Macroeconomic and Distributional Effects of Efficiency-Driven Tax Reform Proposal

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In the study *Tax Policy in Serbia – Looking forward* we have suggested a revenue-neutral tax reform that would shift the burden from labor to consumption taxation by reducing social security contributions and increasing the VAT rate, along with increasing the progressivity of income taxation. The goal of the proposed reform is to support long-term economic growth and achieve a limited extent of income redistribution from high-earning workers to low-earning ones. Reducing fiscal burden on wages would stimulate employment and would increase price-competitiveness of Serbian producers, thus stimulating economic growth. Overall income redistribution effects of the proposed tax reform would be progressive in the short and medium-term since VAT increase would have proportional distributional effects and reducing fiscal burden on wages would have progressive distributional effects. Workers with lowest wages would benefit the most from the proposed reform, while workers with highest wages would suffer relative losses of a limited extent. The living standard of pensioners and other recipients of social transfers would remain unchanged. Thus, we have concluded that the proposed tax reform would not cause adverse distributive and macroeconomic effects in the short-term, while results from the relevant literature imply positive macroeconomic effects in the long-term. In the article published in *Economic Annals* #190, Matković and Mijatović present results from their empirical analysis which suggest that the proposed tax reform would cause adverse distributional and macroeconomic effects in the short-term. In this article we present evidence that challenges the validity of empirical results of Matković and Mijatović.

1. Introduction

The expected distributional and macroeconomic effects are an important factor when discussing any public policy, including tax reform proposals. In our study "Tax Policy in Serbia – Looking Forward" (Arsić et. al, 2010) we analyze economic benefits from efficiency-driven tax reform that would shift significant tax burden from labor to consumption taxation, by reducing social security contributions, making wage tax more progressive and increasing the VAT burden. The study relies on theoretical and empirical evidence from OECD (2010) and European Commission (2008) that such a tax reform would improve economic growth in the long-run. Furthermore, we have identified that the proposed tax reform would support macroeconomic stabilization and efforts to implement a sustainable post-crisis economic growth model suggested by Bajec et. al (2010), as well as reducing the extent of shadow economy and tax evasion.

Matković and Mijatović (2011) in their article „The effects of proposed tax changes on poverty and vulnerable groups in Serbia" analyze potential distributional effects of the Arsić et. al (2010) tax reform proposal on poverty and vulnerable groups in Serbia. Based on the CLDS microsimulation model, the authors estimate that the proposed tax reform would increase poverty by 0.5 percentage points. The authors also conclude that the proposed tax reform would have „negative distributional effects" and that the tax burden would be „shifted from richer to poorer population groups". Finaly, the authors state their belief that in the short-term the proposed tax reform „would probably bring about a decline in economic activity, due to dampened demand of the population and aggregate demand".

We believe that thorough analyses and open academic discussions are of crucial importance in establishing credible foundations for adopting economically optimal and socially adequate public policies. To this end, we would like to express our concerns with respect to the research methodology employed by Matković and Mijatović and to provide evidence that chalenges the validity of empirical results and policy conclusions that these authors have presented. Finally, based on the aforementioned evidence, we present an alternative view of the distributional and macroeconomic effects of the proposed efficiency-driven tax reform.

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The remainder of this article is structured as follows: In Section II we discuss the validity of the CLDS microsimulation model which Matković and Mijatović had used to analyze the distributional effects of the proposed tax reform. We believe that modeling inconsistencies we have identified – cast doubt on the integrity of empirical results that the authors have presented. In Section III we compare our estimates of the proposed tax reform distributional effects with the estimates of Matković and Mijatović. We show that Matković and Mijatović have based their conclusions regarding the tax equity of the proposed reform – on empirical estimates from an inadequate economic model. Furthermore, in order to support their estimates of the distributional effects, Matković and Mijatović have used typical tax system characteristics from developed western economies – which are significantly different from the actual characteristics of the existing Serbian tax system. We show that the results based on actual Serbian tax data, as well as the results from the extensive literature on lifetime tax incidence – are countrary to the conclusions presented by Matković and Mijatović. We present our analysis of the distributional effects, based on tax incidence estimates from actual Serbian data, which shows that Arsić et. al (2010) reform proposal would have progressive distributional effects and would reduce inequlity. In Section IV we present evidence that Matković and Mijatović conclusions regarding negative macroeconomic effects in the short-term – are based on inconsistent economic analysis. Consistent economic analysis suggests that the proposed tax reform would not cause adverse effects in the short-term, while results form the relevant literature indicate positive economic effects in the long-term. In the concluding Section V we summarize the comparative analysis of our results versus the results presented by Matković and Mijatović (2011).

2. Analysis of the CLDS microsimulation model validity

1. The reliability of empirical results crucially depends on the validity of the underlying economic model. The microsimulation model used by Matković and Mijatović to derive their empirical results – fares extremely poorly against actual Serbian economic data. While we acknowledge the fact that any model is necesarily an abstraction and simplification of reality, we believe that significant differences between the major outputs from the microsimulation model used by the authors and actual Serbian economic data – renders quantitative results from this model as inappropriate basis for analysing the proposed tax reform. In Table 1 we have reproduced (in grey) basic aggregate results from the CLDS model. We have taken relevant average monthly estimates given by Matković and Mijatović in their Table 1 and multiplied them with 12 in order to show relevant annual estimates, that we can compare with actually observed fiscal data in 2009 (added in white). We focus our attention on two major issues – overall revenues under the existing VAT system and the anticipated increase in budget revenues due to more progressive wage taxation.

Table 1 – Basic (annual) results from the CLDS model versus actual data in 2009, in billion of Dinars

	Actual 2009 fiscal data	Results from CLDS model simulations	
		Existing tax system in 2009	Proposed tax reform in 2009
Wage tax	104.3	**103.2**	**158.4**
Pension Contributions	214.3	223.2	211.2
Health and Unemployment Contributions	129.6	140.4	0.0
Household Consumption, Nominal		1,293.6	1,314.0
Effective VAT rate from CLDS model		13%	17.3%
VAT Revenues	**294.4**	**168.2**	227.3

Source: Reproduced and rearranged from Matković and Mijatović (2011).

When reporting basic aggregate results in their Table 1, Matković and Mijatović do not report crucial information regarding estimated VAT revenues. However, one can reconstruct the implied VAT revenues – by multiplying the estimated average effective VAT rate with the amount of nominal consumption. We observe a significant discrepancy – 168.2 billion dinars of VAT revenues implied by the microsimulation model used by the authors versus 294.4 billion dinars of actually collected revenues in 2009. This discrepancy points to a serious modeling error. While using Household Budget Survey (HBS) data to estimate VAT incidence across households represents a standard research approach, using HBS data alone can not produce an estimate of overall VAT revenues, nor it can produce an estimate of changes in VAT revenues due to changes in the legal VAT rates.[1] Thus, we find that coutrary to authors' claims, their model can not possibly produce a credible estimate of the VAT rate increase needed to implement the revenue-neutral tax reform proposed in Arsić et. al (2010). This fact undermines the integrity of all subsequent empirical estimates presented by Matković and Mijatović.

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1 HBS coverage of relevant sources of VAT revenues is not complete, as it exludes taxable consumption made by tourists or companies outside the VAT system. Furthermore, HBS data is not even representative of the overall structure of VAT revenues - since household consumption of reduced VAT rate goods is higher than that of turists or companies outside the VAT system.

The microsimulation model used by Matković and Mijatović predicts that more progressive wage taxation would increase budget revenues by additional 55.2 billion dinars in 2009 (from 103.2 to 158.4 billion dinars). We can use simple algebra to show that this estimate is unrealistic and that one could expect a significantly lower revenue increase in reality. To get an estimate of the likely revenue increase, we take the amount of actually collected wage tax in 2009 and apply the two progressivity-enhancing measures – (i) increase the wage tax rate from 12 to 20% and (ii) increase the tax-exempt threshold from 6,000 RSD to 16,500 RSD, under the new tax rate of 20%. The first measure produces a revenue increase equal to: *104.3 billion RSD * (20% – 12%) / 12% = 69.5 billion RSD*. To get an estimate for the second measure, we notice that the legaly prescribed minimum monthly gross wage in Serbia in 2009 was about 21,000 RSD. This means that we can safely assume that the measure of increasing the tax-exempt threshold from 6,000 RSD to 16,500 RSD would fully affect all registered workers in Serbia in 2009.[2] Since official statistics indicate about 1,75 million registered workers in 2009, we easly estimate the effect of the second measure to be: *(16,500 RSD – 6,000 RSD) * 20% *12 months * 1.75 million workers = 44.1 billion RSD*. We conclude that the overall increase in budget revenues due to more progressive wage taxation should be around 69.5 – 44.1 = *25.4 billion dinars*.[3] This amount significantly differs from the 55.2 billion dinars estimate presented by Matković and Mijatović. We can conduct sensitivity analysis to see how far from the reality is the model used by the authors – by reverse-engineering and calculating what would need to be the number of registered workers in Serbia in 2009 for the model estimate to be correct. Simple algebra reveals that the model used by Matković and Mijatović implies *[69.5 billion RSD – 55.2 billion RSD] / [(16,500 RSD – 6,000 RSD) * 20% * 12 months] = 567,500 workers*. Thus, the model implies three times less registered workers in Serbia in 2009 than what was reported by all official statistics. We believe that this huge discrepancy renders the results from the CLDS model regarding wage taxation and the distribution of wage burden – inappropriate for policy analysis. This shortcoming of the underlying model further undermines the credibility of Matković and Mijatović empirical estimates, especially the ones pertaining to the number of persons that might fall bellow the poverty line.

2. Matković and Mijatović interpretation of the empirical results from their microsimulation model, which identifies pensioners and other recepients of social transfers as the biggest relative loosers from the proposed tax reform – is countrary to the existing legal framework and economic reality in Serbia. In particular, the value of pension and other social transfers (child allowance, material familily support, unemployment benefits, etc) is being treated as fixed within the microsimulation model. We acknowledge that this is the standard modeling approach shared by most microsimulation models which focus on the short-term analysis.[4] However, it is well known that pensions and other social transfers are not fixed in reality – the law prescribes that they are to be adjusted for inflation (and possibly for GDP or wage growth) every six months. If efficiency-driven tax reform were to be implemented in Serbia, it would likely cause a one-time increase in the price level due to the proposed increase in the VAT rate. However, authors' claim that pensioners and other recepients of social transfers would remain uncompensated for this one-time tax induced price increase – is unfounded. With a possible delay of a couple of months, all recipients of social transfer benefits, foremost pensioners – would get fully compensated through regular inflation indexation of their benefits. One should be mindfull of this important fact when interpreting the model results - since models are developed to explain the real world phenomena, not vice versa. It is unrealistic to assume that regular inflation indexation of social transfers would be suspended due to implementation of any tax reform. Even the European Commission (2006) paper, that Matković and Mijatović themselves reference, recognizes on page 6 that interpreting model results in the manner that the authors have done - „does not, however, look realistic as in real life there would be a strong political pressure to adapt pensions and benefits to the higher cost of living." European Commission then proceeds to simulations which assume inflation indexation of social benefits.

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2 One can occasionally encounter cases where employers register their workers for wages less than the legally prescribed minimum. However, these cases are rare and the potential discrepancy from this phenomenon is on the order of a magnitude lower than the discrepancy we observe in the CLDS model.

3 We have made an implicit assumption of fixed gross wages in our calculations. This assumption corresponds to CLDS Simulation Scenario 1, which actually produces the highest possible revenue estimate. Thus, it could be said that our estimate represents an upper bound estimate for the CLDS model.

4 More elaborate microsimulation models, such as EUROMOD, actually do model changes in eligibility for social assistance programs due to tax induced changes in disposable income (Sutherland, 2001)

3. Comparative analysis of distributional effects of the proposed tax reform

The analysis of the distributional effects of the proposed tax reform is driven by the chosen methodological framework – whether household income or household consumption is considered to be a more appropriate indicator of the standard of living.[5] Furthermore, the validity of empirical results crucially depends on adequate characteristics of the underlying economic model – the model must be based on actual characteristics of the existing Serbian tax system, it can not be based on hypothetical assumptions or typical characteristics of tax systems in developed western economies.

3. Matković and Mijatović discussion regarding the equity aspects of the proposed tax shift from labor to consumption (on page 33) is not based on actual characteristics of the existing Serbian tax system, but on typical characteristics of tax systems in developed western economies – which represents an inadequate approach for multiple reasons. First, personal income tax in Serbia is roughly proportional, while personal income tax in developed western economies is significantly progressive.[6] Second, the proposed tax reform for Serbia envisages signficant increase in the progressivity of personal income tax, which authors themselves acknowledge in their Figure 1. Thus, Matković and Mijatović claim that shifting tax burden from income to consumption „benefits affluent population groups who were much more affected by the previous income tax progression" - is not founded in the existing Serbian economic reality. Lastly, when arguing that consumption taxes are „usually regressive", the authors have not only ignored actual Serbian economic data, but have also completely ignored extensive lifetime tax incidence literature during the last couple of decades - Caspersen and Metcalf (1994), Fullerton and Rogers (1991), Poterba (1989), Decoster et.al (2010), etc. When one analyzes lifetime incidence, VAT estimates are roughly proportional or slightly progressive, while income tax incidence is significantly less progressive than in the case of annual incidence estimates. In the next subsection, we provide our estimates of VAT incidence based on actual Serbian economic data.

4. Matković and Mijatović stance that household consumption is „a more reliable measure of the standard of living than [household] income" and their pressumption that „the consumption tax is usually regressive"– are mutually contradictory. It is well known that all empirical estimates of regressive (annual) incidence of consumption taxes have been obtained by using (annual) income as the relevant measure of the standard of living. We fully support the reasoning behing Matković and Mijatović decision to preffer consumption over income as the relevant indicator of the standard of living. But, when one adopts this point of view, the presumption of regressive and inequitable consumption taxation – no longer holds (Caspersen and Metcalf, 1994; Fullerton and Rogers, 1991; Poterba, 1989). Empirical estimates of VAT incidence in over a dozen of EU countries investigated by O'Donoghue et. al. (2004) and Decoster et.al (2010) clearly show that VAT incidence is proportional or progressive when household consumption is taken to be the relevant measure of the standard of living. Arsić and Altiparmakov (2011) confirm that VAT in Serbia is also slightly progressive in this case.

Using consumption data from 2009 Household Budget Survey as the relevant measure of the standard of living, Arsić and Altiparmakov (2011) show that the proposed increase in the VAT rate by 4% would actually reduce inequality slightly – the Gini coefficient would be reduced by 0.1%. Such a small decrease in inequality might be considered as being roughly proportional in terms of distributional effects.

Overall, we can conclude that the proposed tax reform would have progressive distributional effects and would reduce the inequality of living standards – since it would represent a combination of one progressive measure (reduction of fiscal burden on wages) and one measure with proportional distributional

Table 2 – VAT incidence, decile ranking of households according to units of equivalent consumption

Decile	VAT / Consumption	Effective VAT rate
1	9.8%	10.8%
2	10.3%	11.5%
3	10.3%	11.5%
4	10.6%	11.8%
5	10.6%	11.8%
6	10.8%	12.2%
7	10.9%	12.2%
8	10.9%	12.3%
9	11.2%	12.6%
10	11.5%	13.0%
Global progressiveness indices		
	Before tax	After Tax
Gini coefficient	0.27899635	0.27636354

Source: Arsić and Altiparmakov (2011)
Note: Calculations take into account different household sizes.

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5 Lifetime tax incidence analyses rely on household (current) consumption as the relevant indicator of the standard of living, while annual tax incidence studies mostly rely on household income. However, in transition countries such as Serbia where a significant portion of income goes undeclared – household consumption is often deemed as the more reliable indicator of the standard of living even within one year – which is the stance adopted by Matković and Mijatović as well.

6 Musgrave-Thin index of progressivity stands at 1.015 for Serbia, compared to 1.072 average in 15 old EU member states. Also, Kakwani progressivity index stands at 0.1186 for Serbia, compared to 0.25 average of 15 old EU member states. See Randjelović and Žarković-Rakić (2011) for Serbian estimates and Peichl and Schaefer (2008) for EU estimates.

effects (VAT rate increase).[7]

Thus, Matković and Mijatović claims regarding the „negative redistributive effects" of the proposed tax shifting from income to consumption are not supported by the actual economic data in Serbia.

4. Comparative analysis of macroeconomic effects of the proposed tax reform

5. Selective and inconsistent use of the short-term demand-side economic analysis by Matković and Mijatović inappropriately discredits long-term supply-side goals of the efficiency-driven tax reform proposal. It is well known that contemporary economic science deals seperately with short-term and long-term analysis, due to significantly different economic characteristics of these two time horizonts. Efficiency-driven tax reform proposal in Arsić et. al (2010) represents a long-term structural policy aimed at improving supply-side potential of the Serbian economy, reducing economic distrortions caused by the existing tax system and improving competitivnes of the Serbian economy. While short-term economic effects undoubtably need to be analyzed and recognized, the decision whether or not to implement a long-term supply-side structural reform can not be driven by the analysis of short-term demand-side effects.[8]

Furthermore, the short-term macroeconomic analysis presented by Matković and Mijatović is obviously selective and inconsistent. Starting from the fact that efficiency-driven tax reform would reduce consumer demand in the short-term, the authors wrongly conclude that „a decrease in the population's consumption would probably bring about a decline in economic activity, due to dampened demand of the population and aggregate demand". In drawing this conclusion, the authors ignore the fact that the proposed tax reform would also possitively affect other components of aggregate demand – investments due to increased operating profits in the corporate sector and net exports due to „fiscal devaluation" induced by the proposed tax reform.[9] Even the OECD (2007) paper, that authors themselves reference, recognizes (on page 6) that the argument of positive effects on net export demand „probably has considerable validity in the short-run for economies with high levels of unemployment." Not to mention that the authors ignore the role of monetary policy in accommodating short-term aggregate demand fluctuations. Any restrictive effects on aggregate demand, caused by fiscal policy, would allow for monetary easing which would fuel investment demand and commercial lending. Thus, the authors' conclusion regarding the reduced aggregate demand and reduced economic activity in the short-term - is not supported by the relevant economic theory. One can only speak about changes in the composition of aggregate demand, away from consumption and in favor of investments and net exports – which is actually one of the stated goals of the proposed tax reform.

6. Matković and Mijatović inappropriately quote the results from European Commission (2006), thus understating possible growth enhancement that the proposed efficiency-driven tax reform might yield in the long-term. On page 32, the authors convey the results from the European Commission paper that „the mentioned [tax] shift would accelerate economic growth by only 0.2%." But, there are infinitely many ways in which one can shift tax burden from labor to consumption and the authors withold the crucial information regarding the extent of tax shifting being analysed - "The scenario analysis described in this note includes stylised tax shifts of 1% of GDP from labour income tax to value added taxes" (European Commission, 2006, page 15).[10] Of course, if one was to contemplate a larger tax shift from labor to consumption, growth effects would undoubtedly be larger – which is also evident in the results presented by the European Commission. But Matković and Mijatović ignore this fact, thus mixing apples with oranges in their analysis – they report growth-enhancing results for 1% of GDP tax shifting in the context of the proposed tax reform that envisages 2.5% of GDP tax shift from labor to consumption. In this manner, the authors incorrectly assess the growth enhancement potential of the concrete tax reform proposal under consideration.

It is important to note that most of the recent studies and simulations find positive growth effects from shifting tax burden from labor to consumption, although estimates of the relevant magnitude do vary from one study to another. For example, OECD (2010) estimates of positive growth-enhancing effects are tangibly higher than the European Commission (2006) estimates quoted by Matković and Mijatović. None the less, one cannot assess the significance

7 The proposed reduction of fiscal burden on wages is unambiguously progressive, since reduction in social contributions has proportional distributional effects, while the proposed change in the wage tax structure is significantly progressive (as authors themselves acknowledge in their Figure 1).

8 Inadequacy of assessing long-term supply-side policies with short-term demand-side analysis is evident in many economic phenomena where short-term and long-term analyses produce different, and even contradicting, conclusions. For example, short-term analysis of the real currency depreciation implies deterioration of the current account balance – the contrary conclusion to the medium-term and long-term results which imply improvements in the current account balance (the so called "J-curve" effect).

9 "Fiscal devaluation" refers to the fact that increasing VAT and reducing fiscal burden on wages improves price competitiveness of domestically produced goods. Empirical estimates of positive effects of fiscal devaluation on net export demand are summarized in Appendix 1 of IMF (2011).

10 The same results are also presented in European Commission (2008), page 198.

of these growth-enhancing effects in isolation, without comparing them with estimated growth effects of other reform proposals. Although the authors' put forward some alternative reform proposals, such as improving the business environment instead of conducting the tax shifting reform, they do not present growth-enhancing estimates of any alternative reform proposals. In fact, growth regressions presented in OECD (2010) indicate that the growth-enhancing potential of the tax shifting reforms is on the same order of magnitude as other relevant growth policy variables. Most importantly, there is no reason why implementing growth-enhancing reform in one segment of the economy would preclude complementary growth-enhancing reforms in other segments, especially since stand-alone effects of any one particular reform can not possibly ensure appropriate recovery of the Serbian economy. For this reason, it is explicitly stated that the tax reform proposal presented in Arsić et. al (2010) should constitute only one segment of the overall economic reform package that would ensure sustainable and vibrant growth of the Serbian economy in the coming years.

7. One can notice that the authors present selective and biased economic arguments on a number of occasions. For example, the authors imply that implementing the proposed tax reform and increasing the VAT rate during the existing economic crisis would hardly be appropriate due to already elevated level of poverty. However, Matković and Mijatović ignore the fact that during economic crises many retailers are reluctant to fully pass forward the VAT increase onto consumers. For example, evidence suggests that retailers in Hungary, Latvia and Lithuania have passed forward only a small fraction of the VAT increase onto consumers during the recent economic crisis. Retailers in Croatia and Estonia seem to have fully absorbed VAT increases during the crisis. In the long-term, the VAT burden would be fully passed onto consumers. However, in the short-term perspective analyzed by the authors, exactly due to the presence of economic crisis – most retailers would not be in the position to fully pass forward the VAT increase onto consumers, until the economic crisis subsides and consumer spending recovers.

Although Matković and Mijatović analysis focuses on the short-term, they do make selective departures to investigate long-term effects. For example, the authors state on page 46 that the proposed tax shift from labor to consumption would benefit employers in the short-term, but employers' gain would only be transitory and would „melt away under market pressure" in the long-term through competition and „decrease in the price of goods". However, the authors do not recognize that the decrease in the price of goods in the long-term would also make any consumption losses transitory as well – since it would imply an increase in the population's real purchasing power. Furthermore, the authors fail to recognize another important channel through which market forces would in the long-term melt away employers' extra profits – using transitory gains for hiring of new employees. This would reduce (exceptionally high) unemployment rate in Serbia, improve the position of unemployed vulnerable groups and reduce inequality in the long-term.

8. Matković and Mijatović incorrectly apply the results of Baunsgaard and Symansky (2009) to make an unfounded claim that the efficiency-driven tax reform proposal would weaken the stabilization potential of tax policy in Serbia. Baunsgaard and Symansky (2009) analysis is based on tax incidence in typical western economies that is not directly comparable to the actual tax incidence in Serbia, as already mentioned. But, most importantly, Matković and Mijatović analysis only pertains to the possible effect of tax shifting from labor to consumption – the authors completely ignore positive automatic stabilization effect due to singificantly increased wage tax progressiveness (which authors clearly recognize in their Figure 1). Thus, if Matković and Mijatović want to properly and consistently analyze the effects of efficiency-driven tax reform proposal on the automatic stabilization potential of the Serbian tax system - they should, using actual data from the Serbian economy, properly quantify both of these effects and net them out in order to see whether the stabilization potential decreases, increases or remains unchanged.

5. Concluding Remarks

Tax policy represents one of the most powerful tools for managing macroeconomic conditions in Serbia. It is thus of vital importance that thorough analyses and open academic discussion precede the implementation of a potential tax reform – in order to establish a credible foundation on which elected government officials can pursue optimal public policies. To this end, we have presented our concerns regarding the empirical results presented by Matković and Mijatović (2011), in order to constructively contribute to the academic discussion regarding economically optimal and socially adequate structure of the Serbian tax system. Our results challenge the validity of Matković and Mijatović conclusions regarding the negative distributional and negative macroeconomic effects of the proposed tax reform in the short-term. Furthermore, we stress the long-term structural character of the proposed reform, whose positive effects on employment, competitivness and economic growth – are firmly founded in the relevant literature.

In accordance with arguments and evidence presented in this paper, we conclude that efficiency-driven shift from labor to consumption taxation presented in Arsić et. al (2010) would result in reduced inequality and progressive distribution of the tax burden – since VAT increase would have roughly proportional distributional effects, while reduced fiscal burden on wages would be tangibly progressive.

The proposed tax reform would differently affect different socio-economic groups. Pensioners and other recipients of social transfer programs would not be affected by the proposed tax reform at all – since regular inflation indexation of their benefits would ensure that they get fully compensated for the one-time price increase induced by the VAT rate increase. The exact effect on registered employees is uncertain due to uncertainty regarding the distribution of „reform gains" between employers and employees. Even so, we can say with great certainty that employees with lowest registered wages would benefit the most – due to significant increase in the wage tax progressivness. On the other hand, employees with relatively higher wages would realize relative losses – since benefits they would realize from reduced fiscal burden on labor would not be enough to compensate them for the one-time increase in the price level induced by the VAT increase.[11] However, relative losses for employees with higher wages would be limited and would be smaller than 3.5% - which is a (conservative) upper-bound for the long-term price level increase induced by the 4% VAT increase.[12]

Proposed tax reform would create more favorable employment conditions, thus improving the odds for currently unemployed or illegaly employed individuals to find registered legal employment in the medium and long-term. However, illegaly employed individuals that fail to find legal registered employment would also realize relative losses from the proposed tax reform – they would fail to receive any benefits from the reduced wage burden, but would take the full hit of the VAT induced price increase. While the tax reform would have adverse distributional effects in this segment, it could be expected that this turn of events would stimulate efforts to decisevely tackle tax evasion and shadow economy in Serbia, which is becoming an alarmingly severe impediment to sustainable economic growth.

While distributional effects are an important element in discussing tax reform proposals, it should be stressed that international empirical evidence shows that expenditure policies are actually much more efficient instrument for income redistribution than the tax policy (Paulus et. al, 2009). Tax policy is especially inefficient instrument for income redistribution in transitional economies, such as Serbia, which feature a very high level of tax evasion in practice (Chu et. al, 2000). Thus, we believe that distributional effects should not be a determining factor when choosing an optimal tax mix for Serbia. Distributional issues should be properly analyzed and possibly tackled through expenditure policies, but the direction of the tax reform should be driven by economic considerations. Otherwise, Serbia could end up with suboptimal economic growth performance and ineffective income redistribution mechanisms.

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11 More progressive wage taxation presented in Arsić et. al (2010) is calibrated so that about one half of employees with lowest wages experiences tax reduction, while the other half of employees with higher wages experiences tax increase. Since the reform proposal also envisages the reduction of social security contributions, the total fiscal burden on wages would be reduced for all employees in Serbia.

12 The long-term price level increase of 3.5% is based on estimates of 40% of taxable VAT consumption being subject to the reduced VAT rate. This estimate is a conservative upper bound for the possible price increase, since it excludes downward pressure on prices due to the lowering of fiscal burden on wages.

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