional approach is characterized by the fact that LGUs apply for various programs that focus on incentives and production rather than redistribution between LGUs, whereas the idea behind the specific approach is to select certain LGUs in a group that receives privileged status based on selected economic criteria (significantly below or above the national average).

Although it is still not completely clear whether fiscal equalization programs should be aimed at equalizing fiscal capacities or fiscal needs (or both), experienced and mature states generally suggest that equalization policies should focus on the

equalization of fiscal capacities, whereas fiscal needs should be treated with other instruments, e.g. conditional grants (Shah, 2007). Moreover, Shah concludes that equalization of fiscal needs is complex and rather controversial because of the necessarily subjective judgments and the use of imprecise analytical methods. Even if the fiscal needs can be accurately measured, there is a conceptual problem in their equalization because even in unitary states the supply of public goods among LGUs differs (Boadway, 2007). If it is more expensive to provide public services in rural than urban areas, it would be ineffective to neutralize these differences in the cost of supply (Shah, 2007). Boadway (2004) concludes that the choice of the equalization objectives depends on the degree of decentralization and revenue-collection authority (countries with large fiscal gaps should equalize fiscal needs, while fiscal capacities should be equalized when LGUs have considerable authority in revenue collection or centrally-collected revenue is transferred to LGUs through the revenue sharing mechanisms).

When it comes to financing – there are generally two types of equalization. The first type is based on the redistribution from richer to poorer LGUs, whereas the second one relies on the distribution (allocation) of grants from the central government. The first one has been referred to in the literature as fraternal or Robin Hood (Shah, 2007), horizontal (Dafflon, 2007) or net equalization system (Boadway, 2007), whereas the second one is known as paternalistic (Shah, 2007), vertical (Dafflon, 2007) or gross equalization system (Boadway, 2007). In a horizontal equalization system, the amount of grants for LGUs can be positive or negative (for richer LGUs which provide assistance to poorer ones), while in gross equalization system the central government collects enough revenue to be able to finance (allocate) equalization grants.

Properly designed equalization system can completely mitigate fiscal inequalities, but complete equalization can have unintended consequences. It can alter the competitive behaviour and eliminate the flow of resources among LGUs (Buchanan and Wagner, 1970). Dafflon (2007) concludes that the full (complete) equalization is undesirable because it could reduce the tax effort and discourage LGUs in the development of their tax base. Namely, LGUs might lose incentive for collecting the tax revenue under the assumption that their underperformance will be compensated through the equalization system.

Fiscal equalization policies can rely on two main fiscal instruments – central government grants or revenue sharing arrangements. Through revenue sharing the central government shares the part of the tax and/or non-tax revenue with LGUs (i.e. LGUs have a privilege to retain part of the revenue collected in their area). With the uniform (general) distribution scheme, the tax sharing does not contribute to the alleviation of fiscal inequalities (Buchanan and Wagner 1970) since all LGUs receive relatively equal part so richer LGUs receive more in absolute terms than poorer ones. On the other hand, central government grants can directly support the

financially weaker LGUs with the financial amounts that can differ both in absolute and relative terms. Dafflon (2007) points out that equalization grants should be unconditional and should not be mixed with other (conditional) grants.

3. Model

Fiscal equalization in Croatia is based on both the PIT sharing and the distribution of central government grants. LGUs in the ASSC and HMA enjoy the preferential treatment in the equalization system. According to the Law on Financing of Local and Regional Self-government (OG 117/93, 33/00, 59/01, 107/01, 117/01, 150/02, 147/03, 132/06, 73/08 and 25/12), those LGUs retain 90% of the PIT collected in their area, while 10% belongs to the county. For other LGUs the PIT revenue sharing scheme significantly differs – LGUs retain only 56.5% of the PIT, 16% belongs to the county, 12% is intended for financing of decentralized functions and 15.5% for equalization fund for decentralized functions (or capital projects – for LGUs on islands with an agreement on joint financing of capital projects for the development of the island).

Besides tax sharing benefits, LGUs in the ASSC and HMA receive the majority of current grants distributed from the central government budget. Those include current grants of the Ministry of Finance (MoF) to cities in the ASSC (category I and II)[2], current grants as a substitute for the corporate income tax (CIT) and grants through the PIT return. Current grants of the MoF to counties are allocated to counties that further distribute funds to LGUs in their area according to their own individual criteria. Equalization grants for decentralized functions are allocated to LGUs that have assumed the obligation to finance the decentralised functions but do not obtain enough resources from the additional share in the PIT to ensure that these functions are financed at the minimum financial standard. Since only a limited number of LGUs, with higher fiscal capacities, have assumed the obligation to finance the decentralised functions, this grant probably cancels the equalizing effect of other grants.

Given the current complexity and questionable efficiency of the fiscal equalization system and bearing in mind the imperative of simplicity, the proposed equalization model for Croatia is based on the general approach. Accordingly, the basic assumption of the model is the abolition of the privileged position in the tax sharing system for the ASSC and HMA (i.e. the introduction of a single PIT sharing arrangement according to which LGUs retain 56.5% of the PIT collected in their territory). The proposed model additionally assumes retention of the currently

[2] Three different categories of ASSC have been established in Croatia.

valid maximum surtax rates (municipalities up to 10%, cities with less than 30,000 inhabitants up to 12%, and cities with over 30,000 inhabitants up to 15%). City of Zagreb, because of its size, but also the administrative duality (city and county) has to be excluded from the equalization system. Slack (2007) points out that there must be a difference between local units of different sizes and administrative structure as – if that would not be the case – the standard for fiscal capacities and needs would be established at the level of the least developed and least capable units.

Arguments against equalization of fiscal needs – already outlined in the theoretical part of the paper – are sufficiently compelling that the proposed model focuses exclusively on the equalization of fiscal capacities (not the fiscal needs). For example, Canada – which has a very sophisticated system of equalization of income – does not mitigate disparities in fiscal needs at all (Boadway, 2007). Australian fiscal equalization program is – because of the introduction of a comprehensive mechanism of fiscal needs equalization – considered the most complex and most controversial program with the least political consensus (Shah, 2007). Spahn (2007) further supports this claim saying that Australian equalization system has high requirements in terms of information and the necessary technical knowledge, which make it almost impossible to implement in countries with the scarce data and weak administrative capacity. Therefore, the objective of the proposed fiscal equalization system is to mitigate disparities in fiscal capacities of LGUs.

Reduction of disparities in LGUs' fiscal capacities may result in a reduction of the tax effort if LGUs realize that central government will, through the fiscal equalization system, make up the lack of revenue to the desired level (required minimum). In addition, there is also the risk of a harmful tax competition because with the equalization of realized income LGUs could reduce the tax burden (surtax) in order to attract residents (tax base), knowing that the loss of revenue will be compensated through the fiscal equalization. These problems can be solved in a way that the equalization system equalizes potential fiscal capacities and not the actual (realized) revenue (Vigneault, 2007). Given the need to simplify, but also the structure of LGUs' revenue dominated by revenue from the PIT and surtax, the proposed equalization model will mitigate local disparities caused by different capacities of collecting the PIT and surtax. In accordance with the proposals for the elimination of potentially adverse effects, the system will be aimed at maximum capacity each local unit is able to achieve, in order to compensate weaker LGUs for the difference in capacity (potential) to realize tax revenue, rather than the differences in the achieved level of income.

Full fiscal equalization essentially eliminates the benefits of decentralization because it may ultimately result with an identical supply of public goods in all LGUs which would reduce the possibility for residents to express their preferences by inhabiting the LGUs which best suit their needs. Therefore the proposed equalization system only partially alleviates inequalities in fiscal capacities. Given

that the proposed equalization system compensates for the differences in the potential for collecting the PIT and surtax revenue, even complete equalization of this potential would, in general, still have the characteristics of a partial equalization of fiscal capacities.

Taking into account the structure of the local sector in Croatia, the approach to equalization, fiscal equalization aims (targets), but also the possible adverse effects of horizontal fiscal equalization system (see Vigneault, 2007 for a detailed elaboration), the vertical fiscal equalization system is proposed. In particular, the fiscal equalization system in Croatia should be funded from the central government budget. In the absence of funding, it is better to raise additional funds by increasing the fiscal gap than to base the equalization system on the horizontal redistribution between LGUs.

Instruments that would serve the proposed system would be current general (unconditional) grants from the central government. An effective system of fiscal equalization based on the tax revenue sharing would imply a special (individual) distribution scheme for each LGU that would, in the same time, be subject to the annual changes in line with the changes in the fiscal capacity of LGUs. Implementation of such a system in practice would be pointless, so current general grants (distributed according to the appropriate criteria) are certainly the most effective instrument for mitigating fiscal disparities.

The system should be financed with the funds currently distributed through the current grants of the MoF to counties, current grants of the MoF to cities in the ASSC I and II, current grants as a substitute for the CIT and grants through the PIT return as well as the funds that would become available with the abolishment of the preferential status of certain LGUs in the PIT revenue sharing (i.e. the transition to the unique system of the PIT revenue distribution). If necessary, it is also possible to reallocate part of other sources with questionable effects (e.g. part of the funds intended for equalization grants for decentralized functions).

The proposed system of fiscal equalization is a general system of partial equalization of fiscal capacities through equalizing the potential of collecting revenue from the PIT and surtax. All local units are equal in financing (except the city of Zagreb, which is excluded from the equalization system) – there are no favoured areas. Equalization is carried out vertically – through current general (unconditional) grants from the central government budget.

To maintain adequate (average) level of tax effort, the potential of collecting revenue from the PIT and surtax could be assessed with the regression model. In its simplest form, collected PIT may be dependent, and the gross income of the population independent variable. That model would be fairly trivial. The complexity of the final model depends on the availability of data and the complexity of

assessment methodologies which could, for these purposes, be effectively applied to the relevant authorities. The introduction of additional variables would increase efficiency, but also the complexity of the model. Normalization of variables with the population would enable more relevant assessment as would the introduction of the additional variables such as inflation, real GDP growth and other relevant indicators. In addition, if the model would rely on variables normalized by population it is very likely that the historical data on gross income and PIT collected *per capita* could have a good predictive potential.

However, the model does not have to be based on complex assessments, but may rely on estimates of the LGUs instead (subject to certain limitations and requirements in terms of accountability). Since the way of assessing the PIT revenue is (in this context) primarily administrative and technical issue, further elaboration would be beyond this study. In simulating the distribution of the proposed equalization grants and assessing the effectiveness of the proposed model the study relies on real value of the PIT revenue in each LGU in 2010.

Table 1: The capacity (potential) of collecting revenue from PIT and surtax

Category of LGUs	Potential estimation formula
Municipality	$CAP_i = EPITR_i \times 0.665/POP_i$
City (less than 30,000 inhabitants)	$CAP_i = EPITR_i \times 0.685/POP_i$
City (more than 30,000 inhabitants)	$CAP_i = EPITR_i \times 0.715/POP_i$

Note: CAP denotes per capita capacity of collecting revenue from the PIT and surtax, EPITR estimated (collected) PIT, POP population, and i local government unit i.

Source: Author

The potential (capacity) of collecting revenue from the PIT and surtax *per capita* can be calculated as the sum of estimated PIT revenue remaining to LGU after tax sharing (56.5% of total estimated PIT revenue) and potential surtax revenue that the LGU could collect by introducing a maximum allowable surtax rate.[3] Since the base for both the potential PIT and surtax revenue is total estimated (collected) PIT revenue *(EPITR)*, the *per capita* capacity of collecting revenue from PIT and surtax can be calculated as presented in table 1. Numbers in the numerator represent the coefficients for calculating the potential of collecting revenue from the PIT and surtax for each category of LGUs. Under the assumption that each LGU retains 56.5% of the PIT collected in its area and given the fact that the maximum available rate of surtax differs for those three categories of LGUs, the potential of collecting

[3] Equalization grants compensate for the difference in the (maximum) tax potential (regardless of the actual surtax rate or the tax effort that reflects the efficiency of LGUs in the collection of the tax revenue).

revenue from the PIT and surtax is a product of the *EPITR* and the respective coefficient for each category.

Equalization grants are determined by calculating the deviation of the *per capita* capacity (potential) of collecting revenue from the PIT and surtax from the benchmark, which is determined with respect to the available financial capacity of the equalization system. The benchmark can, for example, be determined by multiplying the average capacity *per capita* and the coefficient *c*. Coefficient *c* can be fixed permanently or periodically adjusted to the size of the equalization fund.

The amount of equalization grant for each LGU can be written as:

$$EG_i = POP_i(CAP_{\bar{i}} \times c - CAP_i),\ i = 1, ..., 555,$$

where:

EG_i – denotes the equalization grant to the LGU *i*,

POP_i – population of LGU *i*,

$CAP_{\bar{i}}$ – average national *per capita* capacity of collecting revenue from the PIT and surtax,

c – coefficient for determining the equalization benchmark,

CAP_i – *per capita* capacity for collecting revenue from the PIT and surtax of LGU *i*.

Since the proposed equalization system is based on the equalization grants paid out from the central government budget – and not on the redistribution of funds from richer to poorer LGUs – there are no negative equalization grants that would imply the obligation to pay a certain amount to the equalization fund (for richer local units). A negative value of the equalization grant determined with the model indicates only the ineligibility for receiving the equalization grants from the central government budget.

To assess the potential degree of equalization that could be achieved with the proposed model in place, first the potential financial capacity of the fiscal equalization system has to be determined. Since the main objective of the proposed new equalization system is efficient allocation of financial resources currently intended for equalization, it will be assumed that the financial potential of the new equalization system equals potential of the existing one.

Table 2: Financial capacity of the equalization system in 2010 (mil. HRK)

Source of financing	2010
Current grants of the Ministry of Finance	89
Current grants as a substitute for the corporate income tax	232
Grants through the personal income tax return	605
TOTAL I	926
Joint capital projects on islands	42
Equalization fund for decentralized functions HMA (15.5%)	57
Equalization fund for decentralized functions ASSC (15.5%)	138
TOTAL II	1,163
Grants from equalization fund for decentralized functions	1,715
TOTAL III	2,878
Counties (6%+12% for dec. functions) from HMA	67
Counties (6%+12% for dec. functions) from ASSC	159
Total Counties (6%+12% for dec. functions)	226

Source: Author based on MoF's data

Assuming the abolition of the privileged position in the tax sharing system for LGUs in the ASSC, HMA and LGUs on the islands with an agreement on joint financing of capital projects for the development of the island – the current grants of the MoF, current grants as a substitute for the CIT and grants through the PIT return could be directly reallocated to the new system of fiscal equalization. Financial potential of the new (proposed) system can (under that assumption) be calculated as the sum of all items, or at least one of the subtotals from table 2.

In 2010 LGUs have, through current grants of the MoF, current grants as a substitute for the CIT and grants through the PIT return received HRK 926 million. Grants from the fund for decentralized functions amounted to HRK 1,715 million. Abolition of privileges for LGUs on the islands with an agreement on joint financing of capital projects for the development of the island would (according to the 2010 data) pour additional HRK 42 million to the new (proposed) equalization fund. Additionally, by eliminating the preferential treatment in the tax sharing system for LGUs in the ASSC and HMA and introducing the obligation of charging the equalization fund for LGUs located in these areas with 15.5% of the PIT revenue (as other LGUs do), the fund would gain another HRK 195 million.

In other words, the potential value of the equalization fund could amount to a total of slightly less than HRK 3 billion. It should be noted that – in addition to an increase of the equalization fund – the abolition of the privileged status in the tax

sharing for LGUs in the ASSC and HMA would also increase the financial (fiscal) capacity of counties whose budgets would gain the prescribed portion of the PIT revenue. Assuming that counties receive additional 6% of the PIT revenue (since according to the current tax sharing scheme they are entitled to 16%) and 12% for the decentralized functions, their budgets would (according to the 2010 data) increase for total HRK 226 million.

4. Empirical data and analysis

The effectiveness of the proposed model of fiscal equalization will be assessed by identifying disparities in fiscal capacities[4] of LGUs before and after the simulation of the new equalization grant. This will be done by calculating the Gini coefficients and sketching the Lorenz curves. The Gini coefficient ranges from 0 to 1 where 0 represents complete equality and 1 complete inequality. If the value of the Gini coefficient after applying the proposed equalization grant is lower than before – the proposed equalization system is more effective in alleviating the fiscal inequalities than the existing one and *vice versa*. Inequalities can also be displayed graphically with the Lorenz curve. As the curve lays closer towards the uniform distribution line inequalities are smaller.

Regardless of the theoretical justification and the economic soundness of the new proposed model, it is necessary to evaluate its performance and to analyse the possibilities and constraints of its application. Therefore, the effectiveness of the proposed model is tested below by comparing the fiscal disparities among LGUs after fiscal interventions in the existing (old) equalization system (baseline scenario) and the distribution of equalization grants based on the proposed (new) model (four simulations based on the financial capacity of the equalization fund).

Although the proposed (new) equalization model alleviates fiscal inequalities through equalizing the maximum potential of collecting revenue from the PIT and surtax, for illustration and assessment of its effectiveness, below are the effects of a model that directly alleviates disparities in fiscal capacities of LGUs. More precisely, the equalizing grant in this model is not based on the capacity of collecting revenue from the PIT and surtax, but on the real fiscal capacities of LGUs.

[4] Fiscal capacity of LGUs is determined as a *per capita* income of LGUs reduced by aid from abroad and from the entities within the general government and a portion of income obtained through equalization grants for decentralized functions.

Table 3: Efficiency of the model that directly equalizes fiscal capacities of LGUs in 2010

Simulation	Equalization fund (mil. HRK)	Gini coefficient
I	0	0.4000
II	926	0.2316
III	1,163	0.2096
IV	2,878	0.1176
Baseline	2,878	0.3528

Source: Author

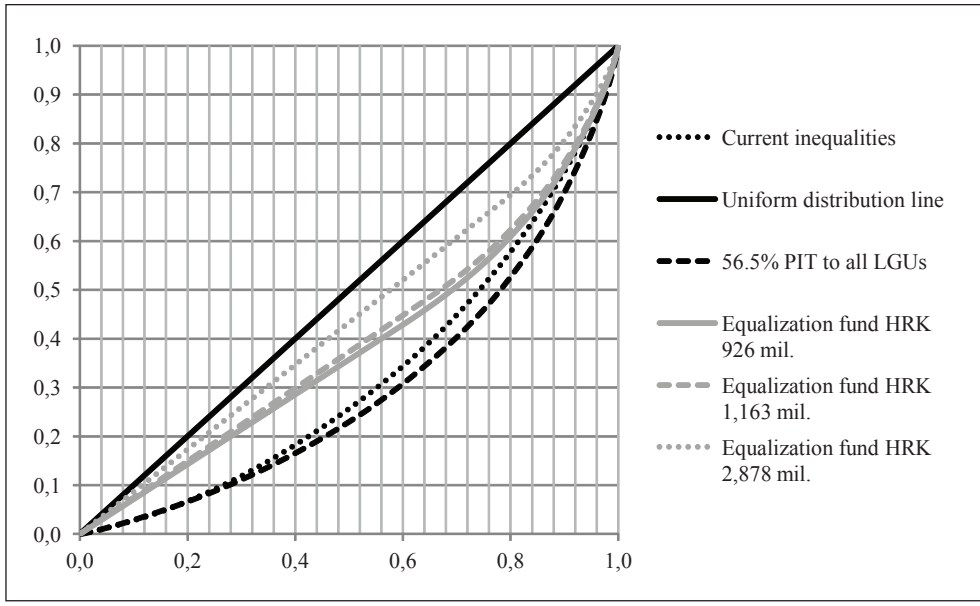
Four separate simulations were conducted. The first one (simulation I) is a starting point and presents disparities in fiscal capacities of LGUs before equalization grants (after the abolition of the preferential arrangements in the tax sharing system but prior to allocation of new equalization grants). Further on, the inequalities (Gini coefficients) were calculated after the distribution of equalization grants according to the model which directly equalizes LGUs' fiscal capacities with the total financial capacity of the equalization fund of HRK 926 million (simulation II), 1,163 million (simulation III) and 2,878 million (simulation IV). Proposed values were not determined arbitrarily but reflect the values of the subtotals from table 2. Baseline scenario represents current inequalities under the existing tax sharing arrangements after the distribution of all central government grants currently intended for equalization.

Before interpreting the results, it should be emphasized that the direct equalization of fiscal capacities is the most effective way of mitigating disparities in LGUs' fiscal capacities. It is therefore not surprising that the fund of HRK 926 million (which is the sum of only the first three grants from table 2) provides a much better effect in alleviating fiscal inequalities than the current equalization system (baseline scenario). With equalization fund corresponding to the sum of all the values in table 2, the fiscal disparities among LGUs in Croatia would be reduced to a minimum (simulation IV).

Lorenz curves further confirm these findings. It is obvious that the Lorenz curves, after the distribution of grants under the fiscal equalization system that directly equalizes fiscal capacities of LGUs, lay closer to the uniform distribution line than the Lorenz curve for the distribution of fiscal capacities under the existing fiscal equalization system. Disadvantages and constraints of the model that directly alleviates disparities in LGUs' fiscal capacities were elaborated in the previous chapters. Particularly, there are several reasons why that system needs to be amended. The most important is the fact that in such form it ignores the potential risks that may arise from the harmful tax competition, reduced tax effort or disincentives to build the

tax base. Therefore, the fiscal equalization system should be based on the equalization of maximum (potential) fiscal capacity (as proposed with the new model presented in the third chapter), not the fiscal capacity that LGUs realize.

Figure 1: Lorenz curves before and after distribution of grants under the fiscal equalization system that directly equalizes fiscal capacities of LGUs in 2010



Source: Author

Table 4 provides Gini coefficients for the distribution of fiscal capacities of LGUs under the new (proposed) equalization model given different capacities of the equalization fund. Again, four separate simulations are conducted.

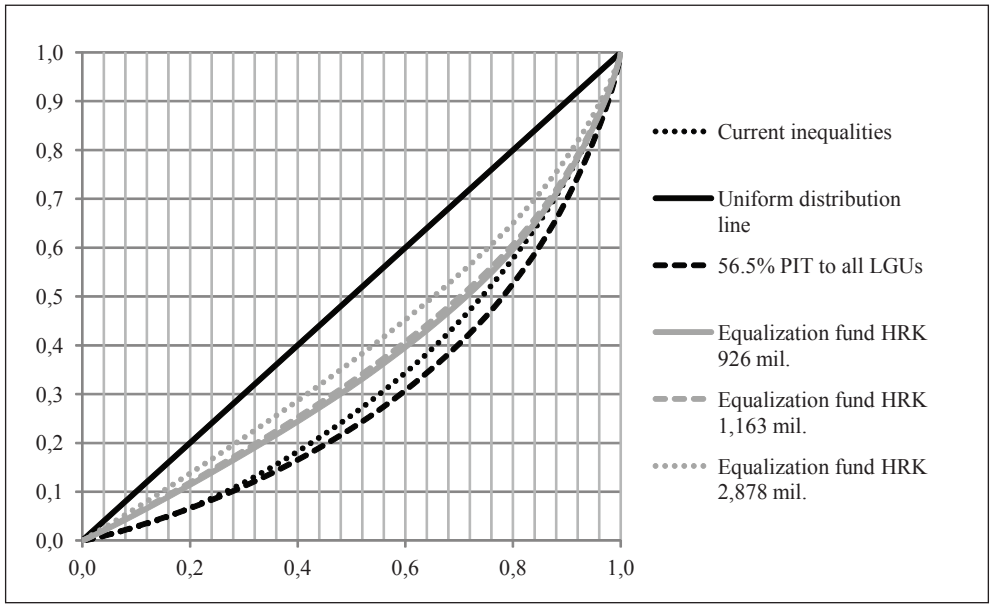
Table 4: Efficiency of the new (proposed) equalization model for 2010

Simulation	Equalization fund (mil. HRK)	Gini coefficient
I	0	0.4000
II	926	0.2791
III	1,163	0.2647
IV	2,878	0.2040
Baseline	2,878	0.3528

Source: Author

The first simulation presents fiscal inequalities after the abolition of the privileged status in the tax sharing system for LGUs in the ASSC, HMA and islands with an agreement on joint financing of capital projects for the development of the island. In other words, it is a simulation of fiscal inequalities before new equalization grants (the financial capacity of the equalization system is HRK 0). The distribution of the new equalization grants according to the proposed model in the amount of HRK 926 million (simulation II) significantly reduces Gini coefficient. In fact, new equalization grants in the amount of HRK 926 million would be much more effective in alleviating fiscal inequalities than the current equalization system with the fund of almost HRK 3 billion (baseline scenario). This proves the effectiveness of the proposed model in mitigating fiscal inequalities and its superiority over the existing fiscal equalization system and fiscal instruments currently used. An increase in the financial capacity of the fund to HRK 1,163 million or 2,878 million would further reduce inequalities.

Figure 2: Lorenz curves before and after distribution of grants under the new (proposed) fiscal equalization system in 2010



Source: Author

The proposed fiscal equalization model indirectly alleviates inequalities in LGUs' fiscal capacities – through mitigating the differences in the capacity (potential) of collecting revenue from the PIT and surtax. Therefore, it is less effective than the previous model that directly alleviates inequalities in fiscal capacities, but because of the potential harmful effects of the previous model, it is a preferable choice. Its

effectiveness is even more evident when compared with the existing equalization system which is, by the way, much more complex, administratively demanding and extremely expensive.

5. Results and discussion

The benefit from the introduction of the proposed equalization system for each LGU is directly dependent on the size of the equalization fund. Given that the existing equalization system proved to be inferior to the proposed model, the minimum requirements for the introduction of the new fiscal equalization system would involve the reallocation of the current MoF's grants, current grants as a substitute for the CIT and grants through the PIT return to the equalization fund. This also implies the abolition of the preferential financial arrangements for LGUs in the ASSC, HMA and LGUs on the islands with an agreement on joint financing of capital projects for the development of the island. In such circumstances, the potential equalization fund in 2010 would amount to HRK 1,163 million. It should be noted that this scenario assumes retention of the existing allocation of resources from the equalization fund for decentralized functions (HRK 1,715 million).

The introduction of the proposed equalization system would significantly reduce fiscal inequalities between LGUs, but would also affect the structure of local government budgets. The structure of the budgets would be subject to change primarily due to the introduction of a single PIT sharing scheme, but also due to the redistribution of grants from the central government budget.

Abolition of the privileged position in the PIT sharing for LGUs in the ASSC, HMA and LGUs on the islands with an agreement on joint financing of capital projects for the development of the island would immediately cause a reduction of local government tax revenues for all 280 LGUs in these areas. At the same time, the effect of these changes for remaining 275 LGUs would be neutral. As for the redistribution of grants from the central government budget the situation is somewhat more complicated. Out of total 555 LGUs (excluding the city of Zagreb) 134 LGUs would be worse off (mostly LGUs from ASSC and HMA)[5], while 421 LGUs would end up better off or unaffected by the redistribution. In other words, the amount of the equalization grant for 421 LGUs would be the same as or greater than the sum of grants they currently receive through the current MoF's grants, current grants as a substitute for the CIT and grants through the PIT return.

[5] Weaker position does not mean that those LGUs would cease to receive grants, but the amount of grants would have been lower compared to the funds those LGUs currently receive through the current MoF's grants, current grants as a substitute for the CIT and grants through the PIT return.

The cumulative effect of the introduction of the new equalization system (the sum of the effects arising from the new allocation of the PIT revenue and the redistribution of grants from the central government) can be calculated by summing up the financial effects of the two parts of the equalization reform. Total cumulative effect of the reform would be negative for 192 LGUs (mostly from the ASSC and HMA), for 313 LGUs the effect would be positive, while 50 LGUs would not be affected by the reform.

Table 5: Net effect of the implementation of the proposed equalization system in 2010.

	Tax sharing			Distribution of grants			Total (cumulative) effect		
Effect	Pos.	Neg.	Neut.	Pos.	Neg.	Neut.	Pos.	Neg.	Neut.
ASSC I	0	50	0	15	35	0	8	42	0
ASSC II	0	61	0	22	39	0	12	49	0
ASSC III	0	74	0	54	20	0	38	36	0
HMA	0	45	0	7	38	0	2	43	0
Islands	0	50	0	38	0	12	30	20	0
Other LU	0	0	275	223	2	50	223	2	50
Total	0	280	275	359	134	62	313	192	50

Source: Author

All LGUs that would be unaffected by the proposed equalization reform are currently outside the preferential areas and do not receive MoF's grants. LGUs that would benefit from the reform are mostly outside the ASSC, HMA and islands. It should be pointed out that the majority of LGUs in the ASSC I and II and HMA would be (in general) negatively affected with the reform, while the majority of LGUs in the ASSC III and islands would benefit from the new equalization system. This is expected given that the criteria for receiving the ASSC I and II and HMA status are mainly geographical in nature and should not represent a basis for the implementation of fiscal equalization policy.

The simulation used for identifying the net fiscal impact of the introduction of the proposed equalization system ignores grants from the equalization fund for decentralized functions that LGUs received in 2010 (HRK 1,715 mil.). However, in the future, the role of this fund should be thoroughly reviewed and redefined (i.e. the fund should be put into operation within the general fiscal equalization framework).

6. Conclusion

The results have confirmed the hypothesis of a lack of effectiveness of the existing fiscal equalization model compared to the model proposed in this paper. However, considering that the aim of the proposed (new) equalization model is alleviating inequalities in *per capita* potential of collecting the PIT and surtax revenue, the main limitation of the proposed model is the availability of data and the possibility of assessing the total PIT revenue collected in every LGU. There are numerous solutions to this problem already mentioned in the paper, but the reliance on LGUs' own estimates could be the simplest and the most transparent.

For the effective implementation of the fiscal equalization policy based on the proposed model, it is necessary to regularly (annually) analyse the financial performance of LGUs and conduct audit of the equalization system. It is also necessary to establish an independent body that will periodically assess the effectiveness of the equalization system and advise the Government in terms of a fine-tuning of the system. This body can include officials of the Ministry of Finance and the Ministry of Regional Development, representatives of NGOs, associations of LGUs and independent experts. Regular publication of reports on the effectiveness of the equalization system and transparent representation of the structure of the system as well as publication of data on obtained and predicted amount of equalization grants for all LGUs could further enhance the credibility of the equalization system.

In addition, the legislative framework for fiscal equalization (and LGU financing) needs to be improved. It is currently very fragmented, making it difficult to track and comply with regulations. Adoption of a special law on fiscal equalization would greatly ease the situation and contribute to the flexibility of fiscal equalization. Although the proposed equalization system relies exclusively on mitigating differences in fiscal capacities, further research should examine the opportunities and constraints of expanding the system to equalization of fiscal needs.

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Restrukturiranje sustava fiskalnog izravnanja u Hrvatskoj

Marko Primorac[1]

Sažetak

Cilj rada je predložiti model fiskalnog izravnanja u Hrvatskoj. U radu se testira hipoteza o nedovoljnoj učinkovitosti postojećeg modela fiskalnog izravnanja u odnosu na model koji bi se temeljio na ublažavanju razlika u potencijalu prikupljanja prihoda od prireza i poreza na dohodak. Izračunom Ginijevih koeficijenata najprije se utvrđuju nejednakosti u raspodjeli fiskalnih kapaciteta po stanovniku jedinica lokalne samouprave u postojećem sustavu izravnanja koje se prikazuju i grafički Lorenzovim krivuljama. Potom se provodi simulacija raspodjele pomoći za fiskalno izravnanje na temelju novog (predloženog) modela te se testira njegova učinkovitost u ublažavanju fiskalnih nejednakosti. Utvrđeno je kako model utemeljen na ublažavanju razlika u kapacitetu prikupljanja prihoda od prireza i poreza na dohodak u znatno većoj mjeri od postojećeg sustava ublažava razlike u fiskalnim kapacitetima jedinica lokalne samouprave uz isti trošak. Zaključak je da fiskalno izravnanje u Hrvatskoj hitno treba restrukturirati kako bi se poboljšala učinkovitost i pravednost, ali i transparentnost i vjerodostojnost sustava izravnanja.

Ključne riječi: *jedinice lokalne samouprave, fiskalne nejednakosti, fiskalno izravnanje, Ginijev koeficijent, Lorenzova krivulja, Hrvatska*

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