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INTRODUCTION: INEQUALITY, WELFARE POLICIES AND FINANCIAL STABILITY IN THE YUGOSLAV SUCCESSOR STATES

This issue breaks new ground for the journal in presenting a thematic collection of papers centred around the economic and social conditions in some of the successor states of former Yugoslavia. Several of the papers in this collection were originally presented at a Workshop on "Inequality and Social Protection in South East Europe" held at the Faculty of Economics of the University if Belgrade on 22 October 2018, and subsequently developed further (these are selected and peer-reviewed papers by Žarković Rakić et al., Petreski et al., Obradović & Filic, and Stubbs). The Workshop was supported by the International Inequalities Institute of the LSE, the LSE's research unit on Southeastern Europe (LSEE) and the Foundation for the Advancement of Economics (FREN) in Belgrade. The contributed peer-reviewed papers by Bole et al. and Anić & Krstić are additionally included in this issue of the journal in view of their thematic relevance.

The main focus of the papers is on inequality and social welfare systems and their interaction, while the collection is headed up by a paper setting out the broad context of recent economic developments in the region focusing on the consequences of the eurozone crisis for financial stability. Inequality has become an increasingly central issue for economic analysis in recent years as asset prices have ballooned following the quantitative easing policies widely introduced in the aftermath of the global financial crisis of 2008, and the subsequent eurozone crisis which had strong spillover effects throughout South East Europe. This has been compounded by skill-biased technological progress which has put an increasing premium on high level skills in the context of the emergence of the digital economy. The increasing concentration of financial capital in the hands of a narrow elite, combined with unequal access to education and skills and reduced social mobility has raised income inequality to unprecedented levels in many countries.[1] This process has varied among countries in relation to the extent of mitigating measures to promote social inclusion and provide social welfare. Economic Annals is pleased to be able to act as a forum to explore these issues in a regional context.

1 See: Branko Milanović (2019) *Capitalism, Alone: The Future of the System the Rules the World*, Cambridge, MA: The Belknap Press

Within the EU, the eurozone crisis exposed the sharp divide between the prosperous northern member states and the more vulnerable southern member states. This divide has been widely analysed through the prism of core-periphery models of economic interaction between a high productivity "core" and a lower productivity "periphery". In addition, a "super-periphery" within the European economic space includes candidate and potential candidates for EU membership.

The first paper in this collection, by Velimir Bole and colleagues, examines the effect of the eurozone crisis on two peripheral countries of the EU (Slovenia and Croatia) and four super-peripheral countries (Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia) from among the successor states of former Yugoslavia. They identify differences in financial stability and resilience of companies in the region, conditioned by the effects of policies enforced by the European Commission and the European Central Bank and underlying weaknesses in initial conditions and economic governance. This is followed by a paper by Jelena Žarković Rakić and colleagues who explore the implications of differential transition paths for the growth of inequality in three of the successor states, aiming to explain the causes of the relatively low level of income inequality in Slovenia compared to the relatively high level of inequality observed in Serbia. They argue that differences in labour market institutions, education systems, and social welfare systems all contribute to differences in inequality between these countries in identifiable ways. The paper emphasises the role of policy reform over initial conditions in generating inequality outcomes during the transition process.

The third paper by Marjan Petreski and colleagues examines the use of the minimum wage as an equality policy in North Macedonia, which succeeded in raising the living standards of the poorest wage earners without setting off a wage spiral. The fourth paper by Nikolina Obradović and Goran Filic explores the relationship between inequality and social policy in Bosnia and Herzegovina. They identify the ways in which the design of social policy has paradoxically reinforced unequal access to social benefits and thus exacerbated pre-existing levels of market inequality rather than ameliorating such inequalities. The fifth paper by Paul Stubbs explores the political economy of social welfare in Croatia. He argues that similar distortions in the design of social policy as in Bosnia and Herzegovina, including a large reliance on categorical benefits and the partial privatisation of pension provision, have contributed to relatively high levels of inequality. Stubbs also highlights how welfare parallelism has interacted with the adoption of a neoliberal approach to social welfare to undermine the generosity and coverage of welfare policies in Croatia. The final paper by Aleksandra

Anić and Gorana Krstić explores the gender pay gap in Serbia. Using an innovative methodology that corrects for sample selection bias, they argue that discrimination is a key explanation for the large gender pay gap, despite the legal prohibitions in place to prevent such behaviours.

Taken together, the papers in this thematic issue highlight the strengths and weaknesses of welfare policies and financial regulations in the successor states which together have led to quite variable outcomes for inequality in the region.

William Bartlett
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COUNTRIES OF FORMER YUGOSLAVIA: PERIPHERY VS. SUPER-PERIPHERY IN THE GREAT RECESSION AND BEYOND

ABSTRACT: *The paper deals with the performance of former Yugoslav countries during the Great Recession. It compares the performance of peripheral countries (Slovenia and Croatia) with those of super-peripheral countries (Bosnia, the Republic of North Macedonia, Montenegro, and Serbia). The focus of the analysis is the four channels of crisis transmission and amplification: the capital surge as the external channel on the one hand, and the financial accelerator, the banking credit extension, and liquidity as internal channels on the other. While the external channel drove the dynamics of the crisis, the internal channels amplified, broadened, and prolonged its drastic economic consequences. The paper depicts the trajectory of the consequences of the Great Recession for both peripheral and super-peripheral countries. It shows that, regarding financial stability, peripheral countries outperformed super-peripheral countries in the boom phase, but not in the bust and recovery phases. The crucial factor influencing such a deterioration of peripheral countries' financial stability was the policy measures enforced by the European Commission and ECB, calibrated to the needs of the largest and strongest economies of the euro area, while neglecting the asymmetric dynamics of European economies in the bust and recovery phases. The paper concludes with a warning that something similar could happen in the present crisis triggered by the Covid-19 virus.*

KEY WORDS: *indebtedness, investments, bank lending, credit supply and demand, capital flows*

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1. INTRODUCTION

This paper examines how the financial crisis of the Great Recession developed in countries of the Western Balkans. During the Great Recession the Western Balkans suffered one of the more substantial drops in economic activity worldwide (Bole et al. 2018). Studying the development of the financial crisis in the Western Balkans is of considerable importance, since the resulting insights might be used in the case of new financial or similar crises in the region and beyond. Given data availability, we take a closer look at the countries of former Yugoslavia.

The countries of former Yugoslavia can be analysed in the context of the periphery versus super-periphery (versus core/old EU countries) paradigm. Sokol (2001) describes super-peripheral countries as countries outside the EU that are neither eurozone members nor EU members, but are similarly influenced by developments in the EU and the eurozone (including Western Balkan countries). Bartlett and Prica (2017a; 2017b) further elaborate on this issue by connecting core European countries and peripheral countries, which are either a part of the eurozone (the so-called 'Inner Periphery') or within the EU but outside the eurozone ('Outer Periphery'), or super-peripheral countries, which are not in the eurozone and the EU but are still tied to the eurozone through a high level of 'euroisation' of their economies. We adopt the above argumentation and define peripheral and super-peripheral countries according to the similarity and development of their market, regulatory, and policy institutions. In peripheral countries, institutions are (at least formally) harmonised with those in core EU countries (which allows peripheral countries to benefit from a larger economic association), whereas in super-peripheral countries they are of the stand-alone type and generate, in principle, larger frictions, negative externalities, and inefficiencies. Hence, the sovereign premium can be used as the single robust indicator of the peripheral versus super-peripheral status of a country. In the financial cycle the sovereign premium in peripheral countries is, in principle, larger and more volatile than that in core countries, although it can come very close or even attain the sovereign premium of core countries in the boom period, at the top of the cycle. In super-peripheral countries the sovereign premium is significantly larger than in peripheral countries and systematically much larger than in core countries.

According to the foregoing definition of peripheral and super-peripheral countries (with respect to the alignment of institutions as well as the size of the sovereign premium), Slovenia and Croatia can be classified as peripheral countries, while Bosnia, Montenegro, the Republic of North Macedonia, and Serbia can be classified as super-peripheral countries with regard to the EU as the new centre of economic gravity. Because of the differences in the political and economic separation from the new centre of economic gravity, the countries of former Yugoslavia face large differences in long-term developmental conditions as well as in daily economic opportunities. The paper tackles the most outstanding differences as revealed by the Great Recession.

In terms of the theoretical framework, our study is built on the literature on the interaction between the real economy and the financial sector and the importance of credit market friction for aggregate economic activity (see Claessens and Kose 2018). We first focus on the financial accelerator mechanism (Bernanke, Gertler, and Gilchrist 1999) present in the so-called 'balance sheet' models (Kiyotaki and Moore 1997; Miller and Stiglitz 2010; Krishnamurty 2010), which explains how the financial crisis could be accelerated through the firms' debt (de)accumulation (the demand-side or the borrower channel). We then extend our research to study a more elaborate liquidity channel boosting two crucial components, namely funding and market liquidity. In less developed and emerging countries, the funding liquidity component, with its focus on the liability side of the bank balance sheet, is especially important for studying the development of financial crises (e.g., Shin 2013). Studies by Gertler and Kiyotaki (2011) and Gertler, Kiyotaki, and Prespitino (2016) show how the accelerated indebtedness of non-financial firms due to demand-side financial frictions and the simultaneous increase in debt incurred by banks due to increased wholesale funding followed by a sudden stop are especially appropriate for Balkan countries facing a lack of capital. As also claimed by Bole et al. (2020), international financial inflows and their reversal are particularly important for understanding the role of retail and wholesale funding channels and the activities of banks in providing credits to households and firms during the Great Recession in the Western Balkans.

The main results of our paper are threefold. First, we show the importance of the financial accelerator mechanism (Bernanke, Gertler, and Gilchrist 1999; Bole et al. 2018) that endogenously drove the amplification and propagation of the debt

accumulation process through companies' investments during the build-up and unwinding phases of debt (de)accumulation in the Great Recession in the Western Balkans. To the debt accumulation equation model we added the cash flow migration equation, showing a negative impact on the liquidity of firms after the crisis struck. In particular, the marginal contributions of financial debt as well as non-financial debt and receivables on cash flow migration increased when moving from the boom to the bust regime. Moreover, the marginal contributions of non-financial debt and receivables became bigger than the marginal contribution of financial debt, showing that illiquidity spread to suppliers and buyers.

Second, we identify the role of banking in the debt build-up process, especially its role in transmitting (foreign) financial inflows to nonfinancial corporations and households, and we analyse the bank transmission mechanism of wholesale and retail funding swings triggered by the economy and foreign financial flow shocks throughout the boom (2007–2008), bust (2009–2010), and recovery (2011–2013) periods. The paper shows that the funding channel was a sizable driver of credit trajectory throughout the Great Recession in the observed Western Balkan countries, and that the wholesale (external) funding of banks was more important for credit activity within firms than for credit activity within households.

Third, we show that although the countries of former Yugoslavia belonged to a common financial cycle during the Great Recession, the mechanism of shock amplification from the centre to the periphery (symmetric shock with asymmetric amplification) made their performance in the boom-bust-recovery episode slightly different. The effects of super-peripheral dummies were stronger in the boom period, but they became weaker in the bust and recovery periods. The financial crisis was present in both peripheral and super-peripheral countries. Increases in illiquidity were apparent in later phases of the crisis, pointing to a lack of measures and/or inappropriate measures to increase liquidity when the crisis elapsed in both groups of countries (see also Krishnamurthy 2010; Bole, Prašnikar, and Trobec 2014).

The remainder of the paper is structured as follows. The next section introduces the models of companies' debt accumulation and cash flow migration during the crisis in the observed countries, provides the data used, and presents the empirical

results. Section 3 illustrates the bank credit dynamics in the household and firm models, explains the data, and presents the empirical results. Section 4 concludes the paper.

2. THE ACCELERATOR OF FIRM DEBT (DE)ACCUMULATION AND NET WORTH CYCLICALITY DURING THE FINANCIAL CRISIS

The literature on the financial accelerator and 'balance sheet' crisis attributes the emergence of financial crises to sudden (even idiosyncratic) events triggering wholesale risk rebalancing.[1] In the case of the former Yugoslav countries the delayed integration into international economic flows at the end of the 1990s due to conflict and war made such rebalancing even more extensive and erratic. The new countries pursued liberalisation and free trade policies, opened capital accounts, and established quick (voucher) privatisation as a way to a free market economy, which at first glance increased the rate of return on capital to independent entrepreneurs and stimulated new investment. The fact that these investments were financed by limited entrepreneurial wealth (net worth) and large borrowing constitutes a good foundation for the emergence of the so-called 'balance sheet' crisis, especially since in the (boom) period before the crisis, already ample borrowing was additionally increased as the predominant source of financing in the former Yugoslav countries.[2] Because of the delayed integration into international economic flows and the preceding extended period of uncertainty and war, their available (accumulated) entrepreneurial wealth was very limited.

To model this process of debt build-up driven by investment we specify two equations that are of importance in our discussion, namely the debt accumulation

[1] See early contributions such as Minsky (1975) and Kindleberger (1978), as well as more recent ones such as Kiyotaki and Moore (1997), and Miller and Stiglitz (2010).

[2] As described by Četković (2015), bank credit to enterprises in former Yugoslavia was growing fast in the 1960s and 1970s as the country rapidly industrialised. As also shown by Uvalić (1992), the former Yugoslavia was characterised by high investment and savings rates at the aggregate level compared to selected emerging countries (Greece, Portugal, Spain, Turkey), but also by low ex-ante enterprises' savings rates and low investment efficiency (see also Bajt 1988). Bank credits constituted the most important source of enterprise investment (Prašnikar 1983); banks often used political criteria in their allocation.

equation and the cash flow migration equation, and later present their empirical estimation.

2.1. Specification of the debt accumulation equation and the cash flow migration equation

2.1.1. The debt accumulation equation

Following Bernanke, Gertler, and Gilchrist's (1999) theoretical model of investment-driven indebtedness (i.e., the financial accelerator) and the extension of the model by Bole et al. (2018) to different kinds of investments, different industries, different countries, and different solvency categories (e.g., capital size and credit collateralisation), we were able to build a model to explain the variation in the yearly changes in financial debt (differences) by variation in the firms' core business investments (investments in physical capital) and long-term financial investments. The first variable reflects the increasing returns and additional investments due to the economy opening up before the crisis, which brought economic subjects new perspectives (new markets) and new possibilities, and therefore increasing returns, as well as additional financial sources from abroad. The second variable reflects the effect of enormous swings in expected capital returns driven by asset price volatility (skyrocketing in boom time but collapsing in bust time) throughout the Great Recession, supported, in addition, by policymakers' increasing desire to facilitate speedy privatisation. Financial investments included investments in real estate, whose volatility was especially pronounced during the episode.

Firms' distribution of investments and the size of the financial accelerator are crucial drivers of the debt build-up process intensity. To account for possible differences between the peripheral and the super-peripheral groups of countries with regard to firms' distribution of investments and the size of the financial accelerator, we add dummy variables encompassing specificities (in the debt build-up process) observed in both groups of countries. Additional dummies address the differences between the two periods of crisis development: the boom regime (2007–2008) and the bust regime (2009–2010).[3]

[3] We focused on these two phases as the recovery phase was already interrupted in 2011 by other factors, which heavily influenced individual countries and, in most of them, led to the second dip in 2012 (the public debt crisis, austerity measures, etc.).

The set of explanatory variables is augmented by lagged capital, lagged collateral, and a dummy for manufacturing companies. The specification of the estimated equation is as follows:

$$fin\_debt=\alpha_0 + \alpha_1 core\_investment + \alpha_2 fin\_investment + \alpha_3 per\_bust + \alpha_4 super\_per\_boom + \alpha_5 super\_per\_bust + \alpha_6 capital(-1) + \alpha_7 collateral(-1) + \alpha_8 man + \varepsilon \quad (1)$$

where subscript *i* denotes a specific company, *fin_debt* denotes the difference in financial debt, *core_investment* is investment in core business activities, and *fin_investment* is financial investments. The variable *per_bust* stays as a dummy, showing non-market factor differences (differences in the administrative environment and policy changes) in the bust period compared to the boom period for the periphery countries. The variables *super_per_boom* and *super_per_bust* show the dummies for non-market factor differences (differences in the administrative environment and policy changes) between the super-peripheral group of countries and the peripheral group of countries in the two regimes of financial crisis development (2007–2008 = boom; 2009–2010 = bust). For all dummies the peripheral group of countries in boom period (2007–2008) serves as a base dummy. The variable *capital(-1)* denotes the lagged value of the firm's equity, and *collateral(-1)* the firm's lagged collateral (defined as tangible assets less financial debt). The variable *man* is a dummy variable for the manufacturing sector. To mitigate heteroscedasticity problems, debt, financial investments, core investments, equity, and collateral are given in balance sheet units.

2.1.2. The cash flow migration equation

Bole et al. (2018) have shown that the theoretical framework of the financial accelerator mechanism (Bernanke, Gertler, and Gilchrist 1999) can be used as a basis for the construction of a logit model of cash flow migration, where the dependent variable shows the status of the cash flow in the following year (0 = negative cash flow; 1 = positive cash flow). The independent variables are financial debt at the end of the current year, debt collateral coverage, non-financial debt (suppliers), and receivables (buyers).[4] We also added a dummy

[4] See Bole et al. (2018) for the explanation.

variable for manufacturing firms and a dummy variable for the super-peripheral group of countries. The equation is as follows:

$$Pr(cash\_flow>0) = \phi[\beta_o + \beta_1 \cdot fin\_debt\_bil(-1) + \beta_2 \cdot nfin\_debt\_bil(-1) + \beta_3 \cdot receivables(-1) + \beta_4 \cdot collateral\_cover(-1) + \beta_5 \cdot man + \beta_6 \cdot super\_per] \quad (2)$$

where *fin_debt_bil* is the financial debt at the end of the year (per unit of the total balance sheet), *nfin_debt_bil* is the non-financial debt at the end of the year (per unit of the total balance sheet), *receivables* are receivable claims on buyers at the end of the year (per unit of the total balance sheet), *collateral_cover* indicates the 'insufficiency' of the debt collateral (it is defined as debt per unit of collateral) at the end of the year, and *man* is a dummy variable for the manufacturing sector (the service sector serves as the reference). The *super_per* dummy stands for differences in economic activity and other unspecified (predominantly institutional- and policy-related) differences between groups of countries (Croatia and Slovenia serve as the baseline).

2.2. Empirical evidence

Our unbalanced sample consists of over 2,000 companies in six countries for the period 2006 –2011; the sample in the year 2007 encompasses 490 companies from Bosnia and Herzegovina, 497 from Croatia, 195 from the Republic of North Macedonia, 136 from Montenegro, 496 from Serbia, and 351 from Slovenia. The data was collected primarily from the Amadeus database by Bureau van Dijk (2012).[5] The data for Montenegro was obtained from the Central Bank of Montenegro (CBCG) and for the Republic of North Macedonia from the Central Register of the Republic of North Macedonia (CRM). Only companies with an operating revenue exceeding EUR 1 million, or total assets exceeding EUR 2 million, or with more than 150 employees were selected. The variables mentioned in the previous sub-chapter were created from raw balance sheet data.

[5] The size of the collected country samples of companies did not correspond to the countries' actual relative sizes. To prevent the possible effects of size on the estimation results, we selected from our data a random subsample of fixed size for every country, and then used a weighted regression method in which the weights correspond to the actual sizes of the countries. Details on the data construction procedure are given in Bole et al. 2018.

The average values of the variables in models (1) and (2) are given in Tables 1 and 2.

Table 1: Mean of variables from model (1)

All countries	2007	2008	2009	2010
Fin_debt	0.064	0.020	–0.005	–0.010
Fin_investment	0.020	–0.016	0.001	–0.003
Core_investment	0.153	0.089	0.050	0.066
Capital	0.455	0.429	0.423	0.381
Collateral	0.279	0.261	0.263	0.226
Man	0.443	0.451	0.449	0.448
N	2,138	2,136	2,148	2,064

Note: *fin_debt* – increment in financial debt per unit of balance sheet; *fin_investment* – increment in financial investments per unit of balance sheet; *core_investment* – increment in core investments per unit of balance sheet; *capital* – equity per unit of balance sheet; *collateral* – collateral assets less debt per unit of balance sheet; *man* share of manufacturing firms.
Source: Authors' calculation.

Financial debt increased in the boom period, by 6.4% in 2007 and by 2.0% in 2008. Due to the eruption of the global economic and financial crisis the average financial debt fell in the bust period by 0.5% in 2009 and by 1.0% in 2010.

Financial investments show relatively small changes in the boom period (2007 and 2008) and become even smaller in the bust period (2009 and 2010), while the movements and values of core investments were much more substantial. Mean core investments decreased in the period 2007–2009 and increased again in 2010. As a share of the balance sheet, core investments were the largest in 2007 (15.3%).

Companies' mean equity as a share of the balance sheet decreased throughout the observed period. Mean available collateral decreased in the observed period by 5.3 percentage points. Companies in the sample consisted of firms from the manufacturing and service sectors, where the share of manufacturing companies (*man*) is rather constant throughout the observed period.

Table 2: Mean of the variables from model (2)

All countries	2007	2008	2009	2010
Cash_flow		0.846	0.805	0.809
Collateral_cover	0.790	1.022	1.052	1.061
Fin_debt_bil	0.199	0.213	0.219	0.225
Nonfin_debt_bil	0.273	0.280	0.267	0.272
Receivaibles	0.201	0.207	0.203	0.207
Man	0.493	0.494	0.489	0.486
N	1,361	1,453	1,379	1,303

Note: *cash_flow* – share of enterprises with improved cash flow relative to previous year (0 – decrease, 1 –increase); *fin_debt_bil* – financial debt per unit of balance sheet; *nonfin_debt_bil* – non-financial debt per unit of balance sheet; *receivables* – receivables per unit of balance sheet; *collateral_cover* – debt per collateral; *man* – share of manufacturing firms.
Source: Authors' calculation.

In the bust period the cash flow status deteriorated. Financial debt increased in the crisis by 13% of the balance sheet, while nonfinancial debt hardly changed at all. At the same time, collateral coverage of the debt changed considerably. In the same crisis period, the relative size of the uncollateralised part of the debt increased by more than 33%, in the boom period it increased by around 29%, and in the bust period by an additional 4%.

There were only minor changes in receivables claims to the buyers (as a share of the balance sheet) throughout the boom–bust periods of the Great Recession episode.

2.3. Model results

2.3.1. The results of the debt accumulation equation estimation

The results of the debt accumulation equation estimation are presented in Table 3. Debt model (1) is specified and estimated for the boom–bust period (2007–2010). Because of the possible endogeneity problems the model is estimated with the instrumental variables two-stage least-squares (G2SLS) method. The instruments used in G2SLS comprise the averages of independent variables for the two-digit NACE classification, the growth rate of firm employee numbers, sectoral FDI (per unit of value added), and amortisation per employee.

The coefficients of core investments and financial investments are positive and highly significant, addressing the contribution of the two main variables under investigation to companies' increased financial debt. Taking into account large differences in the extent of core versus financial investment changes (namely, much larger core investments), this may show that the contribution of core investments to the financial debt might be much higher than the contribution of financial investments, although the corresponding coefficient of financial investments is twice that of core investments. A negative and highly significant sign of the bust-regime dummy variable (for the peripheral group) points to a substantial increase in other factors (e.g., the regulatory squeeze on banks, the tough EU state-aid regime, the non-debt financing of investment, etc.) that mitigate the effect on companies' financial debt for a given investment dynamic in the bust regime (in the peripheral group of countries). The coefficients of the super-peripheral group dummy variable are negative in both regimes (boom and bust), but are only significant in the bust regime. At the same time, in the bust regime the coefficient for the super-peripheral group is larger than the coefficient for the peripheral group (its absolute value is only 60% of the corresponding value for the peripheral group), showing that in the bust regime and for the same level of investment the financial debt increased more in the super-peripheral group of countries than in the peripheral group. Because of possible effects of weaker institutions and governments (and hence a less controllable economy), as well as fewer alternatives with regard to the non-debt financing of investments – in the bust regime the dispersion of sovereign premiums increases (e.g., smaller potential foreign capital inflows), it seems sensible that, in the bust regime, the investment-driven debt increase was less mitigated in the super-peripheral group of countries. In the boom regime, on the other hand, differences in government interventions between the peripheral and super-peripheral groups of countries were significantly smaller (instead of tough EU-enforced measures, only the EU Commission's indicative warnings supplemented domestic government policy), and the alternatives of non-debt financing of investments proliferated in the super-peripheral group of countries at least as much as in the peripheral group (in the boom period the dispersion of sovereign premiums is much smaller).

The sizes of the coefficients of capital and available collateral are negative (which was to be expected), although they are not statistically significant. The coefficient of the industry sector dummy variable is positive and statistically significant,

showing that the contribution of core investments and financial investments to companies' financial debt was larger in manufacturing than in services.

Table 3: Results of the country group effects on financial debt accumulation

Financial debt		G2SLS
Core investments	α_1	0.246***
		(0.013)
Financial investments	α_2	0.455***
		(0.037)
Peripheral dummy for the bust regime	α_3	-0.028***
		(0.004)
Super-peripheral dummy for the boom regime	α_4	-0.003
		(0.004)
Super-peripheral dummy for the bust regime	α_5	-0.017***
		(0.004)
Capital	α_6	-0.004
		(0.007)
Available collateral	α_7	-0.004
		(0.005)
Industry sector dummy	α_8	0.007**
		(0.003)
Constant	α_0	0.016***
		(0.005)
Observations		5,476
Sargan-Hansen *J* statistic (p-value)		0.361
Kleibergen-Paap Wald (p-value) (H: rank=1)		0.000
Anderson-Rubin Wald (p-value)		0.000

Notes: The IV G2SLS method is used; the dependent variable is the yearly difference in financial debt per unit of the balance sheet; standard errors are reported in parentheses; ***, **, and * denote statistically significant values at 1%, 5%, and 10% on a two-tailed test, respectively; instruments used in the G2SLS version comprise averages of independent variables for the two-digit NACE classification, the company number of employees (rate of growth), sectoral FDI (per unit of value added), and amortisation per employee; Sargan-Hansen statistic is used to test for over-identifying restrictions, Kleibergen-Paap Wald is a test for under-identifying restrictions, and the Anderson-Rubin Wald test is a test for weak instruments.

Sources: Amadeus; official suppliers of microdata for Slovenia, Austria, Montenegro, and the Republic of North Macedonia; Authors' calculation.

All things considered, our regression estimations point to core and financial investments playing a considerable role in the (de)accumulation of firms' debt. This shows that both groups of countries belonged to the same financial cycle. When the countries of former Yugoslavia grew rapidly their firms' investments were high, but they also accumulated high debt. When the growth deteriorated the firms' investments were low, but they also accumulated low debt or even de-accumulated debt. However, there were large differences between the peripheral and the super-peripheral groups of countries because of other predominantly institutional and policy-related factors. In the bust period, due to possible effects of weaker government (and hence a smaller regulatory capacity) and fewer alternatives regarding the non-debt financing of investments (a larger sovereign premium), investment-driven debt increase was significantly less mitigated in the super-peripheral group of countries than in the peripheral group.

2.3.2. The results of the cash flow migration equation

The results of the binominal logit regressions (2) are presented in Table 4 for each year of the observed period 2007–2010. The marginal effects of each explanatory variable on the probability of a positive cash flow status in the one-year horizon, crucial for our discussion, are also added.

The financial debt variable is expected to have no major effect on the liquidity of firms in the boom period. The Modigliani-Miller effect is perceived to work in this occasion. However, the corresponding values of the financial debt variable coefficient in Table 4 are negative and statistically significant in all the years under investigation (and also in the year 2008).[6] In relative terms, increments in debt had a much greater impact on cash flow performance after the beginning of the crisis. In absolute terms, in the bust period the cash flow effects of indebtedness increased (deteriorated); the considerable deterioration in 2010 was especially disastrous.

[6] The evidence for Slovenia confirms that firms with higher debt were squeezed with lower cash flows, and therefore they delayed paying their suppliers even before the financial crisis (Prašnikar, Pahor, and Cirman 2004). Bole (2003) has also shown that a possible external shock, similar in size to the highest domestic shock that had hit the Slovenian economy in the past, could threaten 15% of non-performing debt firms with illiquidity and at least 8% of companies with insolvency.

Table 4: Results of the cash flow migration equation

Cash flow in 2008		Coefficient	Marginal effect
Financial debt	β1	–1.213**	–0.144**
Non-financial debt	β2	–1.934***	–0.230***
Receivables	β3	1.678 **	0.199**
Lack of collateral coverage	β4	0.010	0.001
Manufacturing sector dummy	β5	–0.441**	–0.052**
Super-peripheral dummy	β6	–1.077***	–0.128***
Constant	β0	3.058***	
Observations		1,355	
Cash flow in 2009			
Financial debt	β1	–2.125***	–0.301***
Non-financial debt	β2	–2.164**	–0.307***
Receivables	β3	2.714***	0.385***
Lack of collateral coverage	β4	–0.012	–0.002
Manufacturing sector dummy	β5	–0.483***	–0.069***
Super-peripheral dummy	β6	–0.679***	–0.096***
Constant	β0	2.671***	
Observations		1,450	
Cash flow in 2010			
Financial debt	β1	–2.503***	–0.354***
Non-financial debt	β2	–2.587***	–0.365***
Receivables	β3	2.408 ***	0.341***
Lack of collateral coverage	β4	–0.007	–0.001
Manufacturing sector dummy	β5	–0.527***	–0.074***
Super-peripheral dummy	β6	–0.423***	–0.060***
Constant	β0	2.822***	
Observations		1,376	

Notes: The dependent variable is the cash flow status; status of cash flow: 0 denotes negative cash flow, 1 positive cash flow; manufacturing is an indicator variable for the manufacturing sector; super-peripheral dummy indicates super-peripheral group of countries; all continuous variables are in balance sheet units and relate to the end of the previous year; a weighted regression is used; weights for each country are calculated as the total employment in NACE sectors C, G, H, I, J per number of companies in the normalised sample; standard errors are reported in parentheses; ***, **, and * denote statistically significant values at 1%, 5%, and 10% on a two-tailed test, respectively.
Sources: Amadeus; official suppliers of microdata for Slovenia, Montenegro, and the Republic of North Macedonia; Authors' calculation.

The effects of the current non-financial debt on future cash flow performance are important as well. The corresponding values of the coefficients in Table 4 are negative and significant in all the investigated years. The sizes and time trajectories of the marginal effects of inter-company debt are increasing and are similar to the marginal effects of financial debt. The similarity between the inter-company debt effect and the financial debt effect was especially pronounced in the bust period. The increasing influence of receivables on the cash flow dynamics is also evidenced and lends additional support to the claim that higher inter-company debt became an important factor in the migration of companies to a negative cash flow, especially in the bust period. The direct effect of collateral coverage (defined as debt over collateral) was not significant in any period (see β_4 in Table 4), but its indirect effect through debt was strong and significant (in the bust period). As observed in Table 4, the marginal effects of the manufacturing sector on the probability of negative cash flow in T+1 are negative and increasing.

As expected, the marginal effects of the super-peripheral dummy are negative in all phases of the boom–bust episode. Therefore, in all phases of the crisis the same size of indebtedness deteriorated the cash flow more in the super-peripheral group of countries than in the peripheral group of countries. However, its absolute value decreased from the boom to the bust regime (in 2010 the super-peripheral marginal effect was only 40% of that in 2008), which again documents the possible effects of weaker government (institutions) that was mentioned when discussing the debt build-up process (and is crucial for the differences between the periphery and the super-periphery). Because of the effect of weaker government, in super-peripheral countries the same size of debt deteriorated the cash flow in the bust phase much less than in the boom phase. It therefore made cash flow muddling-through (in the bust phase) much easier in the super-peripheral group than in the peripheral group (countries in the EU or nearing the end of the accession process). After the crisis struck, pressures exerted by regulators (accelerated bankruptcy procedures in banks, state-aid blockades, etc.) and tougher non-credit procedures in banks lessened the possibility of muddling through in the peripheral group of countries considerably more than in the super-peripheral group.

3. THE DYNAMICS OF BANK CREDIT TO HOUSEHOLDS AND FIRMS

The ability to access foreign financial flows is probably one of the two most important factors (weak government being the second) in creating a difference between peripheral and super-peripheral crisis development. In studying these differences it is therefore necessary to also reveal the differences between the periphery and the super-periphery in the mechanism channels intermediating foreign financial flows to the economy. The two crucial channels of foreign financial flows into the economy are wholesale and retail channels. In less developed countries, banks act as crucial intermediators in both. In the wholesale channel, capital flows to banks, and by extension credit flows to households, non-financial corporations, and the government. In the retail channel, capital flows to non-financial companies and the government. After sitting on their bank accounts, banks can extend new credit to households, corporations, and the government. With foreign capital outflows, both channels work in reverse, first by cutting credit, second by increasing deposits in banks or bank deposits with the central bank, and finally in the outflow of capital. The crisis impacts of both channels of foreign capital flows are studied in this section.

Massive capital inflows have been evidenced in the region in the pre-crisis period (Hunya 2009; Koyama 2015; Hoffman and Schnabl 2016). As the movement of foreign inflows greatly influenced the funding of banks either directly through the wholesale channel or indirectly through the retail channel (through the deposits of firms and households), and as it thus also had an enormous influence on the growth of bank credit to households and especially to firms, we constructed a credit model for the open economy which embraces both mentioned channels and explicitly disentangles the demand and supply factors of credit to households and firms (the model is presented in Bole et al. 2020).

3.1. The specification of credit to households and firms

We applied the model to the data on the credit activities of banks in the region. We extended our studied period to 2013 in order to account for drastic capital outflows (to the core EU economies), which severely hampered non-core

European countries. These outflows could be mainly due to the malfunction of the Vienna Initiative,[7] which collapsed in 2011 (see Vienna Initiative 2013).

Below, a reduced and linearised version of such a theoretical model is used as an empirical model. For household and company credit functions it distinguishes supply factors (funding and impairment costs, i.e., the loan impairment charge) and demand factors (nominal GDP growth and regional and regime dummies). Variable b_n is a correction factor describing the ratio between gross and net loans in year t; it is added because not all banks have the same (net) definition of credits. The empirical version of the model is presented in Equations 3 and 4.

$$household\_loans = \gamma_0 + \gamma_2 bank\_funding + \gamma_3 deposits(-1) + \gamma_4 impairments(-1) + \gamma_5 ngdp + \gamma_6 super\_per\_boom + \gamma_7 super\_per\_bust + \gamma_8 super\text{-}per\_recovery + \gamma_9 per\_bust + \gamma_{10} per\_recovery + \varepsilon \quad (3)$$

$$firm\_loans = \delta_0 + \delta_1 b\_n + \delta_2 bank\_funding + \delta_3 deposits(-1) + \delta_4 impairments(-1) + \delta_5 ngdp + \delta_6 super\_per\_boom + \delta_7 super\_per\_bust + \delta_8 super\_per\_recovery + \delta_9 per\_bust + \delta_{10} per\_recovery + \varepsilon \quad (4)$$

where *household_loans* is the yearly change in bank loans to households (per unit of the total balance sheet), *firm_loans* is the yearly change in bank loans to firms (per unit of the total balance sheet), *b_n* is a correction factor,[8] *bank_funding* is the wholesale (bank) funding channel (change in loans due to banks per unit of the total balance sheet), *deposits(-1)* denotes lagged total deposits (per unit of the total balance sheet); *impairments(-1)* denotes the lagged yearly costs of impairment (per unit of the total balance sheet); and *ngdp* is growth of nominal GDP. Variables *super_per_boom*, *super_per_bust, and super_per_recovery* are dummies for non-market factor differences (differences in the institutional and administrative environment and policy changes) between the super-peripheral group of countries and the peripheral group of countries in the three regimes of the developing financial crisis (2007–2008 = boom; 2009–2010 = bust; 2011–2013

[7] The Vienna Initiative, a public-private partnership between European governments, multinational banks, and international financial institutions, to which foreign banks committed themselves to maintain their exposure and keep subsidiaries adequately capitalised in the affected host (less developed, also Balkan) countries in the period of the reversal of capital flows (Sanfey 2011).

[8] Encompassing minor differences between banks in the definition of credit to firms.

= recovery). The peripheral group of countries in 2007–2008 serves as the base. The variable *per_bust* embraces otherwise non-specified differences (predominantly non-market factor differences such as differences in the institutional and administrative environment and policy changes) in the bust period compared to the boom period. The variable *per_recovery* stands for differences in non-market factors (predominantly differences in the institutional and administrative environment and policy changes) in the recovery period compared to the boom period. Finally, ε is the error term.

3.2. Empirical evidence

Our unbalanced panel consists of 120 banks; in the year 2010 it encompasses 20 banks out of 29 in Bosnia and Herzegovina, 30 out of 33 in Croatia, 12 out of 18 in the Republic of North Macedonia, 8 out of 11 in Montenegro, 29 out of 33 in Serbia, and 17 out of 22 in Slovenia. The main source of data was the Bankscope database, which was augmented with hand-collected data from the banks' annual reports. Other variables used come from different sources. Real estate prices and data on FDI inflows were taken from official statistics (IMF 2016; World Bank 2015; Monstat 2015; CBCG 2016; ECB 2015; Statistical Office of the Republic of Serbia 2015). Data on the number of employees, the number of branches, and the number of ATMs were collected from the banks' annual reports and/or websites. Average values of the variables figuring in models (3) and (4) are given in Table 5.

Table 5: Mean of the variables in models (3) and (4)

All countries	2007–2008	2009–2010	2011–2013
Household_loans	0.058	0.010	0.004
Firm_loans	0.108	0.032	0.003
Bank_funding	0.041	0.010	-0.015
Deposits	0.088	0.057	0.029
Impairments	0.010	0.014	0.019
Ngdp	0.130	0.006	0.028
N	214	232	345

Notes: Yearly means (across all banks and indicated periods) of the variables in models (3) and (4); *household_loans* – increment in credits to households per unit of balance sheet; *firm_loans* – increment in credits to firms per unit of balance sheet; *bank_funding* – increment in loans (including government deposits) to banks per unit of balance sheet; *deposits* – increment in deposits of private units in banks per unit of balance sheet; *impairments* – cost of impairments per unit of balance sheet; *ngdp* – nominal GDP growth rate.
Source: Authors' calculation.

Increments in loans to households and firms attained exceptionally high values in the boom phase of the episode, when yearly increments exceeded 5.8% and 10.8% of the balance sheet, respectively.[9] The corresponding increments dropped in the bust phase and especially in the recovery phase by a factor of 10.

The funding dynamics in the boom phase were also extremely high.[10] The yearly increments in loans due to banks per unit of the total balance sheet attained 4.1% of the balance sheet, and the corresponding increments in deposits 8.8% of balance sheet. Both dropped significantly in the bust period, and especially in the recovery period. In the recovery period the dynamics of the funding items were more than three times lower than in the boom period.

The cost of impairment increased from the boom period to the recovery period. In the boom period the cost of impairment stood at 1%, while in the recovery period it rose to 1.9%.

In the boom years the average nominal GDP growth rate in the analysed countries was 13%. It decelerated to near stagnation in the bust years and picked up after 2010 to around 2.8% per year.

3.3. Model estimates

Because retail and wholesale bank funding might be driven by factors that also drive firm and household credit, the instrumental G2SLS estimation method was used. The number of employees, the number of branches, the number of ATMs, equity, and interactions between the mentioned variables were used as instruments. We used panel estimation for the entire period. The results of the empirical estimation of Equations (3) and (4) are given in Table 6.

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9 The EBRD reported that in the pre-crisis period, virtually all countries in the south-east region had four or more years in a row of credit boom, defined as an annual growth in total credit to the economy by more than two percentage points of GDP (EBRD 2009). As shown by Bartlett (2010), in 2009 the credit growth in most of the super-peripheral countries still achieved a two-digit level, which contributed to the over-borrowing of firms and households. However, the crisis contributed to a dramatic slow-down in the growth of credits (Sanfey 2011; Bartlett and Prica 2013).

10 Četković (2015) shows evidence of Yugoslav successor states' dependence on foreign capital funding.

Table 6: Results of the bank credit models

		Loans to households		Loans to firms
Wholesale funding	γ_2	−0.418	δ_2	0.656***
		(0.330)		(0.221)
Retail (deposit) funding	γ_3	0.665***	δ_3	0.335***
		(0.083)		(0.089)
Cost of impairment	γ_4	1.907	δ_4	1.740
		(2.113)		(1.341)
Nominal GDP growth	γ_5	0.062*	δ_5	−0.023
		(0.036)		(0.031)
Super-peripheral dummy for the boom regime	γ_6	−0.000	δ_6	0.051*
		(0.030)		(0.028)
Super-peripheral dummy for the bust regime	γ_7	−0.020	δ_7	0.007
		(0.035)		(0.028)
Super-peripheral dummy for the recovery regime	γ_8	−0.011	δ_8	0.012
		(0.022)		(0.023)
Bust regime dummy	γ_9	−0.035**	δ_9	−0.019
		(0.017)		(0.012)
Recovery regime dummy	γ_{10}	−0.047***	δ_{10}	−0.018
		(0.016)		(0.012)
Constant	γ_0	−0.004	δ_0	0.039*
		(0.021)		(0.020)
Observations		573		533
Sargan-Hansen J statistic (p-value)		0.287		0.170
Anderson-Rubin Wald (p-value)		0.002		0.000

Notes: The IV G2SLS method is used; the dependent variable is the yearly difference in loans to households per unit of balance sheet in the first column and the yearly difference in loans to firms per unit of balance sheet in the second column; panel data; standard errors are reported in parentheses; ***, **, and * denote statistically significant values at 1%, 5%, and 10% on a two-tailed test, respectively; instruments used in the G2SLS estimation consist of the number of employees, the number of branches, the number of ATMs, equity, and interactions between the mentioned variables. Robust tests are used to verify instrument quality: Sargen-Hansen statistics is a test for over-identifying restrictions and Anderson-Rubin Wald is a robust test for weak instruments.
Source: Authors' calculation.

The model for households (3) shows that demand drove credit throughout the entire observed period. Its impact is modest ($\gamma_5 = 0.062$), which means that for each percentage change (increase or decrease) in GDP, the household credits change by more than 0.5% of the balance sheet on average. Specific regime dummies document that crisis-specific changes (for example, additional banking regulator requirements, the switching of banks from 'mark-to-market' to 'mark-to-risk' as credit procedures) significantly decreased credit to households in the bust and recovery periods. The regional dummy effects indicate that in the boom–bust–recovery episode banks in the super-peripheral group of countries did not perform differently than in the peripheral group of countries (dummies are not statistically significant).

On the supply side, retail funding (deposits of non-financial entities and government entities) on average significantly influenced credit ($\gamma_3 = 0.665$) throughout the entire observed period. Its impact on household credit dynamics is on average higher than the impact of wholesale funding ($\gamma_2 = 0.418$), and besides the last coefficient is not statistically significant. The coefficient on the variable costs of impairment is also not statistically significant.

In the model of credit-to-firm dynamics (4) the effects of GDP growth (*ngdp)* on credit to firms are not statistically significant. The specific regime dummy is negative in the bust and recovery regimes, but is not significant. These crisis-phase-specific negative effects are sensible, because after the crisis started, banking regulators drastically increased their supervision requirements and banks also modified/toughened their credit procedures.

Turning to the supply side, it can be observed that wholesale funding is the key driver of credit to firms. The size of the coefficient of the wholesale funding variable is statistically significant and much higher ($\delta_2 = 0.656$) than the coefficient of the retail funding channel ($\delta_3 = 0.335$). This corresponds to the predictions of the theoretical model (Bole et al. 2020). This channel was obviously the main culprit behind the strong acceleration of credit to firms in the boom period. Later, after the collapse of capital inflows to deposit-taking corporations, the same channel worked in reverse with the same intensity and became the strongest credit-contraction factor in both groups of countries, peripheral and

super-peripheral. The coefficient of the cost of impairment is not statistically significant in either equation.

Significant super-peripheral group dummy effects existed only in the boom period. This indicates that the glut of available foreign capital in the pre-crisis boom period presented a rare window of opportunity for lower-rated super-peripheral countries, but less so for peripheral countries, which had (after entering the EU) much easier access to foreign financing also in normal (non-boom) periods. Therefore, the impact of foreign inflows on credit growth in the super-peripheral group of countries was greater than in the peripheral group. The model results indicate that in the bust and recovery regimes, specific super-peripheral effects disappeared. After the bust period the crisis severely squeezed (especially net) foreign financial inflows into not only super-peripheral countries but also peripheral countries.[11] However, bank intermediation amplified the squeezed flows similarly in both groups of countries, because banking sector regulation (under the common auspices of Basel) is as a rule much more aligned among countries, especially regarding defence against the worst crisis effects.[12] Besides, many banks in super-peripheral and peripheral countries are branches of (the same) banks in core EU countries, which means that crisis-specific measures and procedures in banks in peripheral and super-peripheral countries were probably the same.

4. DISCUSSION AND CONCLUSIONS

The paper shows that the financial crisis in Western Europe was transmitted to the countries of former Yugoslavia to a considerable degree. In some countries and specific segments it was also significantly amplified. At the onset of the financial crisis the delayed opening of the economy and the late arrival of international financial markets led to an interaction of the financial accelerator channel, the liquidity channel, the banking credit extension channel (all of which constitute internal sources of crisis amplification), and the capital surge (an

[11] In the bust, even the banks from the core countries experienced a credit crunch in the wholesale credit market.

[12] Regular contacts through BIS, for example, also made such alignment technically much easier.

external crisis-driver). In the crisis such interaction caused a large drop in economic activity, and even a deep recession in some countries.

The main findings of our research, pertaining to all the countries of former Yugoslavia, are threefold. The first concerns the role of the crisis in the wholesale funding of the banks. The wholesale funding of the banks' balance sheets was a key driver of the cyclicality of investments and the debt build-up (unwinding) process in non-financial firms.

The second finding concerns foreign capital reversal effects. A drastic reversal of foreign capital flows, triggered by banks from the most developed EU countries, caused a contagion of illiquidity, which drastically affected all the countries in the region. It led to bankruptcies and liquidation of firms and contributed to 'worst case scenario' decision-making (Krisnamurthy 2010). GDP losses were a direct consequence of such processes.

The third finding relates to the differences in crisis mechanisms in peripheral versus super-peripheral countries in the analysed period. As peripheral countries, Slovenia and Croatia (like other post-transition EU member states) had already implemented (at least formally) the majority of crucial (i.e., market, regulatory, and policy) EU institutions, whereas Serbia, Bosnia, the Republic of North Macedonia, and Montenegro, which could be classified as super-peripheral countries (like other less developed European countries that are not EU members), were still far from implementing the relevant basic institutions, even formally, because they were not engaged in the process of accession.

Looking at the differences in crisis mechanisms in peripheral versus super-peripheral countries, there are two main lessons to be learned, one regarding crisis phases and the other regarding sectors.

In the boom–bust–recovery episode of the Great Recession, the performance of former Yugoslav countries depended a great deal on their periphery versus super-periphery status. In the boom phase, peripheral countries were (in terms of financial stability) better off than super-peripheral countries (in comparison with a normal, de-cycled position) because of their stronger institutions and the weak – or completely absent – policy supervision (constraints) enforced from the center of economic gravity (the EU). Thus, the bank credit and firm indebtedness

binge combined with cash flow deterioration was less pronounced in peripheral countries than in super-peripheral countries. In the bust and recovery phases, when the glut of foreign inflows (external channel) disappeared altogether, both super-peripheral and peripheral countries had to adapt not only to much smaller foreign inflows but also to significant net foreign capital outflows. Therefore, in both groups of countries, internal channels intermediating only scarce own resources severely constrained the performance of economic units (banks, firms, and households). However, the relative advantage of peripheral countries became much smaller than in the boom phase, or disappeared altogether, because in the bust and recovery phases tough measures enforced from the center of the EU (calibrated to the strongest and largest EU economies and based on the doctrines of the most developed core countries), which had to be enforced because of EU membership or commitments, could be considerably avoided by super-peripheral countries. They were able to muddle through by enacting only measures tailored to their own problems, and only those which were sensible to be implemented by their weaker institutions.

In the cross-sector comparison, the relative difference in performance between peripheral and super-peripheral countries was far larger for the real sector (non-financial corporations) than for the financial (banking) sector because regulatory and policy institutions in the banking sector differ the least between peripheral and super-peripheral countries, and because the bulk of the banking sector in Balkan countries consisted of branches of the same (EU) foreign banks.

The question is whether lessons on the periphery-versus-super-periphery crisis effects from the Great Recession could also be relevant for the economic fallout due to the Covid-19 virus. It seems that also in the case of a Covid-19-virus-triggered crisis, in the first phase periphery countries will be in a better position relative to super-peripheral countries, while in the longer term those differences will diminish.

To make lessons for the Covid-19 virus collapse fallout clearer, it is necessary to underline once more crucial relevant facts from the Great Recession. In the boom phase of the Great Recession, relative differences in performance between core and periphery EU countries were much smaller than in the bust and recovery phases. That was the main reason for the decrease in the relative difference in

crisis effects between periphery and super-periphery countries in the bust and recovery periods of the Great Recession (relative to the boom period). Because of the differences in performance between core and periphery countries, policy measures calibrated to the (much better) performance of the core countries were too stringent for the weak performance of the periphery countries. Those too stringent measures 'pushed' periphery countries' crisis effects toward the corresponding crisis effects of super-periphery countries.

Something similar could happen in the Covid-19-triggered crisis. In the first phase of the Covid-19 virus after-effects, differences in performance between core and periphery countries will probably be relatively small, with the more interconnected developed economies possibly being hit even more severely than periphery countries. Thus, EU policy measures (calibrated to the core countries) will also be appropriate for periphery countries. Because of ECB interventions and the strong recovery up until 2019, differences in the sovereign risk premium between core and periphery countries will also be insufficiently large to prevent a large first wave of crisis-driven debt increase in both core and periphery countries. At the same time, already in the first phase of the Covid-19-virus-triggered crisis, super-periphery countries will probably have problems financing the mitigation of crisis effects on firms and unemployment because of the enormous supply of high-rated sovereign debt on the capital market. In the longer run (in the later phases of the Covid-19 virus epidemic[13]), the access of periphery countries to capital markets will probably deteriorate significantly (because of the enormous amounts of government bonds issued in the first phase and the issuing of government bonds by the most developed countries in the second phase), especially because the largest and strongest core members' cumulative increase in indebtedness (dictating the policy of ECB interventions) will probably be much lower than the peripheral countries' cumulative increase of debt, so their problems financing firms and unemployment support will become much more similar to those of super-periphery countries.

[13] Winter 2020/21, for example.

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INCOME INEQUALITY IN TRANSITION ECONOMIES: A COMPARATIVE ANALYSIS OF CROATIA, SERBIA AND SLOVENIA

ABSTRACT: *This paper investigates the relationship between income inequality and different welfare state trajectories that three countries of the former Yugoslavia "south of the Alps" have taken over the three decades since the breakup of the country in 1990. It is remarkable that three countries emerging from a common (socialist) system have experienced diametrically opposing outcomes regarding inequality. Slovenia has one of the lowest levels of income inequality in Europe, Croatia an average level of inequality, and Serbia one of the highest levels. The paper first examines the extent and nature of income inequality in the three countries before examining the determining causes of inequality, rooted in the evaluation of labour markets, education systems, and tax-benefit systems. It concludes that the divergent transition paths have created the different inequality outcomes observed in the three countries.*

KEY WORDS: *Income inequality, Welfare state, Labour market, Education systems, Social protection*

JEL CLASSIFICATION: D31, D63, I24, J51, P52

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INTRODUCTION

This paper investigates the relationship between income inequality and different welfare state trajectories that three countries of the former Yugoslavia "south of the Alps" have chosen over the three decades since the breakup of the country in 1990. These successor states are Slovenia, with one of the lowest levels of income inequality in Europe, Croatia with an average level of inequality, and Serbia with one of the highest levels. This paper examines the key factors that have produced inequalities in these three countries, each of which emerged as independent states almost thirty years ago from the same institutional base in a single country, Yugoslavia. We analyse how subsequent country-specific transition reforms have influenced the diverging levels of income inequality in these three countries. The reforms we investigate are in the policy areas of the labour market, education system, and tax and benefit policies.

When these three countries were Yugoslav republics they shared a generous and inclusive welfare system based on the principles of solidarity and equality. The welfare state was based on a universal public education system and Bismarkian social health insurance and pension provision, combined with in-kind benefits provided by enterprises in which employment rights were protected. Social assistance was provided through a range of family benefits, while the universal health and education systems provided comprehensive services that were mainly free at the point of delivery (Bartlett 2013). In 1976 Yugoslavia had a relatively low level of disposable income inequality with a Gini coefficient of 0.21 for the distribution of net personal income in the social sector (i.e., state enterprises), indicating a very low level of inequality derived from this income source (Flakierski 1989). The inequality in net personal income within the constituent republics of the former Yugoslav federation reflected the overall level of inequality in the country, at 0.23 for Croatia, 0.22 for Serbia, and 0.24 for Slovenia (World Bank online data, various years pre-1990). Despite the similarity in income inequality in the republics, divergence in levels of economic development and income per capita was wide and persistent, and was likely a major factor in the eventual break-up of the federation (Yarashevich and Karneyeva 2013). Another factor was the deep economic crisis that affected the country in the

1980s, which led to a fall in income levels and an increase in the poverty rate.[1] Nevertheless, throughout this period income inequality within the republics remained stable, reflecting the shared reduction in income across the population (Milanović 1991).

After the dissolution of Yugoslavia the welfare regimes of these three countries evolved in different directions, largely influenced by the varied experience of war and conflict, the different privatisation strategies implemented by their ruling elites, and the pace of their EU accession. Slovenia largely escaped the ravages of war in the 1990s and managed a process of gradual transition, preserving many of the previous egalitarian features of the Yugoslav system (Kraft, et al. 1994). It developed a coordinated market economy with strong institutions of wage bargaining between capital and labour, which underpinned its relatively low level of income inequality (Feldmann 2014).

Croatia was embroiled in a devastating armed conflict in the first half of the 1990s. In contrast to Slovenia, Croatia followed a path of rapid transition to capitalism in the early 1990s, privatising much of its industrial sector even while the war of Yugoslav succession was being waged in its territory. However, due to the low income level and the population's inability to purchase all the industrial assets, a form of mixed economy emerged in which the state retained a minority stake in many companies. This close involvement of the state in the economy led to the emergence of a system of political capitalism, in which political parties maintained a close involvement with the business sector (Bartlett 2018). The leaders of industry were closely networked with the ruling party in a system of 'crony capitalism' (Ivanković 2017), which inhibited the emergence of a dynamic entrepreneurial economy and led to a long period of stagnation and post-crisis recession after 2008. This type of mixed economy led to an inequality that is similar to the EU average.

[1] The poverty rate rose from 12.8% in 1983 to 25.7% in 1985, stabilising at that rate thereafter. "The descent into poverty for the already established urban population was, among other things, associated with the inability to procure replacements for worn out consumer durables. Televisions, washing machines, and other consumer durables suddenly became too expensive for an ordinary household. Increased rents and electricity bills sharply compressed the affordable standard of living below the accustomed level. This reversed the standard of living to a level that households might have had some 20 years earlier." (Milanović 1991:197)

Although Serbia was involved in the wars of Yugoslav succession in the early 1990s, it initially avoided armed conflict in its territory. However, UN sanctions in the 1990s and intense NATO bombing during the Kosovo war in 1999 severely damaged its economy. A legacy of the sanctions regime was the emergence of a form of political economy in which patronage networks cornered strong positions in the economy (Andreas 2005; Gould and Sickner 2008), leading to a system of state capture that has become prevalent throughout the Western Balkan region (Keil 2018). After 2000 a rapid privatisation policy was implemented in which unscrupulous buyers engaged in asset stripping and tunnelling purchased assets at low prices (Vujačić and Petrović Vujačić 2016). The best businesses were sold off, while the least productive firms and bankrupt enterprises remained on the books of the privatisation agency. This placed the huge burden of financing these loss-making enterprises on the state, while also providing a fertile breeding ground for the practice of clientelism and creating a large group of outsiders employed on low wages in the extensive informal economy (Cvejić 2016). Serbia became a 'candidate' for EU membership in 2013, the same year that Croatia became a member state (Uvalić 2010).

These different experiences led to different versions of capitalism in the three countries, and correspondingly different experiences of inequality.

INEQUALITY IN THREE COUNTRIES

Inequality in transition economies is generally thought to increase in the early stages of transition as resources shift from the state sector to the emerging private sector and the wage gap is widened by deregulation and liberalisation, reflecting the operation of market forces. This process is thought to come to an end as transition is completed, when wages eventually reflect the marginal products of workers' characteristics (education, age etc.) and competition restrains further wage disparity.

This process is reflected in the three countries studied in this paper. In Slovenia, Stanovnik and Verbić (2014) show that income disparity increased after independence up to 1993, but stabilised thereafter. They argue that this can be attributed to the introduction of a minimum wage, as well as effective tripartite wage bargaining managed through an Economic and Social Council. Wage inequality even decreased after 2005, partly due to income tax reform in 2005 and differentiated tax allowances in 2008.

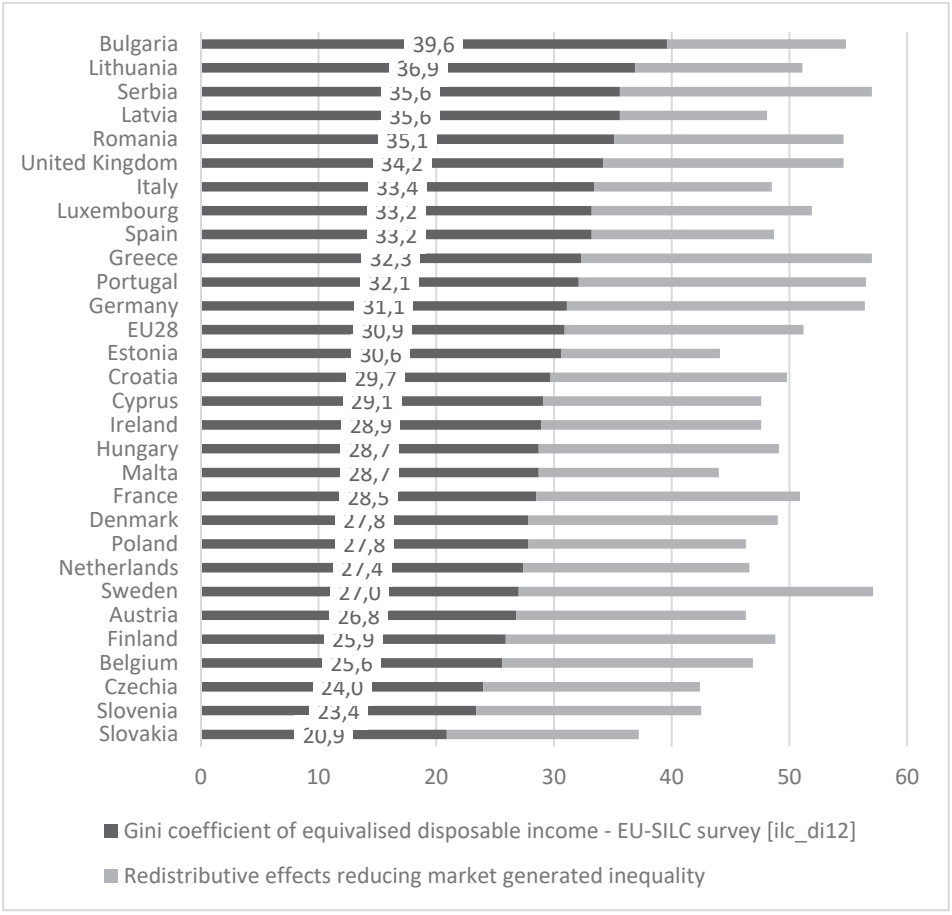
In Croatia, early measures of inequality after independence based on the Household Budget Survey showed an increase in the Gini coefficient of income per household member from 0.276 in 1988 to 0.298 in 2002 (Nestić 2005). Taking a longer perspective, and using a variety of data sources, Hoffman et al. (2012) demonstrated that the Gini coefficient for wage inequality increased from 0.237 in the socialist period (from 1973 to 1988) to 0.277 during the early period of transition and conflict (1989–1995), and further to 0.308 during the later period of transition to a capitalist economy (from 1996 to 2008), finishing the latter period at 0.333 in 2008 just prior to the onset of the global economic crisis, which affected Croatia badly. The authors propose that this increase in wage inequality is consistent with increased returns to skills, and thus reflected an efficiently operating market economy (Hoffman et al. 2012: 216). The increase in market inequality in Croatia is shown to be greater than comparable measures in Slovenia, while the redistributive effort was lower (Čok et al. 2013).

Inequality in Serbia increased throughout the 1990s, even more than in Croatia. Krstić (2016) shows that the Gini coefficient reached 0.387 in 2013. She argues that this was due to the low work intensity of household members and the high proportion of people working in part-time, temporary, and self-employment arrangements, mostly in the informal sector. Kecmanovic (2012) calculates men's wage inequality as 0.315 in 2005, driven by changes in wage premiums. This represents a slight fall following the introduction of a minimum wage in 2000 by the new democratic government. As shown in more detail below, with the exception of pensions, direct taxes and social benefits have had a relatively low redistributive effect in Serbia due to the low coverage of social transfers, particularly monetary social assistance and child benefits, and the Serbian income tax system's very low level of progressivity.

Measures of inequality can now be compared based on the EU Survey of Income and Living Conditions (SILC) for Slovenia, Croatia, and Serbia. The SILC provides data on the inequality of market income (i.e. income before taxes and transfers) and inequality of equivalised disposable income (i.e. income after taxes and transfers) in the three countries on a comparable basis. As can be seen from Figure 1, in 2018 Serbia had the third-highest inequality of equivalised disposable income in Europe and Slovenia had the second lowest, while Croatia's inequality level was close to the EU average. Market inequality in Serbia was 22 Gini points

higher than in Slovenia, while in Croatia it was 8.9 points higher. After redistribution through the tax and benefit systems the level of inequality was much reduced in all countries, although the relative position of these three countries remained the same. The gap between the three countries was somewhat reduced by the redistributive effect of taxes and benefits, but remains large.

Figure 1: Gini coefficient of equivalised disposable income and redistributive effects of social transfers, 2018



Source: *Eurostat online data variable code [ilc_d12]. Note: the sum of the Gini for equivalised disposable income and redistributive effects is the market-generated Gini coefficient for total equivalised income.*

The effect of redistributive policies in the three countries can be measured by the gap between market income inequality and disposable income inequality. In Serbia the inequality in equivalised disposable income was 24.2 Gini points below its total market income inequality, which indicates a significant redistributive effort. By comparison, the reduction in Gini points due to redistributive effects was lower in Croatia at 18.9 and in Slovenia at 19.4. Overall, despite a considerable reduction in Gini inequality through the redistributive power of the tax benefit system in Serbia, the initial market inequality in Serbia was so high that the redistribution effect was insufficient to influence the country's overall relative position. After redistribution the inequality of disposable income in Serbia was 14.5 Gini points higher than in Slovenia, while in Croatia it was 6.7 points higher (see Figure 2). Thus, even after redistribution, disposable income inequality was still extremely high in Serbia, in fact the third highest in Europe, while disposable income inequality in Slovenia was the second lowest in Europe.

Data from the SILC surveys for 2016 reveal that wages constitute the largest part of total gross income in each country, ranging from 59% in Serbia to 68% in Slovenia. Income from self-employment accounts for between 9% of total income in Croatia and 5% in Slovenia. Public pensions are the second-largest income source in each country, being largest in Serbia at 20% of gross income, just 14% in Slovenia, and 19% in Croatia. Social transfers other than pensions range from 8% in Croatia to 11% in Serbia. Correspondingly, the share of taxes and social security contributions is highest in Serbia and lowest in Croatia.

Krstić (2019) explores which sources of income (wages, self-employment income, pensions, taxes and benefits) have been the most important in contributing to income inequality in the three countries, using SILC survey micro-data. She applies the factor source decomposition approach developed by Lerman and Zityhaki (1985). Not surprisingly, considering their large contribution to total income, gross wages make the largest contribution to inequality. The second largest source contributing to overall inequality is income from self-employment in Croatia, pensions in Serbia, and income from capital in Slovenia. Pensions reduce inequality in each country, the largest impact being in Serbia. However, the contribution of social transfers other than pensions differs between the three countries: while they reduce inequality in Slovenia and Croatia (although on a small scale in Croatia), in Serbia social transfers favour the poor more than any

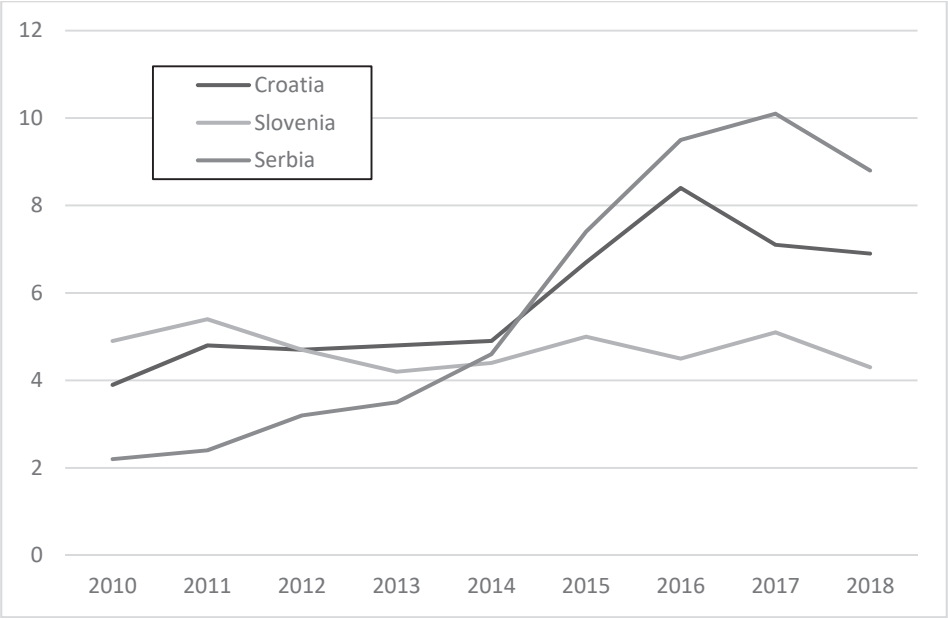
other income source, but nevertheless the amounts are higher for higher-income households in absolute terms (Krstić 2019). Finally, taxes and social contributions reduce inequality in all three countries, with the largest effect in Slovenia. In conclusion, Slovenia's lower disposable income inequality compared to Serbia (and Croatia) can mainly be explained by the more equal market-determined income distribution in Slovenia, combined with a higher redistributive capacity of taxes and social transfers. Overall, the Slovenian tax system is more progressive than in Croatia or Serbia, and social transfers are better targeted at the poor.

In the rest of this paper we delve deeper into the causes of wage inequality by exploring the role of labour market institutions in the next section and education systems in the following section, in each of the three countries. We also identify key differences in each country's social welfare system in order to better understand the causes of the different impacts of redistributive policies related to social transfers and pensions in each of the three countries.

LABOUR MARKETS

Since wage disparity makes the largest contribution to income inequality in the three countries, we explore the ways in which differences in labour market institutions contribute to the dispersion of wages. In each of the three countries the labour markets have performed poorly in recent years as a spillover effect of the eurozone crisis (a direct effect in Slovenia, which has adopted the euro as its currency), leading to high levels of youth unemployment. On the whole, Slovenia has the best labour market performance, with overall higher activity rates and employment rate and lower unemployment rates than in Croatia and Serbia. In 2018 the unemployment rate in Slovenia was 5.1%, compared to 8.2% in Croatia and 12.9% in Serbia (see Table 1 below). The proportion of workers in precarious employment has also been fairly stable in Slovenia but has increased in Croatia and Serbia over the last decade, reaching the highest levels in Serbia in 2017 (see Figure 2). As indicated in the previous section, wage inequality, determined by labour market institutions, is the predominant effect on income inequality, as also found in previous studies of transition economies (Milanović 1999, 2003; Mitra and Yemtsov 2006).

Figure 2: Precarious employment (% total employment)



Source: *Eurostat online data*

Labour market institutions such as wage bargaining systems have a large role to play in determining wage inequality. However, the effect of wage bargaining systems on the dispersion of wages is ambiguous as it depends on the number of workers who are covered by collective agreements. Wage-setting institutions that normally reduce wage disparity by reducing the 'skills premium' may have different effects when the labour market is segmented. Union power and coordinated wage bargaining might reduce wage disparity for workers covered by trade union agreements (insiders), while increasing downward wage flexibility for workers who are not covered by such agreements (outsiders, or those in the informal sector).

The Slovenian labour market has been governed by an effective wage bargaining system through the tripartite social bargaining mechanism (Feldmann 2014). The tripartite institutions were established at a national level in 1994, early in the transition process (Bembič 2018). Consequently, collective bargaining coverage

is highest in Slovenia, reaching 71% of the labour force in 2016.[2] By contrast, only 47% of employees in Croatia are covered by collective bargaining agreements. In Serbia collective bargaining coverage was 55% in 2010 but more recent data is unavailable: it is likely that it has fallen, mimicking the situation in Croatia. Almost all employees in the public sector are covered by collective bargaining, whereas in the private sector it is non-existent (European Commission 2017). Since about 30% of employees work in the public sector in Serbia it is likely that this reflects the proportion of employees covered by collective bargaining agreements.

Overall, Slovenian trade unions are more functional and more likely to obtain the desired outcomes, and as such are more powerful than those in the other two countries. Union density is higher in Slovenia than in Croatia and Serbia. According to the 2020 European Working Conditions Survey, 59.2% of employee respondents in Slovenia reported having a trade union representing them in the workplace, compared to just 45.2% in Croatia and 41.4% in Serbia.[3] Although the public sector trade unions in Croatia are relatively strong, in the private sector they are weak.

Given these patterns of the labour market institutions, the wage inequality outcomes have been predictable, with a less equal wage distribution in Serbia and Croatia than in Slovenia. Serbia has a particularly weak labour market. Using SILC survey data, Krstić (2016) finds that employees' income inequality in Serbia is related to the quantity and quality of employment, given that almost 50% of those in the lowest income quintile live in households with very low work intensity. Self-employed and part-time workers are most exposed to poverty risk, while many of the self-employed are informal workers who are outside the social protection system, earning one-fifth less than formal workers (Krstić & Sanfey 2011). Many part-time workers are employed in the informal sector, partly because part-time employees in the formal sector face very high marginal tax rates

[2] Data drawn from ILO online database: https://ilostat.ilo.org/data/

[3] See European Foundation for the Improvement of Living and Working Conditions (EUROFOUND) European Working Conditions Survey 2020, online data: https://www.eurofound.europa.eu/data/european-working-conditions-survey

due to the low progressivity of the Serbian tax system. By contrast, Slovenia has a progressive personal income tax system.

Policy has also contributed to differences in wage inequality between the three countries. Slovenia has made great strides towards introducing a policy of flexicurity in the labour market (Lissowska 2017). Labour market reforms have proceeded slowly in Croatia (Matković 2017). Labour market institutions in Serbia have proved hard to reform due to the limited role of social partners, weak administrative capacity, and an absence of policy coordination. However, recent Serbian labour market reforms agreed under an IMF Stand-by Arrangement have encouraged greater labour market flexibility and have neglected the flexicurity arrangements prevalent in Slovenia. Consequently, they have had significant adverse consequences for income equality.

EDUCATION SYSTEMS

Besides labour market institutions, education systems also play an important role in determining market inequality. Education provides skills that are valued on the labour market as skills premia, and in competitive labour markets skill dispersion should be reflected in wage dispersion. Education systems are the fundamental means of skills development, although on-the-job learning is also important. Unequal access to educational opportunities is therefore an important determinant of the supply patterns of skilled labour and wage inequality. When the demand for high skills or high educational qualifications increases faster than the supply an increased pay level is expected for such skills, and equivalently for lower skill levels.

Reflecting this process, after the onset of transition the general level of pay for higher skilled workers in Slovenia increased as market forces gained more traction in the labour market than had been the case under the former socialist system (Orazem and Vodopivec 1995). However, over time the Slovenian educational system generated a greater supply of skilled workers and these skill premia began to fall, leading to less pronounced pay disparity (Bartolj et al. 2013). Reforms introduced in 1999 introduced new vocational programmes and a flexible vocational education system, which underpinned an increased and adaptable supply of skilled workers. This has been reflected in improved educational outcomes. The average PISA test score in Slovenia was 495 in 2018,

compared to 479 in Croatia and 439 in Serbia. Similar differences were recorded in relation to maths and science scores.[4] At the tertiary level, Slovenia rapidly expanded its supply of higher education graduates so that by 2018 some 36.3% of the population aged 25–54 had a higher education degree, compared to just 27.9% in Croatia and 25.7% in Serbia.[5] Moreover, the general collective agreements in Slovenia specified minimum and maximum pay levels for workers with different skill levels, differentiated according to sectoral agreements (Adams et al. 2017). This further muted the extent of market-determined wage inequalities in the labour market.

By contrast, Croatia and Serbia failed to introduce equivalent educational reforms and their vocational education systems have been unable to respond effectively to the large structural changes that have followed the transition process (Teodorović et al. 2016). School leavers in these countries face a challenging transition to the labour market. Kurelić and Rodin (2012) have shown that higher educational reforms have had little success in Croatia. As can be seen in Table 1, labour market indicators are more favourable for those with higher education in all three countries, progressively improving across educational levels. Particularly notable are the high activity and employment rates for tertiary-level graduates in Slovenia, and the correspondingly low unemployment rate (in 2018 just 3.7% for those with tertiary education, compared to 11.0% in Serbia). In Croatia, activity and unemployment rates are particularly unfavourable for those with only primary-level education or less. In Serbia the unemployment rate does not follow the same gradient of improvement with education level as in the other two countries. An upper secondary education graduate in Serbia has the same chance of being unemployed as a school leaver with only primary education or less. This indicates the weakness of the educational system in Serbia in comparison with the other two countries, reflecting as much as anything the role of upper secondary-level vocational education, which in Serbia is particularly weak in providing skills that support access to the labour market (Bartlett et al. 2014).

[4] The PISA 2018 maths scores for Slovenia, Croatia, and Serbia were 509, 464, and 448 respectively, while for science the scores were 507, 472, and 440.

[5] Eurostat online data variable [edat_lfs_9904].

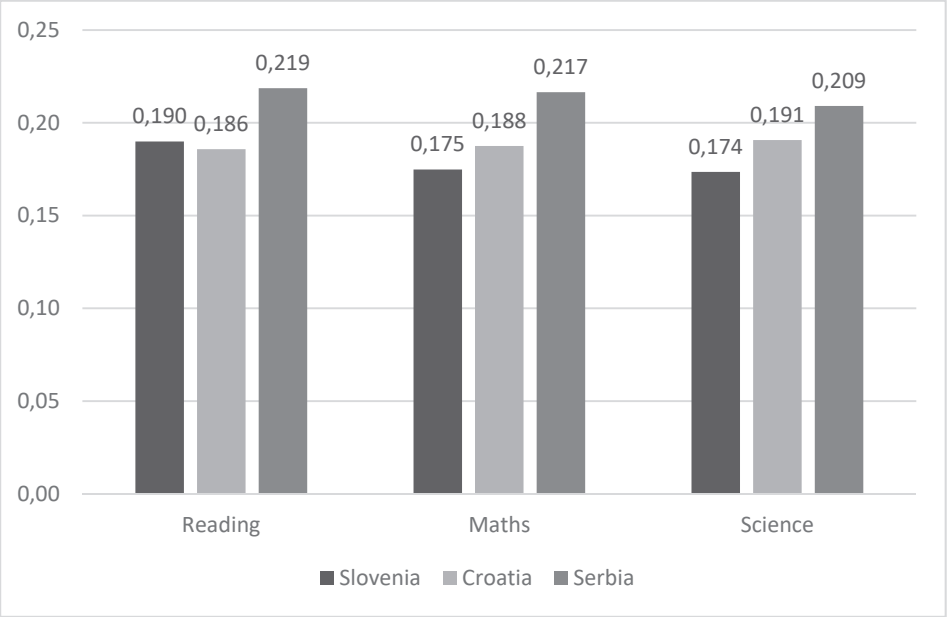
Table 1: Labour market indicators by educational level in 2018, 20–64 year olds (%)

	Activity rate			Employment rate			Unemployment rate		
	Croatia	Serbia	Slovenia	Croatia	Serbia	Slovenia	Croatia	Serbia	Slovenia
ISCED 0-2 (primary or less)	42.4	58.2	56.0	37.2	50.1	50.8	12.1	13.9	9.2
ISCED 3-4 (upper secondary)	71.3	71.3	78.0	65.1	61.6	73.7	8.6	13.6	5.5
ISECD 5-8 (tertiary)	86.8	87.4	91.3	81.5	77.8	88.0	6.1	11.0	3.7
All ISCED 2011 levels	71.0	72.5	79.5	65.2	63.1	75.4	8.2	12.9	5.1

Source: *Labour Force Surveys, Eurostat online data*

Moreover, access to educational opportunities differs across countries. In transition economies, inequality in access to education, training, and employment typically leads to young people being socially excluded (Kogan and Unt 2005). Secondary schools in the Yugoslav successor states continue to select students on the basis of ability as measured in performance tests at primary school, which leads to the allocation of the brightest students to grammar schools (known as gymnasia), the best vocational schools, and the most popular courses. While apparently offering equal opportunity to all students, those from disadvantaged backgrounds are more likely to fail such selection processes and to be directed toward schools with lower entry criteria. Consequently, children of middle-class parents are more likely to enter gymnasia, while children of working-class parents are more likely to enter VET schools, which tend to be less well-resourced, leading to poorer quality education for these groups (Bartlett et al. 2014).

Figure 3: Coefficient of variation in 2018 PISA test scores of 15 year olds in reading, maths, and science



Source: *OECD PISA 2018 online data*

Such inequality in educational outcomes is more evident in Serbia than in Slovenia, with Croatia occupying an intermediate position. Figure 3 compares the coefficient of variation in PISA 2018 scores in the three countries and demonstrates that Serbia has the highest variation in maths and science test scores, while Slovenia has the lowest variation in all three subjects. This suggests that skill-related income dispersion may be related to the pattern of educational inequality, which may in turn be related to inequality in access to educational opportunities. Social differentiation may occur at entry into secondary school, which may then lead to intergenerational transmission of inequality. This process has been evidenced in Croatia, where students who attend VET schools are predominantly from low-income families with a low level of parental education, low motivation, and low learning outcomes (Matković, et al. 2013). Also, in Croatia at the tertiary level the children with a more privileged family background have a greater chance of attending university (Doolan et al. 2018). The social reproduction of inequality is also evidenced in Serbia by the high proportion of children attending vocational schools whose parents also attended such schools

(Bartlett et al. 2014). These socio-economic differences in family background play out in the PISA 2018 test scores. For example, whilst in Serbia 51.4% of low performers in reading (defined as achieving level 2 or below) come from the bottom quarter of households by economic, social, and cultural status, only 28.9% of low performers in reading in Croatia and 26.2% in Slovenia come from low socio-economic status households.[6] Additionally, 56.8% of students in Serbia with a low socio-economic profile attend schools whose principals consider that their school's capacity to provide instruction is hindered by inadequate or poor physical infrastructure, compared to 47.0% in Croatia and just 27.8% in Slovenia.[7] Thus, access to adequate educational opportunities is far more dependent on socio-economic class in Serbia than in Slovenia, with Croatia in an intermediate position, reflecting the market income distribution ranking of the three countries. This suggests that educational opportunity has a profound influence on inequality in the three countries.

SOCIAL PROTECTION SYSTEMS

Education and labour market distortions go a long way towards explaining the difference in the distribution of market wages in the three countries. However, this market distribution is subject to policy measures that redistribute income through tax and the benefit system. For example, Čok et al. (2013) find that Croatia has a higher level of post-tax income inequality than Slovenia due to the combination of higher pre-tax income inequality and a less redistributive tax and benefit system. Therefore, in this section we trace the different approaches to redistributive policies in the three countries.

Reforms to tax and benefit systems in Slovenia and Croatia have embraced a progressive personal income tax code, whereas income tax reforms in Serbia introduced a flat tax system (Žarković Rakic 2015; Arandarenko and Vukojević 2008). Slovenia introduced a very progressive personal income tax (PIT) system, similar to those in European Union countries, with five tax brackets, marginal tax rates of between 16% and 50%, and several tax allowances. The system was in place until 2004, when discussion emerged both in expert circles and the wider public concerning the necessity to simplify the tax code. With the start of the

[6] See OECD PISA 2018 Results Volume II, Table II.B1.2.6, OECD 2019

[7] See OECD PISA 2018 Results Volume II, Table II.B1.5.22, OECD 2019

economic crisis in 2008, PIT reforms decreased the tax burden of low-income individuals (Čok et al. 2011). Croatia has rejected flat tax proposals and retained a progressive personal income tax with several tax brackets, with corresponding tax rates of 15%, 25%, and 35%. By contrast, in Serbia the personal income tax system introduced in 2001 was based on a 10% flat tax, which lacks both vertical and horizontal progressivity since the tax paid depends more on the type of income than on the size of income (CLDS 2003). A mandatory minimum social security contribution base is set at 40% of the average gross wage, so someone working part-time at the minimum wage could pay contributions on an income threshold higher than actually earned.

The three countries have evolved very different pension systems. The most radical pension reforms were introduced in Croatia, as recommended by the World Bank (Bartlett and Xhumari 2007). Under these reforms, a compulsory privately funded pension pillar was introduced. However, the pension reform did not succeed in eliminating the fiscal deficit, which had been one of its purposes (Šonje 2011). Serbia and Slovenia both rejected World Bank recommendations to introduce a compulsory private pillar into their pension schemes (Orenstein 2008). Both countries retained the Bismarkian state-managed system with contributions related to wage and salary levels. In Serbia, reforms introduced in 2003 replaced defined benefit pensions with a points-based system related to years of service indexed by prices (the least generous form of indexation), with a low minimum pension, supplemented by voluntary private pensions. Pensions have led to substantial reductions in market-determined inequality in Serbia (Djindjić 2014). The existence of the minimum pension, although extremely low at just 25% of the average wage, is the main reason why the Serbian pension system has a larger redistributive effect than the other two systems. In Slovenia the generous defined benefit public pensions indexed by wages have been complemented by a means-tested safety-net state pension of last resort (Guardiancich 2010). In Croatia the public pension pillar is indexed by a mix of prices and wages and there is no minimum pension.

In Slovenia, social assistance benefits have been gradually increased since 2001 (Kump et al. 2011). Child benefit coverage is extensive and the benefit near universal, as 86% of children receive it. Coverage has been gradually increased and the benefit design changed in order to direct it more at lower income groups.

In Serbia, spending on social assistance benefits has fallen from 1% of GDP in the early 2000s to 0.6% of GDP in 2017, far below the EU average of 1.3%. In Croatia social assistance benefits amount to 1.5% of GDP (Žarković Rakic et al. 2017). Spending on poverty-reducing cash transfers is relatively low in Serbia compared to Croatia and Slovenia (Žarković Rakic et al. 2017), with consequent implications for its tax and benefit systems' capacity to reduce income inequality. Krstić (2016) shows that social transfers have reduced inequality in Serbia as measured by the Gini coefficient to a greater extent than taxes, but by far less than similar transfers in most EU countries.

CONCLUSIONS

In this paper we have shown that income inequality increased following the transition to a market economy in the 1990s and 2000s in three of the successor states of former Yugoslavia. Yet in Slovenia, where the reforms were more gradual, the increase in inequality was more moderate than in Croatia and Serbia. In Slovenia the labour market institutions were more consensual and have been described as instituting a coordinated market economy. Strong social partners, including trade unions, and a culture of dialogue and consensual policymaking contributed to a philosophy of gradualism in the transition process and to the preservation of a range of social rights in Slovenia. In recent years, precarious forms of employment have become more prevalent in Croatia and Serbia than in Slovenia. The process of EU accession and Slovenia's early EU membership also supported the harmonisation of social and labour legislation with the EU acquis communautaire.

Education and skills are a strong predictor of wages in all three countries. According to SILC 2016 data, returns to tertiary education are higher in Slovenia than in Croatia and Serbia. However, the education system in Slovenia supports greater equality of access to students from lower socio-economic groups than in the other two countries, while the education systems in Croatia and Serbia have lagged behind Slovenia in reforms. This is reflected in the variance in PISA test scores, which is mainly lower in Slovenia than in Croatia and Serbia. Moreover, higher education has become more widely dispersed throughout the Slovenian population than in the other two countries. All this has contributed to a lower level of wage inequality in Slovenia than in the other two countries.

The process of europeanisation also improved the quality of policy debates among social policy actors in Croatia, while in Serbia the social inclusion paradigm came later, with little impact on welfare reforms. The tax and benefit regimes introduced in Slovenia have been relatively egalitarian and progressive, while in Serbia these redistributive mechanisms have been regressive for a long time and have failed to have a substantial impact on inequality. While the pension scheme in Serbia has a large redistributive effect, on its own this is insufficient to tackle the serious problem of inequality in that country.

It is remarkable that three countries that emerged from a common economic system have experienced such divergent experiences in the evolution of their labour markets and systems of education, tax, and social protection, with diametrically opposing outcomes for inequality. The relatively low level of inequality in Slovenia can ultimately be traced back to the relatively gradual approach to transition and the country having been fortunate in avoiding the same degree of disruption due to war and UN sanctions as suffered by the other two countries. Moreover, Slovenia preserved a consensual approach to wage bargaining with a successful model of tripartite social partnership. In Croatia, on the other hand, a rapid process of transition under wartime conditions led to the transfer of large portions of industrial assets to tycoon owners who typically stripped their enterprises of productive assets, rather than engaging in productive entrepreneurship to improve competitiveness. Alongside an unreformed education system, this has led to poor labour market outcomes, although the effect on inequality has been muted, leading Croatia to replicate the average level of inequality in Europe. In Serbia, weak labour markets, an unreformed education system, and the capture of the economy by politically connected actors has led to a form of political capitalism in which the income inequality that has emerged is one of the highest in Europe. Although the unreformed state pension scheme has had a large redistributive impact, this has not been enough to counter the relatively high inequality levels generated by market forces.

In conclusion, the combined evolution of labour market institutions, education systems, and tax and benefit systems has created divergent paths of inequality in three countries that emerged thirty years ago from a common socio-economic system, demonstrating the importance of policy reform over initial conditions in generating economic outcomes from the transition process.

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THE MINIMUM WAGE AS A WAGE EQUALITY POLICY: EVIDENCE FROM NORTH MACEDONIA

ABSTRACT: *The paper aims to investigate if the minimum wage increase of September 2017 resulted in better wage equality in North Macedonia. The increase of 19% was sizable and included levelling up in the three sectors with a lower minimum wage: textiles, apparel, and leather. We extend the 'cell' approach of Card (1992a) and rely on data from the Labour Force Survey 2017 and 2018. The results suggest that the 2017 increase in the minimum wage had a positive, significant, and robust effect on wages. However, the wage increases were almost entirely positioned on the left side of the wage distribution and implied wage compression up to or around the minimum wage. The bunching around the new minimum wage level 'equalised' workers: those who previously earned the new minimum wage level equalised with the less productive workers who approximated their wage only by the power of the law. Hence, wage equality improved. The results confirm that the minimum wage can be an important wage equality policy, with considerably limited upward spillover effects in the current policy and institutional setup.*

KEY WORDS: *minimum wage, spillover effects, North Macedonia*

JEL CLASSIFICATION: J31, E24

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1. INTRODUCTION

In 2012, following a consultative process with social partners, the government of North Macedonia established a statutory minimum wage (MW) for the first time. A lower MW remained in place for three low-paying economic sectors: textiles, apparel, and leather. Initially this lower MW was to remain in place for three years, but the period was extended until 2017. There were a few modest increases between 2012 and 2016, and then in September 2017 the new government increased the MW to 12,000 MKD, a sizeable 19% hike. It also levelled up the minimum wage in three low-pay economic sectors, resulting in an even higher increase of 25%.

The stated policy objective of the move was twofold: first, to improve the living standard of low-paid workers by directly increasing their wages; and, second, to induce a so-called 'wage spiral', i.e., a spillover effect on other wages in the economy. The latter in particular has been emphasised as a basis for wage-led growth, following underconsumption theory (see, for example, Bleaney 1976 and Baran and Sweezy 1966). The move aroused a heated debate, dominated by employers who argued that such hikes were unsustainable and would lead to job losses. Therefore, to invalidate employers' concerns a government subsidy was introduced for the first year following the MW increase to compensate for the MW hike – which, however, remained largely unused, while the concept of wage-led growth remains a subject of dispute in the general public discourse.

The literature agrees that the main role of the MW is to ensure decent living standards for low-paid workers and their families (ILO 2012, 2016). Moreover, the MW can act as a redistributive tool and an automatic stabiliser, can support aggregate demand, and is associated with poverty reduction (ILO 2008). In addition, the existence of and increases in a MW can reduce wage inequality. Evidence from around the world shows that a MW can reduce both wage inequality within firms (by compressing the wages in the lowest-paying businesses) and between firms (through increasing the average wage of the lowest-paying enterprises) (ILO 2016). However, the intention of inducing a 'wage spiral' may well contradict this argument since a wage spiral could actually aggravate inequality.

The debate about if and how the MW can act as a policy for promoting wage equality is fairly new and dates back to the seminal contribution of DiNardo et al. (1996). They found that the federal minimum wage in the US 'held up' the lower tail of the US earnings distribution in 1979, which then declined in the following decade. Over the same decade the MW also declined. The authors provided evidence that this deteriorated wage equality. Lee's (1999) influential study reaches similar conclusions and complements this analysis, concluding that spillover effects from a declining MW explained much of the increased dispersion throughout the wage distribution in the 1980s. Since these seminal papers, not much research has been done on the impact of the MW on wage inequality. Autor et al. (2016) corroborate Lee's (1999) findings, despite finding the more recent effect to be substantially smaller. They also conclude that spillover effects are indistinguishable from measurement error. However, in the case of Brazil, Engbom and Moser (2017) identify a spillover effect with a compression up to the 75th wage percentile.

The objective of the current paper is to assess whether the latest increase in the MW affected workers' wages and wage equality in North Macedonia. We are agnostic with regard to the potential effect of the MW increase on wage equality because the limited literature on the issue asserts that the natural objective of MW policy is to improve wages in the lower tail of the distribution, hence improving wage equality, while the government's stated objective of inducing a 'wage spiral' implies that upward MW spillover may actually aggravate wage equality, or attenuate it at best. We assess this empirically by extending Card's (1992a) 'cell' approach. We use data from the two waves of the Labour Force Survey (LFS) just before and just after the September 2017 MW increase.

The results suggest that the 2017 MW increase in North Macedonia had a positive, significant, and robust effect on wages. The MW increase is clearly associated with wage increases, despite these having been almost entirely nested on the left side of the wage distribution. This implies that wages grew, but only up to and around the new MW level. This further implies that bunching around the new MW level 'equalised' workers: those who had previously earned the new MW level were now equal with the less productive workers who gained that wage level according to the law. This then generated wage compression, which resulted in favourable wage equality outcomes. The latter is corroborated by an observed

decline in the median decile to first decile ratio, but not in the ninth decile to median decile ratio. Hence, the results show that the MW can be used as a wage equality policy, rather than as a means to induce an upward 'wage spiral'.

This paper makes many contributions to the sparse literature on the subject. First, it is one of the few studies on the topic in a transition economy, where the minimum wage has a short history. Second, while existing studies use cross-section and time variation to identify the effect of the MW on wages, we are constrained to individual micro-data spanning two periods only and arrive at a convincing identification strategy by relying on the 'cell' approach of Card (1992a) and its subsequent development. The third and largest contribution of this paper is its relevance for policymaking. By providing evidence of wage 'equalisation' we invalidate the assumption that wage-led growth may be a viable development strategy in the current setting.

The paper is structured as follows. Section 2 presents the underlying data and presents stylized facts about wages and wage inequality in North Macedonia. Section 3 presents the methodological construct. Section 4 presents the results and discussion. Section 5 presents some robustness checks. Section 6 concludes.

2. DATA AND STYLIZED FACTS

We use two cross-sections of data from the Labour Force Survey (LFS) for the first quarter of 2017 and the first quarter of 2018. The LFS is a quarterly rotating panel survey that collects detailed data on the work and unemployment experiences of about 12,000 working-age (15–79) individuals per quarter, and is nationally representative. The two data sets cover the period just before and just after the latest amendments to the MW Law in September 2017, when the MW increase became effective. Although the data used was from the first quarters of 2017 and of 2018, for reasons of brevity we refer to this quarterly data simply as data for 2017 and 2018.

It is important to note that the key variable in our analysis is the self-reported wage. In the LFS the respondent was asked, "How much was your last net wage or income from your main job?" Thus they were asked to specify the exact amount, but were also given the option of indicating one of the following intervals: less than 5,000 MKD; 5,001–8,000 MKD; 8,001–10,000 MKD; 10,001–

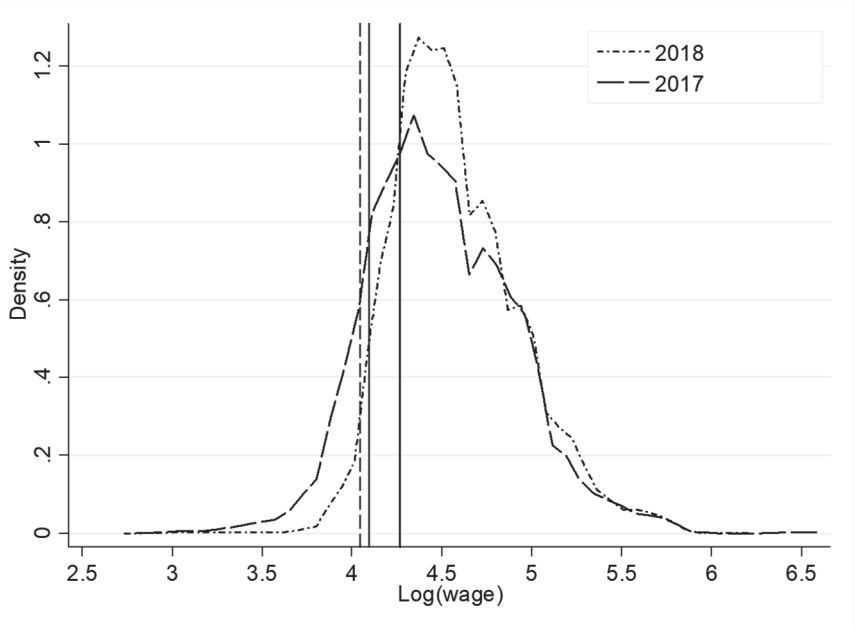
12,000 MKD; 12,001–16,000 MKD; 16,001–20,000 MKD; 20,001–25,000 MKD; 25,001–30,000 MKD; 30,001–40,000 MKD; over 40,001 MKD.

As evidenced in the list above, the range is narrower in the lower part of the wage distribution. For workers who reported wage ranges, we set their wage using the median of the respective range, and believe that this approximation does not generate considerable bias. In September 2017 the minimum wage increased from 10,080 MKD (9,590 MKD for textile, leather, and shoes) to 12,000 MKD. Hence, it is likely that those who received a wage increase would have self-reported as being in the 8,001–10,000 MKD range before the new MW was introduced and in the 10,001–12,000 MKD range afterwards. This would establish a fairly stable space for investigating the effects of the latest increase in the minimum wage.

The analysis focuses on wage earners and does not include the unemployed, inactive, or self-employed, employers, or unpaid family workers. This provides a sample of 8,061 individuals, and adding the unemployed increases the sample size to 10,606 individuals.

The wage distribution in North Macedonia is skewed to the right with a fairly steep descent on the left side (see Figure 1). Such wage distributions imply two things: (1) the mean wage exceeds the median wage (Belser and Sobeck 2012), and (2) a large proportion of workers in the country earns low wages. The spike in the left part of the distribution has visibly moved rightward which can be directly related to the increase of the MW from 10,080 MKD and 9,590 MKD (for particular sectors, as discussed above) to the new unified level of 12,000 MKD. Secondly, the left part of the 2018 distribution is slightly more vertical (i.e., a higher proportion of workers is earning the average wage or an amount close to it), reflecting the unification of the MW across sectors, and also possibly the tendency toward greater compliance. In addition, the bunching of wages at the MW (the highest point of the 2018 distribution) is also evident. More workers are now concentrated in and around the MW, suggesting a potential wage compression. In particular, the wages of workers earning below the median wage somewhat levelled around the new MW, whereas no significant wage increases occurred at higher wage levels, potentially implying greater wage equality.

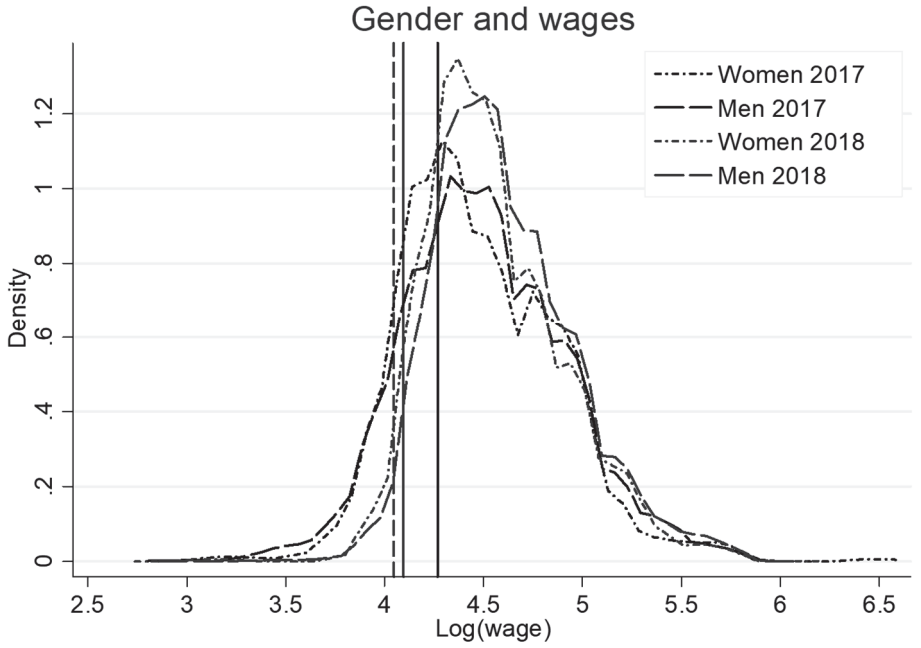
Figure 1: Kernel density distribution pre-minimum wage increase versus post-minimum wage increase



Combined Kolmogorov-Smirnov test [p-value]: 0.000
Red dashed line: MW in leather, footwear, and textiles in 2017; Red sold line: national MW line 2017; Black solid line: national MW line 2018.
Source: *Authors' estimates based on LFS microdata.*

Figure 2 presents the wage distributions over time, and disaggregated by gender. The 2018 lines (red) are positioned to the right of the 2017 lines (black), suggesting that the MW might have contributed to higher wages in the left part of the distributions. The spikes are higher for women, suggesting that in both years they were more influenced by the MW than men.

Figure 2: Kernel density distribution pre-minimum wage increase versus post-minimum wage increase, by gender and year



Combined Kolmogorov-Smirnov test 2017 [p-value]: 0.001
Combined Kolmogorov-Smirnov test 2018 [p-value]: 0.001
* Red dashed line: MW in leather, footwear, and textiles in 2017; Red sold line: national MW line 2017; Black solid line: national MW line 2018.
Source: *Authors' estimates based on LFS.*

Table 1 presents the shares of median wage to first-decile wage (D5/D1), of ninth-decile to median wage (D9/D5), and of ninth-decile to first-decile wage (D9/D1). The ratios reveal the comparative wage in the observed deciles. For example, the first number of 2.74 suggests that the average wage for the richest decile in 2017 was nearly three times higher than the average wage of the poorest decile. Moving to the second row we observe a decline in the ratios, suggesting a general reduction of wage inequality in North Macedonia. The latest MW increase potentially resulted in intense wage compression, leading to significant declines in the decile ratios. However, the D9/D5 ratio, which increased insignificantly, is an exception, suggesting that the wage of the richest and the median workers did

not change very much; hence any improvements in wage equality were mainly observed on the left or lower wage part of the wage distribution and can be more clearly corroborated with the MW increase. For example, D5/D1 declined by a sizeable 20%, while D9/D1 saw a more moderate 7.9%. When disaggregated by gender, we see these declines were larger for men. Finally, the table suggests that North Macedonia now has a significantly more favourable wage distribution than the EU-28 average. On the left side, wages are similarly distributed to in the EU-28 (the D5/D1 ratio is very similar), while the right side of the wage distribution is significantly more compressed in North Macedonia.

Table 1: Different measures of wage inequality: decile ratios

	D9/D1			D9/D5			D5/D1		
	All	M	F	All	M	F	All	M	F
MK 2017	2.74	2.99	2.58	1.41	1.52	1.50	1.94	1.97	1.72
MK 2018	2.54	2.36	2.56	1.57	1.56	1.60	1.62	1.52	1.60
EU-28 (2014)	3.49	3.67	3.23	2.06	2.12	1.97	1.69	1.72	1.63

Note: *Data refer to first quarters of the respective years, calculated by the authors. Data for EU-28 are a simple average based on the Structure of Earnings Survey and derived from Eurostat [earn_ses_hourly].*

Table 2 presents another measure of wage inequality, the cumulative percentages of the wage distribution. This refers to the share of workers in the distribution of the wage mass; e.g., the first number of 0.2% suggests that the poorest percentile of wage earners receive only 0.2% of the overall wage mass. Due to the compression generated by the MW increase, the share of wages received by the bottom 10% increased by 39.4%. This increase is even higher (double) for female workers. Part of the increase is undoubtedly down to the increase in the threshold of the decile because of the rising MW, so that a share of workers who previously were earning approximately the MW level are now likely to belong to the poorest decile as they did not receive a proportional increase (the 'equalisation' phenomenon). Generally, Macedonian wage distribution resembles that of the EU, albeit slightly more favourable and equitable.

Table 2: Different measures of wage inequality: cumulative wage distribution

		Bottom 1%	Bottom 10%	Bottom 50%	Bottom 75%	Top 25%	Top 10%	Top 1%
2017	All	0.2%	3.3%	27.4%	58.1%	41.9%	21.0%	3.5%
	M	0.3%	3.6%	25.1%	57.3%	42.8%	23.2%	3.2%
	F	0.1%	2.9%	31.0%	59.5%	40.5%	17.7%	3.9%
2018	All	0.2%	4.6%	20.3%	57.9%	42.1%	22.3%	4.3%
	M	0.2%	3.8%	17.1%	56.8%	43.2%	24.3%	5.2%
	F	0.3%	5.9%	25.3%	59.7%	40.3%	19.3%	2.8%
EU-22 (2010)		0.2%	3.6%	29.1%	53.9%	46.1%	25.5%	5.8%

Note: *Data for North Macedonia is for first quarters of the two years, calculated by the authors. Data for EU is a simple average of 22 countries based on the Structure of Earnings Survey and derived from ILO (2016).*

To further analyse the wage compression implied by the MW, we set out three different wage ranges: (1) workers earning the minimum wage +/– 5%; (2) those earning below 95% of the MW; and (3) those earning between 105% and 125%. Wages in the textile, leather, and shoe sectors (for which a lower MW level was prescribed) have been adjusted for the period prior to the MW increase. As in the previous analysis, for each worker who did not report their exact wage, the median of the reported wage range was used.

Table 3 provides information on the number and share of MW earners as a percentage of total wage earners for the periods prior to and after the MW increase, differentiated by gender. Columns 1 and 2 show that the share of MW workers more than doubled after the MW increase, from 9.3% to 20%, resulting in a wage compression. However, workers who were already earning 12,000 MKD (the new MW) prior to the increase did not experience a wage increase, or it was sluggish at best. The trend is clearly visible in columns 5 and 6, where the number of workers receiving between 105% and 125% of the MW significantly declines, from 14% of all workers to 3.5%. In essence, workers who prior to the increase were earning between 105% and 125% of the MW in 2017 transited to receiving wages +/–5% of the new MW in 2018, while their wages did not move in absolute terms. No significant differences in these patterns can be observed by gender. Meanwhile, the number of workers earning less than 95% of the MW declined. However, the data may be overlooking non-compliance, whereby workers

earning less than the MW are hidden due to taking the median value of the wage ranges when the exact wage was not reported, as well as due to potential measurement error.

Table 3: Share and number of workers earning the MW, by gender

		MW +/– 5%		**Below 95% of MW**		**Between 105%–125% of MW**	
		(1)	(2)	(3)	(4)	(5)	(6)
		2017	2018	2017	2018	2017	2018
Entire sample	% of wage earners	9.3%	20.1%	5.8%	4.8%	14.0%	3.5%
	Estimated MW workers	44,827	108,364	27,969	25,861	67,876	18,841
Men	% of wage earners	8.7%	18.1%	6.6%	4.2%	11.4%	3.1%
	Estimated MW workers	24,637	55,422	18,794	12,883	32,139	9,399
Women	% of wage earners	10.1%	22.8%	4.6%	5.6%	17.8%	4.1%
	Estimated MW workers	20,190	52,942	9,176	12,979	35,737	9,441

Source: *Authors' calculations based on LFS.*

Table 4 presents the same information as Table 3, but disaggregated by sector. The same patterns observed in Table 3 are evident, especially in the sectors where the MW is commonly paid to many workers. Most notably, there is a large concentration of wages around the MW level in the textile, leather, and shoe industries: before the increase in 2017 a quarter of workers were on the MW, increasing to more than a third after the increase. The trend towards compression seems most forceful in these sectors: the number of workers receiving 105%–125% of the MW declined by 2.4 times. This pattern is also observed in other sectors where the MW is commonly paid, i.e., retail, hotels and restaurants, other manufacturing industries, and construction. The public sector, education, and health employ a small number of MW workers and hence the effect of the MW increase is either non-existent or insignificant.

Table 4: Share of workers earning MW, by sector

	MW +/–5%		Below 95% of MW		Between 105%–125% of MW	
	2017	2018	2017	2018	2017	2018
Agriculture	16.0%	20.2%	17.6%	5.8%	10.5%	5.8%
Textiles, leather, and shoes	26.0%	34.7%	10.5%	16.9%	16.1%	6.8%
Manufacturing - other	7.6%	18.6%	2.9%	2.6%	17.1%	3.8%
Construction	14.3%	23.1%	10.2%	4.9%	10.6%	4.2%
Market services	9.5%	27.7%	7.4%	5.8%	17.1%	4.1%
Public sector	1.3%	1.5%	1.4%	0.3%	4.3%	0.4%
Education	2.2%	4.8%	1.1%	0.5%	10.0%	0.7%
Health	3.8%	1.9%	9.6%	1.2%	5.5%	0.0%

Source: *Authors' calculations based on LFS.*

3. METHODOLOGY

To pursue our first objective of whether the MW increase affected wages, we econometrically test if wage levels altered in the period after the law changed compared to the period before, and whether any changes were larger in areas (cells) where the minimum wage initially had more 'bite'. The cell approach considers the stylized fact that the fraction of workers affected by the change in the MW may differ across subsets of a population (most notably, across genders). The cell approach has previously been used in MW studies by Card (1992b), Lemos (2009), and Dinkelman and Ranchhod (2012), who consider different regions of the countries under study (and in time) as "cells", i.e., they consider geographical variation in exposure to the minimum wage increase. Card (1992a) argues that the effect of the minimum wage increase may differ across regions due to differences in the fraction of workers affected. To take advantage of a larger number of cells, we extend Card's approach by defining cells based on four demographic characteristics: age (15–29, 30–64), gender, education (primary and less, secondary, tertiary and more), and region (8 regions). We thus arrive at 96 cells, which should help identify the true effect of the minimum wage increase. Angrist (2008) suggests 42 as a rule of thumb to provide robust standard errors. The average number of observations (wage-earners) per cell is 84, which is a sufficient number.

The 'bite' is a variable capturing the effect of the MW increase. We construct three bites for each cell. The first is the fraction of workers affected by the MW increase (Card 1992a; Lemos 2009) whose wage was between the pre-change and post-change levels in the period before the MW increase:

$$FA_j = \frac{\sum_i^n (MW_{t-1} < w_{ijt-1} < MW_t)}{n_j} \tag{1}$$

where FA_j stands for the fraction of workers in cell c affected by the MW increase, defined as the workers in the cell whose wage was in the range between the old and new levels in the period before the increase (w_{ijt-1}), divided by the total number of workers in the particular cell. *MW* stands for the minimum wage level in the respective period.

The second bite is the fraction below (Ramirez et al. 2017), representing the share of workers affected by the MW increase with wages in the pre-change period below the post-change MW level:

$$FB_j = \frac{\sum_i^n (w_{ijt-1} < MW_t)}{n_j} \tag{2}$$

The notations here are self-explanatory. This bite may be more suitable for cases of imperfect compliance with changes in the MW.

The third bite is the wage gap (Dinkelman and Ranchhod 2012) represented by the difference between the logged MW for the cell post-change and the logged median wage pre-change:

$$WG_j = \ln(MW_t) - \ln\left(median\left(wage_{jt-1}\right)\right) \tag{3}$$

The notations here are self-explanatory.

We specify the following difference-in-difference regression model:

$$y_{ijt} = \alpha_0 + \alpha_1 POST_t + \alpha_2 BITE_j + \alpha_3 POST_t * BITE_j + X_{ijt}\gamma + u_{ijt} \quad (4)$$

where y_{ijt} is the log hourly wage for individual *i* of cell *j* in period *t* among the set of 'cell' similar workers. $POST_t$ is a dummy variable taking a value of 1 for the period after the MW increase, and 0 otherwise. $BITE_j$ is cell-specific (hence the subscript *j*) and comes in three forms: fraction affected, fraction below, and wage gap. X_{ijt} is a set of control variables including age, gender, and level of education.

To pursue the second objective of whether the MW increase implies improved wage equality, we rely on an idea of Ramirez et al. (2017). They argue that the effect of the minimum wage increase would be disturbed if there were a significant general increase in wages over the same period. The general wage increase could be considered a confounder, in impact-evaluation literature jargon. Aside from general trends, the wage increase could also result from the MW increase – which the government called a "wage spiral" or upward spillover effect. This implies that workers who previously received 12,000 MKD (the new MW) will press for higher wages when those deemed less productive are suddenly earning the same money. If the wage spiral is proportional, wage equality will not change. And, conversely, if there is no wage spiral or a less than proportional wage spiral, wage equality will improve. Hence, these workers resist 'equalisation'. Table 3 and Table 4 provide some visual proof that equalisation happened to a certain extent, while the ILO (2019) suggests that due to the dormancy of collective agreements, employers did not apply the prescribed coefficients to adjust the other wages in the company, and these increased by a proportionally smaller amount.

Assuming non-problematic compliance, we create a variable per cell of the share of formal workers whose wage is above the minimum wage, denoted $WINC_j$, as in Ramirez et al. (2017), and include a product of *POST* and *WINC*. Hence, our model takes the following form:

$$\begin{aligned} y_{ijt} = {} & \alpha_0 + \alpha_1 POST_t + \alpha_2 BITE_{jt} + \alpha_3 POST_t * BITE_{jt} + \alpha_4 WINC_j + \\ & + \alpha_5 POST_t * WINC_j + X_{ijt}\gamma + u_{ijt} \end{aligned} \quad (5)$$

In this final specification we achieve the two parts of our objective: α_3 reveals the causal effect of the MW increase on wage levels and α_5 reveals the equalisation pressure due to the MW increase. To investigate whether the effect of the MW increase is gender-specific, we divide the sample by gender and reestimate Equation (5) with OLS. Due to cell clustering, we use clustered standard errors, which control for the presence of unobserved effect in the error term at the cell level.

4. RESULTS AND DISCUSSION

Before presenting the key results, we provide a brief overview of the 'bites'. Table 5 presents the median and outer deciles of the three bites. The median fraction of affected wage earners is 13.9%, and the one below is 22.9%, while the median wage gap is negative, suggesting that, on average, the median within-cell wage in 2017 was slightly below the new minimum wage. In fact only a quarter of the cells show a positive wage gap, reflecting the right-skewed nature of the wage distribution in North Macedonia. In the upper decile, 66% and 60% of the cells have a fraction of wage earners affected by the MW increase and earning below the new MW, respectively.

Table 5: Descriptive statistics of the bites

Percentile	Fraction affected	Fraction below	Wage gap (log)
p10	0.0%	2.8%	(0.65)
p25	6.4%	7.1%	(0.22)
p50	13.9%	22.9%	(0.13)
p75	20.6%	41.7%	(0.00)
p90	33.3%	60.0%	0.18

Source: *Authors; calculations based on LFS.*

In Table 6 we present the Spearman correlations for the bites and the basic personal characteristics of the wage earners. Age and bites are positively correlated, and although this correlation is fairly weak it does suggest that the bite is bigger for older workers; i.e., that older workers are more affected by the MW increase than younger workers. Similarly, bites are bigger for women. Bites

negatively correlate with education: the higher the education level, the lower the strength of the bite; i.e., a lower share of more-educated persons is affected by the MW increase. However, in the case of education the correlations are fairly strong, suggesting that higher-educated people are less impacted by MW policy.

Table 6: Correlation matrix for the bites

	Fraction affected	**Fraction below**	**Wage gap (log)**
Age	0.2233*	0.2712*	0.1753*
Female	0.1707*	0.0527*	0.1790*
Primary ed.	0.5242*	0.6543*	0.7326*
Secondary ed.	0.1568*	0.0685*	0.0194*
Tertiary ed.	–0.6919*	–0.7279*	–0.7537*

Source: *Authors; Calculations based on LFS. * denotes statistical significance at the 5% level.*

Table 7 presents the effect of the MW increase on wages. Columns (1) to (6) refer to the entire sample, with and without controls, while the rest of the columns split the sample by gender. The effect of the MW increase on wages is presented by the coefficient in front of Post*Bite, given in grey for easier navigation. It suggests that the 2017 increase in the MW exerted a positive and significant effect on wages in North Macedonia. The coefficients in columns (1) to (6) are all positive, significant, and of similar magnitude, irrespective of which bite definition is used. This is a clear and robust finding of a causal link between the MW increase and rising wages in North Macedonia.

Observed by gender, the general finding is maintained, albeit with lower robustness for men. For them, the positive effect of the MW increase on wages is only significant when the wage gap is used as a bite, while it is significant over both bites for women. These results suggest that there has been some bias in favour of women in terms of the overall wage increase. However, the insignificance of the 'fraction affected' bite vis-à-vis the significance of the 'fraction below' bite sheds additional light on our results, namely a delayed compliance: those left behind by previous rounds of MW increases are more likely to see their wages levelled by the later increase. This may have been supported by stricter enforcement of compliance in 2017 than heretofore.

The effect of the MW increase on wage equality is presented with the coefficient in front of Post*WINC. Toward the bottom of the table (also presented in grey) it is insignificant, except in the case of the 'fraction affected' bite. The insignificance of this coefficient proves that there was wage compression, or, put differently, that there was no 'wage spiral'. Even if we consider the only significant coefficient in the entire sample in the case of the 'fraction affected' bite (the significance is lost when disaggregated by gender), the negative sign suggests that above-MW wage growth has been inhibited by the MW increase, further testifying to 'equalisation'.

The other coefficients align with the predictions of human capital theory: wages rise with age (a proxy for experience) and education. The adjusted gender pay gap is estimated at 5.2% to 8.5%, suggesting a narrowing compared to previous estimates (see Petreski and Mojsoska-Blazevski 2016).

In summary, we provide quantitative evidence that the latest MW increase in North Macedonia resulted in wage increases; however, these were heavily concentrated in the left tail of the wage distribution, i.e., up to and around the new MW level. Hence, our evidence shows that there was no 'wage spiral', or spillover effect, as the government argued and expected. To the contrary, 'equalisation' took place, implying a positive externality that overall wage equality improved due to the MW increase.

Table 7: Baseline results

	Entire sample			**Entire sample**			**Men**			**Women**		
	Fraction affected	Fraction below	Wage gap	Fraction affected	Fraction below	Wage gap	Fraction affected	Fraction below	Wage gap	Fraction affected	Fraction below	Wage gap
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Post	0.0219	0.0260*	0.153***	0.137***	0.0265	0.0854	0.105	0.182	0.132**	0.168	−0.16	−0.0219
	(0.019)	(0.014)	(0.023)	(0.052)	(0.101)	(0.064)	(0.079)	(0.210)	(0.054)	(0.122)	(0.187)	(0.139)
Bite	−2.313***	−1.334***	−0.999***	−0.434**	−0.803***	−0.627***	−0.212	−0.968***	−0.807***	−0.424**	−0.651***	−0.474***
	(0.263)	(0.089)	(0.027)	(0.171)	(0.117)	(0.109)	(0.311)	(0.129)	(0.054)	(0.174)	(0.139)	(0.113)
Post*Bite	0.530***	0.241***	0.299***	0.282**	0.243**	0.296***	0.382	0.0588	0.216***	0.262	0.385***	0.325***
	(0.130)	(0.048)	(0.090)	(0.117)	(0.104)	(0.083)	(0.245)	(0.247)	(0.075)	(0.157)	(0.128)	(0.101)
Age				0.00126	0.00131*	0.00103	0.000401	0.00017	0.000203	0.00361***	0.00374***	0.00311***
				(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Female				−0.0849***	−0.0584**	−0.0521**						
				(0.027)	(0.024)	(0.025)						
Secondary ed.				0.0682	0.0551	0.0618*	0.0111	−0.0083	0.00265	0.139**	0.146***	0.141***
				(0.042)	(0.034)	(0.035)	(0.060)	(0.034)	(0.042)	(0.052)	(0.049)	(0.051)
Tertiary ed.				0.340***	0.287***	0.194**	0.245***	0.164***	0.0151	0.474***	0.468***	0.398***
				(0.064)	(0.058)	(0.076)	(0.082)	(0.058)	(0.068)	(0.088)	(0.079)	(0.092)
WINC				0.591***	0.115	0.242**	0.743***	0.142	0.267***	0.464***	−0.0533	0.102
				(0.127)	(0.109)	(0.097)	(0.166)	(0.115)	(0.099)	(0.130)	(0.207)	(0.116)
Post*WINC				−0.116**	−0.00164	0.0832	−0.0832	−0.144	0.0088	−0.153	0.174	0.202
				(0.051)	(0.098)	(0.098)	(0.072)	(0.202)	(0.087)	(0.127)	(0.189)	(0.186)
Constant	6.221***	6.249***	5.704***	5.374***	5.892***	5.490***	5.323***	6.025***	5.537***	5.217***	5.734***	5.400***
	(0.044)	(0.034)	(0.011)	(0.089)	(0.095)	(0.051)	(0.137)	(0.116)	(0.055)	(0.105)	(0.177)	(0.083)
Observations	8,061	8,061	8,061	8,061	8,061	8,061	4,999	4,999	4,999	3,062	3,062	3,062
R-squared	0.197	0.27	0.288	0.288	0.298	0.301	0.254	0.267	0.271	0.369	0.374	0.377

Source: *Authors' calculations based on LFS.*

, ** and * denote statistical significance at the 10%, 5%, and 1% level, respectively. Standard errors provided in parentheses.*

5. ROBUSTNESS CHECKS

We conduct three sorts of robustness checks. First, we vary the cell composition. We drop regions and define five age groups, each 10 years wide, starting at 15 and ending at 64, and instead of having three levels of education we use five. By so doing we end up with 50 cells, still above Angrist's (2008) rule of thumb of 42. Second, we introduce cell-specific dummy variables in X_{ijt} in equation (5). We do this to dispose of the cell-specific unobserved factors potentially correlated with the outcomes (e.g., that highly educated young men in the Skopje region have consistently high wages and higher employment chances). Third, we use the Heckman (1976, 1979) two-step method to account for potential selectivity bias. Marriage is used as an exclusion restriction. This sample also expands to take into consideration unemployed and inactive individuals (to be able to estimate the selection equation).

Table 8 presents the results: only the key coefficients are presented, while the rest are available on request. The Post*Bite and Post*WINC coefficients largely retain their significance and magnitude, hence corroborating the main results. The potential of negative selection (negative though insignificant ρ, not shown due to space) does not affect the key findings regarding the effect of the MW increase.

Table 8: Robustness checks

	Fraction affected	Fraction below	Wage gap
Varying cell composition			
Post*Bite	0.295***	0.281**	0.255***
	(0.100)	(0.111)	(0.061)
Post*WINC	–0.119**	–0.0064	0.0808
	(0.052)	(0.099)	(0.098)
Cell dummies added			
Post*Bite	0.269**	0.216*	0.178***
	(0.117)	(0.111)	(0.045)
Post*WINC	–0.138***	–0.0384	–0.0329
	(0.051)	(0.104)	(0.067)
Heckman correction (outcome equation)			
Post*Bite	0.339**	–0.200	0.124*
	(0.135)	(0.133)	(0.081)
Post*WINC	–0.119**	–0.0181	0.103
	(0.055)	(0.115)	(0.119)

Source: *Authors' calculations based on LFS.*

, ** and * denote statistical significance at the 10%, 5%, and 1% level, respectively. Standard errors provided in parentheses. Controls are accordingly used, but not presented due to space.*

6. CONCLUSION

The objective of the paper is to investigate if the minimum wage increase of September 2017 resulted in better wage equality in North Macedonia. The increase was sizable – 19% – and included levelling up in the three sectors with a lower minimum wage: textiles, leather, and apparel. Methodologically, we extend the 'cell' approach of Card (1992a) and rely on data from the Labour Force Survey (LFS); i.e., two waves, just before and just after the September 2017 increase of the minimum wage.

The results suggest that the 2017 increase in the minimum wage produced a positive, significant, and robust effect on wages. However, the wage increases have been almost entirely nested in the left part of the wage distribution and imply wage compression up to or around the minimum wage. The bunching around the new minimum wage level 'equalised' workers: those who previously earned the new minimum wage level equalised with the less productive workers who approximated their wage only by the power of the law. Hence, wage equality improved. The results show that the minimum wage could be used as an important wage equality policy in the current policy and institutional setup, with limited spillover effects.

These findings are very relevant for policy. The evidence of improved wage equality in North Macedonia invalidates the assumption that wage-led growth is a viable development strategy in the current economic policy setting, economic structure, and institutional context. The minimum wage policy cannot be used to induce a 'wage spiral', in the wording of the government, at least not in the short run. Along with its potential to lead to job losses, especially if wage increases depart significantly from productivity increases, this is a warning to policymakers that costs may swiftly outweigh benefits if not well thought out and appropriately timed.

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INEQUALITY AND WELFARE STATE CLIENTELISM IN BOSNIA AND HERZEGOVINA

ABSTRACT: *Inequality in Bosnia and Herzegovina (BiH) is rampant, manifested not only through one of the highest Gini coefficients in Europe but also in unequal access to social benefits and services. We find this to be an outcome of BiH's entity-government social policy, which has been created to serve ethnic clientelistic politics. As the country's former social protection system adjusted in the immediate post-civil war period to a new asymmetric government structure made of two entities, Federation of Bosnia and Herzegovina and Republika Srpska, it helped the main ethnic political parties preserve their power and ethnic divisions. This was achieved through a comprehensive system of status-based social benefits, most notably war-related social benefits granted on the basis of ethnic and military service affiliation. As such, in both BiH's entities the system of social protection is an instrument of political control that generates inequality by treating certain social groups differently in terms of access to and level of benefits, while excluding much of the population. The process is found to be endogenous; in other words, maintaining inequality in access to social benefits is essential for preserving clientelistic policy, and vice versa.*

KEY WORDS: *Clientelism, Social Policy, Democratisation, Bosnia and Herzegovina*

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INTRODUCTION

Bosnia and Herzegovina's social protection systems follow the administrative organisation of the two main entities: a decentralised system in the Federation of Bosnia and Herzegovina (FBiH) and a centralised system in Republika Srpska (RS). The country's social protection system has helped ethnic political parties maintain the country's ethnic division resulting from the war and preserve its dominance. The entities' systems of social protection are old-fashioned, based on social insurance and status-based social benefits that serve as instruments for maintaining the leading political parties' political power. Their main outcome is perpetual inequality as a necessary instrument of political bargaining and control. On the one hand political party control is maintained by gatekeeping access to public sector employment, thus providing access to the privilege of stable and well-paid jobs (Weber 2017; Blagovcanin and Divjak 2015; Oruč and Bartlett 2018; Obradović, Jusić and Oruč 2019) that also gives access to social insurance benefits. On the other hand, through discriminatory legislation and control of social policy administration the main ethnic political parties control the access to status-based non-contributory social benefits financed from public budgets. The focus of our work will be explaining the mechanisms of clientelist control over the social benefit systems in Bosnia and Herzegovina.

Political clientelism is usually defined as the distribution of selective benefits to individuals or groups in exchange for political support (Katz 1986; Piattoni 2001; Kitschelt and Wilkinson 2007). It implies a two-way relationship between clientelistic political parties and other interest groups through which political support and votes are secured. Nearly everything that falls under state control can be used for this exchange. The literature on political clientelism distinguishes two types of clientelistic approach, electoral and relational (Gans-Morse 2014; Nicther 2010). Electoral clientelism is a once-off exchange of money or material goods for a vote, while relational clientelism is a recurrent trade of money and material goods for a vote that is usually sustained beyond election campaigns. Relational clientelism is more relevant to clientelistic social policy because usually social benefits and services are exchanged for votes on a continual basis. Hence, the political loyalty tends to be of a longer-term nature. Similarly, Piattoni (2001) defines political clientelism as "strategies for the acquisition, maintenance, and aggrandisement of political power, on the part of the patrons, and strategies for protection and promotion of their interests, on the part of the clients". Favours

exchanged for votes include "birth certificates, building permits, disability pensions, public housing, tax exemption, and development projects" (ibid, p.6). This implies that one of the most important preconditions for clientelism to function is maintaining a hollow public and social policy administration institutional structure by employing civil servants loyal to party patrons.

A World Bank (2018) report indicates a growing pattern of clientelistic electoral mobilisation that is undermining developmental challenges such as weak rule of law, corruption, and inadequate public services, and is exacerbating ethnic violence (Fukuyama 2011). Past studies have also shown that clientelistic politics are most prevalent in poor and state-dependent economies (Kitschelt & Wilkinson 2007; Kopecky 2012). Poor voters are more likely to receive and respond to money or other clientelistic incentives (Brusco, Nazareno, & Stokes 2004), and in poor regions politics are more likely to take a clientelistic form (Stokes 2005; Keefer 2007).

The instrumentalisation of social policy for clientelistic purposes has been limited in western democracies due to well-functioning, impartial institutions with transparency, accountability, and active checks and balances built in to safeguard against corrupt practices. Additionally, robust political competition has ensured that no political party misuses power, whether to consolidate political influence, polarise the political environment, or consolidate ethnic-based or ideological instrumentalisation of the masses (Filic 2018). In post-Dayton BiH the public sector and state-owned enterprises and institutions play a dominant role in economic output. However, the three ethnic polities control most of it by dividing the cake among themselves: "In Bosnia and Herzegovina, the three nationalistic parties have divided the country painstakingly into three influential zones. The resources, state-owned enterprises, energy providers, banks… everything is appropriated and politicised along ethnic-nationalistic dividing lines. There is almost no practical politics, concern for the public interest is almost inexistent" (Boll Stiftung 2017, p.2). Additionally, BiH's transition to a functional democracy in the aftermath of the ethnic conflict has continued, however unsuccessfully, for the last three decades (Bieber 2018). The limited success can be ascribed to post-conflict rebuilding, but a large part of it is due to ethnic polarisation by corrupt and power-seeking elites. In the post-conflict the political elites took advantage of the slow economic growth, high unemployment rate, widespread labour

market informality, extensive corruption, nepotistic practices, and ethnic divisions to further polarise the society ethnically and to consolidate their power over the state administration and employment, creating a political space of informal networks and political alliances between dominant ethnic parties and ethnically polarised voters. In BiH, political party control even extends to the private sector, as the economic survival of private companies often depends on contracts with the government or government-owned companies and government subsidies (The World Bank 2010:18; Blagovcanin and Divjak 2015:10). In other words, ethno-clientelistic politics have held the political environment in Bosnia and Herzegovina hostage for nearly three decades through high levels of political ethno-clientelism.

The World Bank (2010) sees state capture[1] and conflict of interest as the ways in which corruption is manifested in BiH. However, in the BiH context the term 'state capture' carries a somewhat different meaning than the one the World Bank authors had in mind. Post-Dayton, in BiH state capture means domination and control of domestic political parties, the public sector, the public administration, and other state institutions including the state-owned (public) enterprises, for the purpose of controlling and extracting public resources and keeping political elites in power. Hence, the term denotes the practice of political clientelism.

The country has both relatively high poverty levels[2]and high income inequality (Djukić and Obradović 2016). Available estimates are based on sporadically conducted Household Budget Surveys (in 2007, 2011, and 2015). Although the most recent estimate of inequality by the BiH Statistics Agency (2017a), based on equalised consumption for 2015, is estimated at 31.2 Gini points, when measured on the basis of income data it increases to 48.7 Gini points (BiH Statistics Agency 2017b, p.12). Other income-based estimates based on the 2011 Household Budget Survey suggest that the Gini coefficient of equalised disposable income was 44 points (Djukić and Obradović 2016, p.12). In other words, income-based

1 The World Bank (2010) refers to state capture as the actions of individuals, groups, or firms in both the public and private sectors in order to influence the formation of laws, regulations, decrees, and other government policies to their advantage as a result of the illicit and non-transparent provision of private benefits to public officials.

2 According to the latest 2015 HBS income-based estimates, the poverty rate for individuals is 27%, which is way above the EU 28 average of 16.9% in 2017 (Obradović, Jusić and Oruč 2019).

estimates suggest that inequality in BiH is exceptionally high and increasing. While not directly comparable with EU-SILC data due to different data collection methods, these sources still suggest a high level of inequality, considering that the average level of inequality in EU28 countries was 30.8 Gini points in 2016 and 30.7 in 2017 (Eurostat 2019a). The 2015 estimate of the S80/S20 income quintile share ratio of 20.2 (Agency for Statistics of BiH 2017b, p.12) confirms the high levels of inequality, showing that the income of the richest 20% of citizens was twenty times higher than that of the poorest 20% (although not directly comparable, the average level of the S80/S20 income quintile share ratio for EU28 countries was 5.2 in 2016 and 5.1 in 2017 (Eurostat 2019b).

In addition to high income poverty and inequality, the BiH social protection system maintains high inequality in access to social benefits and social services. Maintaining inequality allows political patrons to maximise political gains, i.e., political support and thus electoral votes. The social protection systems organised at the level of the BiH's entities are instrumental to maintaining political and electoral support. BiH has developed a multiparty system in which the dominant ethnic parties compete with virtually no fear of loosing or diminishing their role, while representing only narrow clientelistic elites. Importantly, BiH is "plagued by economic lassitude with high levels of unemployment, unrelenting corruption and ethno-clientelism" (Piancentini 2019), and the combination of these factors together with ethnic polarisation has created the space for informal clientelistic actors across different ethnic political parties. BiH's political system largely operates on the basis of political clientelism characterised by ethno-politicians acting as patrons who offer jobs, social benefits, material goods and services etc. in exchange for political support and votes. Patrons not only seek individual votes but also often encourage their supporters to recruit family members and friends and sometimes even entire communities to do the same. It is not unusual to have instances where small rural towns and villages are encouraged to vote for the local patron in exchange for a paved road, running water, a sewage system, etc. (Jackson 2018). It is also not unusual to see some of these projects started but never finished, depending on whether the patron secured the election and on their tendency to keep promises. As expected, these types of clientelistic practice wreak havoc in BiH. In order to provide these 'services', ethno-politicians exploit the public administration and institutions. Which party gets control over which public company or institution is decided during post-election negotiations. For

the most part the main ethnic political parties have maintained control over the same institutions for years without any interruption. These practices entrench ethnic polarisation, often determining which state company or state institution belongs to the domain of which ethnic party, and therefore which ethnicity. In this way the patron's type of institutional association divides the ethnic electorate, deepening the state's bureaucracy and its inability to emerge from the clientelistic and nepotistic system. Consequently, citizens have very little incentive to support political parties that do not wish to participate in corrupt clientelistic practices or do not have the capacity to offer any clientelist-based benefits (Chandra 2009). Thus, perhaps unintentionally, since the end of the war BiH has created the supply and demand sides of political clientelism.

SOCIAL WELFARE AND ITS CLIENTS

Annex IV of the Dayton Peace Accord, which deals with the BiH constitution, did not give any competencies to the state-level government with regard to social policy or social protection. As a result, this area is within the competence of the BiH's asymmetrically organised entities. The Federation of Bosnia and Herzegovina, originally envisaged as a Bosniak and Croat entity, is decentralised and in the immediate post-conflict period enabled power-sharing between Bosniak and Croat political representatives, while Republika Srpska as a predominantly Bosnian Serb entity became centralised. Despite changes in entity and cantonal constitutions imposed by the Office of the High Representative in 2002, which pertained to the Constitutional Court of Bosnia and Herzegovina Decision on Constituent Peoples in the summer of 2000 (No. U 5/98 – III)[3], the dominance of the main ethnic political parties in the entities has not changed. The country is still divided on ethnic lines and controlled by political parties that have not changed in nearly thirty years.

The entity systems of social protection have been instrumental in consolidating ethnic division and the absolute dominance of the leading ethnic political parties. This is achieved through a comprehensive system of non-contributory social benefits, of which the largest part are war-related social benefits granted on the

[3] Serbs became constituent peoples in the FBiH and Bosniaks and Croats became constituent peoples in Republika Srpska, while the expansion of others' political rights at entity and cantonal levels (in FBiH) were also affected.

basis of ethnic and military affiliation (IBHI 2013; Obradović 2018). During the war there were three main warring factions, while the Dayton Peace Agreement recognised only two armies, one in the Federation of Bosnia and Herzegovina (made of two components – ethnic Croat and ethnic Bosniak) and one in the Republika Srpska (ethnic Serb). The first veteran benefits were granted by all three warring sides to family members of deceased soldiers fallen during the conflict years (Obradović 2017), initially based on legislation enacted before the war that granted generous benefits to veterans of the Yugoslav Partisan movement during the Second World War. War veteran legislation in the entities in the postwar period, which included social protection benefits, was enacted to assist the process of demobilisation, army downsizing, and creation of a BiH army at the state level, but, importantly, it granted privileges to the selected groups usually prior to general or local elections. Hence, in both entities, under the war veteran legislation the recipients included various categories of war veterans, their family members, civilian victims of war, holders of war medals, and, in the RS only, victims of war camps and war torture. In the RS, demobilised soldiers receive a veteran supplement, which FBiH veterans have been pressing for[4] as well. Both entities also provide grants for buying apartments and for starting businesses, privileged pensions, and finance for funeral expenses and tombs, among other benefits, as well as granting priority employment in public institutions to children of fallen soldiers. Furthermore, veteran associations receive regular government grants, which they distribute as financial aid to members in need and to finance public commemorations of war battles, etc. In general, all war-related benefits are granted based on association with recognised military service[5] or responsible associations of civilian war victims, organised by ethnicity under the political sponsorship of entity governments and ethnic political parties.[6]The narrative of all three ethnic groups is that they were fighting

[4] A proposal of FBiH Law on the Rights of Demobilised Defenders and their Families envisages the same type of benefits in FBiH

[5] In the FBiH they are the Army of Bosnia and Herzegovina and the Croat Defense Council, while in the RS it is the Army of the RS.

[6] The most recent initiative opposing these principles was the adoption of the RS Law on Victims of War Torture, intended to grant benefits to prisoners of war camps and victims of torture, including those that experienced sexual violence and rape. The law stipulates benefits only for RS residents whose status is approved by the Association of Women Victims of War of the Republika Srpska or/and the Association of Women Victims of War of the RS, which

a just war, i.e., defending their homes and families from those attacking them (Berdak 2013), and in their own eyes all three ethnicities, Serbs, Croats, and Bosniaks, are at one and the same time both victims and heroes, depending on the type of social benefit they want to receive (Filic 2018).

According to European System of Social Protection Statistics (ESSPROS) data (BiH Agency for Statistics 2019), social protection spending in BiH in 2015 constituted 18.8% (excluding administration costs) of national GDP, which makes the country 'average' in the region in terms of expenditure on social protection, but still low compared to the EU 28 average of 27.1% in 2016. However, 96.8% of total social protection expenditure is non-means tested (BiH Agency for Statistics 2019), which means that only 3.2% of social protection benefits are means-tested, i.e., targeted at the poor. Apart from excessive reliance on social insurance,[7] where access mainly depends on employment-based contributions, another reason for such a high share of non-means tested benefits is the dominance of status-based benefits. Moreover, the privileged war veteran benefits have even penetrated the social insurance schemes, thus undermining the system based on contributory payments and ruining it financially (Obradović 2017). Lex specialis war veteran legislation gave the privileged categories social insurance rights including privileged pensions and health insurance, and even at

RS Assembly Members of Bosniak ethnicity opposed during the early stages of the parliamentary procedure. They proposed amendments to include victims that suffered in the territory of the RS that currently reside in the FBIH and whose status is approved by associations in the FBiH, but the Assembly rejected it. After the law's adoption the Club of Bosniak Members of the RS Assembly invoked the right of veto to protect the national interest on the grounds of discrimination based on ethnicity. This postponed the implementation of the law and brought it before the Council for Protection of Vital National Interest of the RS House of Peoples and the RS Constitutional Court. Less than one month before the October general elections the complaints of the Club of Bosniak Members of the RS Parliament were rejected because of procedural non-compliance and the law was published in the RS Official Gazette No. 90/18.

[7] Social insurance schemes are the most important part of the social protection system in both entities. A recent estimate by Obradović and Jusić (2019, p.1) based on central bank data, finds that on average social insurance expenditure constitutes 71% of social protection expenditure in the FBIH and 85% in the RS.

one point in FBiH, unemployment assistance benefits.[8] In addition, the general pension legislation stipulates some key war-related benefits. In both entities, there is a provision that recognises each "war year" in military service twice for the purposes of insurance (although contributions were never paid). These provisions are used mostly by men and in most cases effectively result in early retirement. For example, someone who spent five years in the war receives ten years towards a pension. Although de jure financing of privileged rights is the responsibility of the entity's budget, evidence suggests that the veteran benefits administered through social insurance schemes have often been financed from general contribution revenues (Obradović 2017; Obradović and Jusić 2019), and therefore at the expense of contribution-paying employees and beneficiaries.

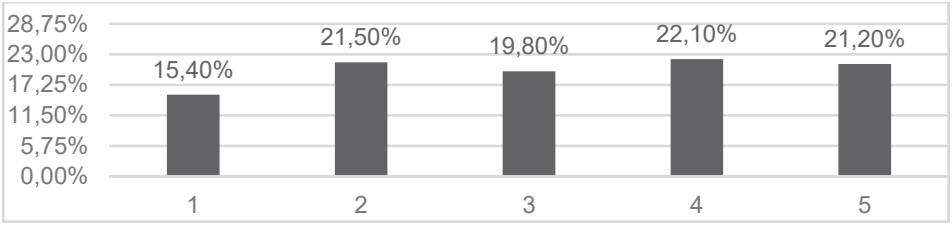
Non-contributory social transfers or social assistance schemes comprise 29% of social protection expenditure in the FBiH on average, and 15% in the RS. This expenditure comprises around 4% of the country's GDP, of which more than 3% is spent on status-based, war-related benefits (Obradović and Jusić 2019). These benefits are financed at three levels of government administration in the FBiH (entity, canton, and municipality) and two levels in the RS (entity and municipality). Most non-contributory social benefits are status-based and grouped according to beneficiary status; i.e., war veteran benefits (war veterans with disabilities, demobilised soldiers, recipients of war medals), benefits for civilian victims of war, benefits for people with disabilities whose disability is not war-related, child and family benefits, and means-tested social assistance. However, given that means-tested benefits constitute only 3.2% of the overall social protection expenditure while war veteran benefits are 9.4% (BiH Agency for Statistics 2019), the overall targeting of non-contributory social transfers towards lower income groups is very low. The only means-tested benefits are social assistance (comprising only 0.42% of total social expenditure[9]) and some child and disability benefits, all of which are very meagre and have very low

[8] On the eve of the 2006 general election the FBiH passed the FBiH Law on the Rights of Demobilised Soldiers and Their Family Members (FBiH Official Gazette, No. 61/06, 27/08 and 32/08), granting demobilised soldiers special unemployment benefits and pension rights under certain conditions. The law was implemented from January 2007 until 1 May 2010, when it was revoked due to the financial collapse of cantonal public employment services and debts incurred to beneficiaries. The FBiH had to annul the law under the terms of recommendations by international financial institutions.

[9] Authors' estimate based on 2015 ESSPROS data.

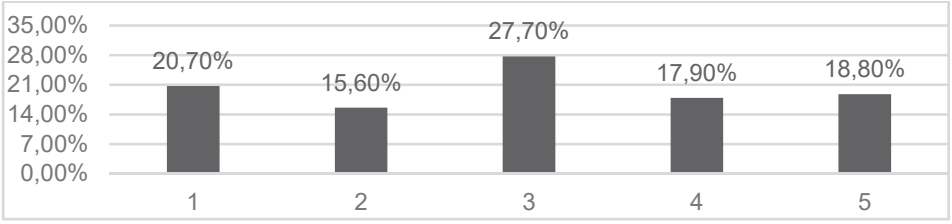
coverage (Obradović 2018; Obradović and Djukić 2016; Bruckauf 2014). The Independent Bureau for Humanitarian Issues (IBHI 2013) found the war veteran benefits to be the most regressive as they are directed at the higher income groups, while the means-tested schemes financed through Centres for Social Work were found to be well targeted towards low-income groups. Earlier studies based on 2007 Household Budget Survey data (World Bank 2009) also pointed to this problem. In Graph 1 and Graph 2 below we present estimates of all non-contributory benefit targeting, conducted by the IBHI (2013) based on 2011 HBS consumption data. It can be seen that the poorest quintiles in the FBiH and the RS receive only 15.5% and 20.7% respectively of total non-contributory social assistance benefits. There are no available estimates of social benefit targeting that are based on income data.

Graph 1: Non-contributory social transfers in the FBiH by consumption quintile (2011 HBS consumption data)



Source: IBHI 2013, page 57

Graph 2: Non-contributory social transfers in the RS by consumption quintile (2011 HBS consumption data)



Source: IBHI 2013, page 107.

Under the terms of the agreement with the IMF pertaining to the Stand-By arrangement approved in July 2009, BiH was to reform the social protection system. Under the Letter of Intent (Bosnia and Herzegovina 2009) the

government pledged to "undertake a comprehensive income and property census and introduce means-testing for all civilian and war-related benefits" (p.7) and "to reduce spending on war veteran expenditure" (p.5). However, saving measures implemented in 2009 and 2010 had a short-lived effect, as war veteran expenditure bounced back in just a few years (Obradović 2017). The World Bank-approved project (World Bank Documents and Reports 2014) aimed at improving the targeting of non-contributory transfers and coverage among the poor successfully avoided war-related benefits. Instead, it focused on making already well-targeted means-tested social assistance benefits more restrictive. As a result, the reform failed to tip the balance of public expenditure towards schemes that assist the poor (Obradović 2018).

UNEQUAL SOCIAL STATUS AND UNEQUAL BENEFITS

By now it is known that the entity systems of social protection privilege recipients associated with the war, while social schemes targeted towards the poor like means-tested social assistance are generally underfunded. War veteran recipients are considered the most deserving social group and are usually given priority in financing. For instance, the FBiH government's priority is to pay war veteran benefits, followed by the benefits for civilian victims of war, then benefits for individuals with non-war-related disabilities, and lastly salaries for government administration.[10] The most illustrative example of inequality among recipients concerns the different statuses of benefits for people with disabilities. Both entities have four different disability categories: war veterans with disabilities, civilian victims of war,[11] individuals with disabilities whose rights are stipulated by social assistance legislation, and individuals with a disability caused by professional illness or work injury whose rights are stipulated under pension and

[10] Interview with former FBiH government official 14 March 2019.

[11] Benefits for civilian war victims in both entities are intended for people that were not in the army but have a disability from during or immediately after the war caused by the war or by war torture that caused bodily damage or (where the beneficiaries are family members) disappearance or death. In both entities benefits are only granted to those with a minimum of 60% disability and include monthly disability benefit, benefits for the aid and help of other persons, benefits for orthopedic aid, family disability benefit (if the death of a civilian victim of war was caused by injuries during the war or related to the war the survivor beneficiaries may be spouses, children, parents, or adopted parents), aid for medical expenses and additional orthopedic equipment, additional financial aid, professional rehabilitation, etc.

disability insurance legislation. Here we will leave out the last category because rights under the social and disability insurance are not directly comparable with non-contributory disability benefits.

For each status group a different procedure is used to assess disability and other entitlements. The most favourable assessment procedure is applied to war veterans, whose minimum level of disability in order to qualify for benefits is 20%. Civilian victims of war have to have a minimum 60% of disability to qualify for financial assistance, while a person with disability under social assistance legislation has to have a minimum of 90% of disability in the FBiH and 80% of disability in the RS. Table 1 gives an overview of the level of personal disability benefit for people with 100% of disability by status, and it shows striking differences in the level of benefit between war status and non-war status categories of recipients. Civilian war victims are also discriminated against in the level of benefits compared to war veterans with a disability because the base for calculating benefits for civilian war victims is lower than the base for war veterans. For instance, in the FBiH the benefits base for civilian war victims is 70% of the base for war veterans, of which 50% is financed by the entity and 20% by the canton where the beneficiary resides. The most disadvantaged are the individuals with a disability whose disability is not war-related. Such differences in benefit eligibility put those with similar needs in very unequal positions. It should be noted that in addition to disability benefit, individuals with a disability of the highest category are usually also entitled to benefits for a care-giver, orthopedic aid, and payment of health insurance contributions (if not insured on another basis), and in the case of the war-related categories to even more benefits. As with the amount of disability benefit, the level of the other benefits also differs.

Table 1: Personal disability benefits (for 100% disability), by status, in the FBiH and the RS (2018)

No.	Beneficiary status (for 100% disability)	FBiH	RS
1.	War veterans with disability	376 €	298 €
2.	Civilian victims of war	305 €	223 €
3.	Individuals with disability (under the general law on social protection)	56 €	52 €

Source: Authors' calculation based on legislation and entity government's decisions regarding 2018 base for benefit calculation.

Assessment by medical doctors estimates the recipient disability level that gives access to benefits. In the FBiH this is done by a single institution, the Institute for Medical Examination of Health Conditions, whose work commenced in 2007 after a long dispute between the two leading FBiH parties, Stranka demokratske akcije (SDA) and Hrvatska demokratska zajednica (HDZ). Proponents of the Institute justified it as a World Bank recommendation; however, because this fact is not found in any publicly available document it is most likely fabricated. The real dispute was over political control of the assessment process that determines who receives benefits and under what conditions. A compromise was reached that entailed implementing a decentralised Institute structure (i.e., each canton has a branch office of the Institute), while the central office is responsible for appeal procedures and oversight of the cantonal branch offices (FBiH Law on Establishment of Institute for Medical Examinations, FBiH Official Gazette, No 70/07). This clearly indicates the competition between Bosniak and Croat political parties for financial resources in the FBiH, as well as the within-ethnic-group territorial competition to arrange member benefits. Once the Institute was established, the head of the organisation for a long time was a SDA party official who was also a member of the Cantonal Assembly. Neither the FBiH government nor the parliaments disputed this most obvious example of conflict of interest. The Institute also employed the party official's wife and daughter-in-law (Vijesti.ba 2013).

The Institute applies different rulebooks to assess disability depending on recipient status and the legislation under which the benefit is claimed. A similar practice is applied in the RS, the only difference being that the assessment procedure is decentralised and conducted with the oversight of the institution administrating the benefits. Despite the fact that by ratifying the UN Convention on the Rights of People with Disability in 2010 the state has pledged to combat all forms of discrimination towards people with disability, the above example shows that the government actually generates discrimination against people with disabilities.

INEQUALITY AND BARGAINING FOR BENEFITS

Inequality in BiH is pervasive and exists not only among different status recipients but also among recipients in the same groups. Being a member of the most privileged status group does not mean that a beneficiary will have privileged

status. Indeed, many war veteran subgroups are dissatisfied with their status and benefits, as they are aware of the better status of other subgroups and their peers. The war veteran legislation is complex and encompasses not only laws but also, and more importantly, bylaws and decrees enacted at different times that grant benefits to particular war veteran groups. Some laws and decrees were temporary and implemented for only a limited period of time.[12] A war veteran's individual benefits mainly depend on the legislation under which that person's status is recognised. Hence, very often beneficiaries of the same age that spent the same amount of time in the army during the civil war and had the same military rank will have different levels of benefit. Holders of war medals are among the most privileged recipients in both entities. In both entities the presidency was supposed to give medals to the most deserving members of the army.[13] However, the procedure for distributing war medals was never transparent (Index.ba 13.04.2019). The benefits for these groups are exceptionally high in the FBiH, where the beneficiaries receive a regular monthly benefit in addition to the war-related benefits they already receive. Moreover, there is evidence that some of these privileged benefits are still received by those accused of or condemned for war crimes (Hercegovina.info 11.05.2012).

Veteran associations play an important role in lobbying for benefits, while at the same time all of them are regularly supported from the public budget. As noted by Berdak (2015), the relationship between the main ethnic ruling parties, the veteran associations, and veterans is complex and runs both ways. Veteran associations keep the political parties in check, ensuring that the nationalist interpretation of the war remains dominant and does not fade away, and with it the understanding of their role and their entitlements (Berdak 2015, p.51). The government framework for funding non-government organisations is not clearly defined and available data on the financing of war veteran associations is dispersed across the different levels of government and its ministries, where each government institution has its own financing rules and practices. Research conducted by the Social Inclusion Foundation in BiH (2013) on government financing of the BiH non-governmental sector for 2012 found that 15.2% of the

[12] For instance, in the FBiH, three government decrees for privileged retirement of war veterans had different eligibility criteria and all were temporary.

[13] FBiH has 5,434 holders of war medals, including 1,989 former member of the Croat Defense Council whose war medals were awarded by the President of the Republic of Croatia.

51 million EUR total allocated that year to non-governmental organisations was given to war veteran associations (ibid, p.12). According to more recent estimates, the FBiH has 1,600 war veteran associations, to which all levels of government in the FBiH allocate some 5 million EUR annually (Factor.ba, 09.08.2016). In the RS the rules are clearer, as only 12 war veteran associations are recognised as of public interest, and they receive regular government funding covering salaries and material expenses (RS Government 2018). The RS government also finances those organisations' programmes and project activities on the basis of public calls. War veteran groups are perpetually discontented. Despite having the most privileged status, only the war veterans voice their discontent publicly. In the media they are often portrayed as the most deserving because they took part in the war. They are portrayed as the ones that stayed rather than fleeing as refugees. War veterans protest especially during the pre-election period – which in BiH is every two years, as general and local elections take place at different times.

Another illustrative example is demobilised soldiers' right to unemployment benefit, introduced by the FBiH Law on Demobilised Soldiers and Family Members[14] just prior to the 2006 general election and in force from January 2007 to April 2010.[15] The law stipulated that all demobilised soldiers without employment had the right to unemployment benefit of 25% of the average FBiH salary for a minimum of one year. This was to be financed from cantonal employment institute funds (i.e., unemployment insurance contributions). Very quickly, given the extent of unemployment in the FBiH, many demobilised soldiers without registered employment rushed to register at their cantonal unemployment institute. Naturally, the implementation of these provisions drained all available funding and accumulated debt to the beneficiaries (FBiH Government Archive, 10 January 2009). As a result, the cantonal institutes' work on employment was mostly paralysed, not only in terms of financing but also because the staff did not have time to perform regular duties because they had to deal with demobilised soldiers on a daily basis. Changes to the law in May of

[14] Zakon o pravima razvojacenim braniteljima I clanovima njihovih porodica (Law on Rights of Demobilised Soldiers and their Families), Sluzbene novine FBiH, nos. 61/06, 27/08, 32/08, and 09/10.

[15] The law stipulated a number of rights, i.e., privileged pension rights, favorable credits, priority employment, and priority education for children of demobilised soldiers.

2008,[16] made just a few months before the local elections, allocated 50% of cantonal employment institutes' revenue for this purpose, while the remaining amount was met by cantons and the FBiH government, and the FBiH Employment Institute financed unemployment benefit for demobilised soldier returnees to the RS and the Brcko District. Although the law was annulled in 2010, the sizable debt towards these categories is still in dispute (Audit Office for the Institutions of the FBiH 2014).

All status-based legislation is enacted without proper cost estimates, usually undermining the potential number of beneficiaries and financing costs. Another illustrative example is changes in the FBiH Law on Social Protection, Protection of Civilian Victims of the War and Families with Children (FBiH Official Gazette no. 39/06) from July 2006, enacted a few months prior to the general election, which stipulated financial benefits for so-called non-war persons with disabilities. Very loose eligibility rules resulted in an unexpected growth in the number of beneficiaries, whose rights were beyond the FBiH government's ability to pay. Until the law was changed in 2009,[17] restricting eligibility criteria and halting the number of beneficiaries, the FBiH accumulated debts towards recipients that were never paid the benefits, despite the administration having decided that they should. To receive financial benefit it was necessary to be put on the Ministry of Finance payment list. This could be achieved only through the political party networks that formed the government. Those that did not have access or were denied the access were left without benefits.

CONCLUDING REMARKS

The perverse nature of social policy and social protection benefits in Bosnia and Herzegovina is explained by ethnic political parties using them to generate and maintain political support among certain population groups. Social benefits are traded in exchange for political support, especially prior to elections, which in Bosnia and Herzegovina happen every two years. Due to discriminatory

[16] Zakon o pravima razvojacenim braniteljima I clanovima njihovih porodica (Law on Changes and Additions to the Law on Rights of Demobilised Soldiers and their Families), FBiH Official Gazette no. 27/08.

[17] Zakon o izmjenama i dopunama Zakona o osnovama socijalne zastite, zastite civilnih zrtava rata i zastite porodice s djecom, Sluzbene novine FBiH, br. 14/09 (11.03.2009).

legislation and arbitrary and discriminatory implementation of legislation, inequality has become rampant and is a useful instrument of ethnic clientelist politics. Being legally entitled is not a guarantee that potential social transfer beneficiaries will receive benefits. Instead, the only way to secure benefits is to pledge political support to the ethnic political party that can deliver them.

Maintaining inequality is essential for running clientelistic politics. It is an instrument for keeping political supporters in check, where political loyalty is rewarded with higher benefits that can be withdrawn at any time if political support lapses. In both entities, Bosnia Herzegovina and Republika Srpska, there are two distinct features of non-contributory benefits that enable political bargaining and maintenance of political control. The first is that the benefits and rights granted by social assistance legislation are usually beyond the government's capacity to finance them, so that beneficiaries have to lobby, either individually or in groups, to receive payment. The other distinct feature is inequality at different levels. Firstly, there is pronounced inequality among beneficiaries that should be in the same category. An example would be individuals with a disability, who according to social protection legislation in both entities are divided into four status groups and therefore treated differently depending on their status. Secondly, because of arbitrary assessment procedures and discriminatory application of legislation, which we claim is one of the main instruments of clientelistic policy, recipients under the same law are also treated differently, which perpetuates inequality among same-status recipients. And finally, due to lobbying and bargaining, some recipients receive benefits while others with the same status do not. Hence, a favourable benefit status can only be gained through the political networks that control the administration. The most loyal adherents of the political parties in power are those with a fake status, as they can legally be stripped of their benefits if necessary.

Apart from all this, Bosnia and Herzegovina's clientelism is also complicated by ethnic divisions, which grant even more stability to the leading ethnic, clientelistic parties. War veteran groups such as war veterans with disabilities, civilian victims of war, holders of war medals, demobilised soldiers, and family and children of fallen soldiers are the most privileged beneficiaries in the entity social protection system, where each entity system provides benefits based on ethnicity and affiliation to ethnic armies. War-related benefits are generous and the recipients

are privileged compared to the other groups of recipients. What should be universal benefits, such as means-tested social assistance and some child benefits, are profoundly underfunded and have minuscule coverage due to restrictive administrative conditions, while the level of benefit is meagre and below subsistence level. Hence, the main purpose of the entity system of social protection is to extract public resources to reward ethnic and political loyalty.

Nevertheless, many of the disadvantaged who receive lower benefits are more politically loyal than their peers. Their loyalty is safeguarded by their fear of losing the benefits that they have, no matter how meagrethey are. Loyalty, in spite of its disappointments, is about maintaining a long-term relationship, i.e., relational clientelism, where supporting a certain political party is an investment that is calculated to pay off not only vis-à-vis social protection benefits but also regarding public employment, employment promotion, access to scholarships, etc. Hence, reform of the social protection system by dismantling the status-based system that rewards political loyalty and replacing it with universal social benefits and services based on real need could have a decisive impact on the process of democratisation. Abolishing discriminatory war veteran legislation that grants privileged status to war veterans would enable the country to move away from the nationalist war narratives and would contribute to much needed peace-building within the country.

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TOWARDS A POLITICAL ECONOMY OF WELFARE IN CROATIA

ABSTRACT: *A political economy of social welfare in Croatia explores drivers of, and impediments to, change, addressing the impact of processes of neo-liberalisation, the complexities of regulatory and institutional landscapes and the interactions of nation, familialism, and class. Instead of a stable welfare regime, Croatia's welfare system is marked by hybridity in the context of a political economy that continues to be crisis-prone. This paper focuses on the social welfare implications of the mix of 'crony', 'authoritarian' and 'predatory' capitalism present in Croatia since independence. Other than the role of international actors including the World Bank and the European Union, and notwithstanding the lack of political will for reform, we suggest that two broad forces are dominant in shaping social welfare in Croatia. The first is war veterans' associations and their supporters, keen to maintain and even extend their significant benefits in return for continued support for the HDZ party (Croatian Democratic Union), a quasi-institutionalised form of 'social clientelism'. The second is an empowered radical right, promulgating a conservative Catholic agenda of a return to 'traditional' – that is, heteronormative – family values, reinforcing an aggressive Croatian nationalism and advocating 'demographic renewal'.*

KEY WORDS: *welfare, Croatia, political economy, authoritarian neoliberalism*

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WHITHER POLITICAL ECONOMY? AN INTRODUCTION

Croatia gained independence from Yugoslavia in 1991, and is the second most populous country in the post-Yugoslav space with a population estimated at 4.1 million in 2017 (Croatian Bureau of Statistics 2019). It is the post-Yugoslav country with the second highest GDP per capita– $22,828 in 2017 when it finally surpassed the level at the onset of the 2008 economic and financial crisis of $22,012[1] (World Bank 2019a). Croatia is ranked 46th in the UNDP Human Development Index (HDI) and is in the group of countries with "very high human development" (UNDP 2018). At the same time, based on Eurostat methodology, in 2017 26.4% of Croatia's population was at risk of poverty or social exclusion, the eighth highest figure among EU Member States (Eurostat 2019a), and Croatia had a Gini coefficient of 29.9, the fourteenth highest figure in the EU (Eurostat 2019b). What has been termed Croatia's "uneven welfare patchwork" (Stubbs and Zrinščak 2007: 85) must be understood as the outcome of a series of unsuccessful attempts to secure a "political solution to societal contradictions" (Offe 1984: 147), underpinned by the paradox that "while capitalism cannot exist *with*, neither can it exist *without*, the welfare state" (ibid; 153). Offe's statement has stood as a broad truth since the mid-1970s, with welfare states appearing both functional for capital accumulation and dysfunctional in terms of channelling resources away from private individuals for public purposes. Welfare in Croatia represents an important case study in the politics of class, gender, and (ethnicized) nationalism, requiring both a critical political economy and a conjunctural analytical approach.

In broad brush-stroke terms, critical political economy is much more than the study of economics with some politics added; rather its focus is on the dynamic interactions between, and hence inseparability of, processes commonly termed 'political' and those commonly termed 'economic'. In short, it is concerned with "the distribution of power and wealth between different groups and individuals, and the processes that create, sustain and transform these relationships over time" (Collinson 2003: 10). A political economy of welfare addresses power struggles between groups (social classes) and also between fractions of changing and fragmenting politico-economic elites. The concern is less with "varieties of capitalism" (Hall and Soskice2001), with their tendency towards „methodological

[1] Based on Purchasing Power Parity at constant 2011 international $.

nationalism" through an over-emphasis on the autonomy of nation state structures, and more with "variegated capitalism" (Peck and Theodore 2007), concerned with "the systematic production of geo-institutional differentiation" (Lendvai and Stubbs 2015: 448) in which globalising neoliberalisation processes produce discontinuous and heterogeneous "mutating macro-institutional frameworks" (Brenner et al. 2010: 208). In broad terms, the tradition of 'variegated' analyses acknowledges the global and transnational nature of capitalist forms and relations and rejects an exclusive focus on nation-state container approaches.

Alongside this, conjunctural analysis, described by John Clarke as "not a theory but an orientation" (Clarke 2014: 115), seeks to understand "the exact balance of forces (and) state of over determination of the contradictions at any given moment" (Althusser 1970: 311) or "the character of the … moment – the forces, tendencies, forms of power, and relations of domination and subordination … condensed in a conjuncture" (Clarke 2014; 114). It is a form of analysis concerned with space-time relations at multiple scales, addressing national, transnational, and regional specificities as well as global compressions. Particular focus is placed on 'moments' of crisis and transformation out of which new settlements may emerge. It focuses attention on "the multiplicity of forces, accumulated antagonisms, and possible lines of emergence from the conjuncture, rather than assuming a singular crisis and one line of development" (Clarke 2013: 115). The uneven nature of 'crisis-proneness' is an important framing assumption of the variegated capitalism approach, necessitating an understanding of the "complex ecology of accumulation regimes, modes of regulation, and spatio-temporal fixes" (Jessop 2007: 67) and the ways in which discursive framings of 'crisis' create a kind of "insatiable need for 'next stage' reforms" (Brenner et al. 2010: 210).

Relations, even within the European political space, between so-called 'core' and 'periphery' are being constantly reworked and reconstituted, with policy models themselves reinforcing this division as the centre judges reform progress in the periphery as too slow, formalistic, and instrumentalized. A kind of 'stick and carrot' approach to disciplinary regulation is institutionalized that often merely reinforces an "internal ambivalence" (Blagojević 2009) and inertia (Stubbs and Zrinščak 2019) in terms of the hegemonic reform agenda. At the same time, crisis-proneness allows for a radical recalibration of economic, fiscal, and welfare

policies (Lendvai 2009), producing both a 'clientelistic' or 'captured' and a re-residualized 'social' (Stubbs and Zrinščak 2015).

As Sofiya An (2019) has argued recently, the Agency, Structure, Institutions, Discourses approach (ASID), adapted from original work by Moulaert and Jessop (2006) by Deacon and Stubbs (2013) as a holistic framework for global social policy studies, is particularly suited to the dynamic and fluid arena of post-socialist social policy that, whilst evolving as national projects, "continues to be shaped by global and transnational actors, processes and ideas" (An 2019). The complex interactions between agency (significant individual or collective action), structure (macro-level constraints and opportunities), institutions (sets of governing routines and practices), and discourses (sets of inter-subjective meanings) can be unbundled, at least analytically, as determining factors of radically unfinished, fluid, and contingent welfare assemblages (cf. Stubbs and Zrinščak 2018).

What follows is divided into five sections. The next section develops a tentative conjunctural political economy of independent Croatia and its relation to developments in social welfare. This is followed by a critique of what can be termed the 'Europeanisation paradigm' in which membership of the European Union is conceived as a defining moment in the re-orientation of social welfare in Croatia. A fourth section addresses an alternative thesis in which long-standing forms of political and social clientelism are re-joined, in the current conjuncture, by a shift to the right in terms of the discourses and practices of a radical familialism and a turn to authoritarian neo-liberalism. A tentative fifth section sketches elements of what might form a renewed attention, in the analysis of structures of social welfare, to class analysis. A concluding section looks at the implications of the analysis and suggests avenues for research on welfare futures.

CRISIS, WHICH CRISIS? CROATIAN POLITICAL ECONOMY AND SOCIAL WELFARE ACROSS CONJUNCTURES

An apocryphal statement circulating at the time of the economic and financial crisis, not only in Croatia but also across most of the post-Yugoslav space, was "they say we are in the depths of crisis, but we have always been in crisis for as long as I can remember". In this sense, a conjunctural analysis needs to try to

distinguish between different crises through identifying momentous events[2] that signal the movement from one conjuncture to another, rather than to point to any one crisis as crucial. In these terms, convenient discursive breaks, at least for analytical purposes, are the end of war hostilities in Croatia (and involvement in the conflict in neighbouring Bosnia-Herzegovina) in late 1995 (although Eastern Slavonia was not reintegrated formally into Croatia until January 1998); the death of President Franjo Tuđman in December 1999 and the election of a centre-left coalition government in January 2000; the beginning of the economic and financial crisis in 2008; and accession to the European Union on 1 July 2013. This section is premised also on the assumption that, whilst welfare arrangements cannot be read off deterministically from the prevailing political economy of any given period, there is a strong linkage between such arrangements, discursively, programmatically, and in terms of welfare outcomes, and prevailing political economic forces and antagonisms.

Wartime

The period between 1990 and 1995 was dominated by the quest for statehood in war conditions, such that the Croatian state in the period can be understood as both 'strong' in terms of centralising tendencies, and 'weak' in terms of not controlling its entire territory. The regime, symbolized by the persona of Franjo Tudjman, had both democratic legitimacy and authoritarian tendencies, with formally democratic institutions and procedures continually undermined in the interests of key members of the ruling nationalist Croatian Democratic Union (HDZ) (Dolenec 2013). Enjoying near autocratic presidential power, Tudjman tended to delegate economic policy to a series of technocratic, even pragmatic, Prime Ministers and Ministers of Finance whist setting the tone for close links between political and business elites, not least in his much-quoted aim to create "two hundred rich families to rule Croatia" (Rašeta et al. 2017). The nature of the first phase of privatisation in independent Croatia, radically different from the privatisation models introduced by the government of Ante Marković in the dying days of the Yugoslav Federation (Franičević 1999), was crucial in shaping the path of Croatian capitalism and was marked by rewarding insiders through financial sector allocations based on political patronage, understood by some

[2] These are what Moulaert and Jessop (2006) term "emblematic moments" that mark a signficant change in the state of social relations and forces.

commentators as "legalized robbery" (Baletić 2003). Although it can be seen as being along the lines of 'neoliberal' reforms elsewhere in post-communist Eastern Europe, it did not signal the full-fledged institutionalisation of neoliberalism.

Some other decisions in this period in the sphere of political economy, along with trends that were a direct result of war events, have had a long-term impact on social welfare in Croatia. Crucially, in the context of a war-induced recession, the preferred solution to growing unemployment, particularly in the industrial sector, was to offer incentives for early retirement, artificially reducing levels of registered unemployment but creating significant expenditures and contributing to an unsustainable ratio of workers to retirees for the foreseeable future. Employment fell from 1.51 million in 1990 to 1.00 million in 1997, with most of the fall occurring in 1991 and 1992. How much of this fall was a result of war-induced recession – the most dramatic falls in Croatian GDP were in 1991 and 1992 – and how much was an inevitable post-socialist restructuring in the context of previous over-employment is impossible to estimate. What is clear is that although unemployment increased from 8.2% to 14.9% between 1990 and 1991, the policy of encouraging early retirement kept unemployment rates relatively stable between 1992 and 1995 (Table 1).

Table 1: Croatia: Employment, Unemployment, and GDP Change 1990–1996

	1990	1991	1992	1993	1994	1995	1996
Employment (thousands)	1513.6	1314.7	1159	1108.4	1061.5	1026.8	1028
Reg U Rate	8.2%	14.9%	15.3%	14.8%	14.5%	14.5%	16.4%
GDP Change		–21.1%	–11.7%	–8.0%	5.9%	6.8%	5.9%

Source: Katić (2006): 30–31.

In addition, although it is literally the case that "post-1990 legislation of veteran benefits (in Croatia) was able to rely on both symbolic and institutional legacies from Yugoslavia" (Dolenec 2017: 62), Tudjman and the HDZ's acceptance of a "moral asymmetry" between veterans and the state (ibid: 60), in terms of a debt of gratitude that can never be paid in full, has had long-term repercussions. Legislation on so-called 'Homeland War' veterans' rights from 1994 onwards successfully locked some 500,000 individuals and their families into a form of political clientelism (Stubbs and Zrinščak 2015), with commitments to (largely

passive) veterans' benefits reaching some 1.8% of GDP in 2013 (Dolenec 2017: 63), distorting the social welfare system and securing the mobilisation of veterans' organizations as a significant political force.

A third tendency from this period is what has been termed "welfare parallelism" (Stubbs and Zrinščak 2007), reorienting relations between state and non-state actors and between central and local actors, and, most crucially, introducing a wide range of international actors playing a crucial role in both the governance and delivery of social welfare. In the context of massive forced migration of refugees from Bosnia-Herzegovina and internally displaced persons from parts of Croatia not under government control, statutory Centres for Social Work (CSW) were overwhelmed and a parallel humanitarian apparatus of international and local NGOs emerged, given only begrudging recognition by the state.

This mutual distrust between state and non-state actors proved extremely hard to erase. What is perhaps even more problematic is the elision – a feature of this conjuncture – between authoritarian statism and state provision per se. CSWs and indeed the entire social protection apparatus began to be framed in some quarters as a problematic legacy of socialism that hindered the transition to a capitalist market system. The dominance of 'historical institutionalism' as an explanatory frame for post-communist welfare state analysis – suggesting that socialist legacies tend to be 'locked in' and exert a path-dependent influence on subsequent reforms – added to the problems. International organisations tended to pick this up and to ignore or dismiss the 'exceptional' legacy of Yugoslav social protection, based as it was on a mixture of Bismarckian social insurance, statutory social work services, and socialist self-management, working according to highly productivist assumptions (Stubbs 2018).

Stealth Neoliberalism and the Enemy Within

A kind of "stealth neoliberalism" (Arandarenko and Golicin 2007), a rather soft, undramatic, and incremental version of neoliberalism, was consolidated along with territorial integrity and the mass exodus of the Serbian population in the period between 1995 and the death of Tudjman in December 1999. Whilst the conjuncture is most associated with the change of direction of Tudjman's disciplinary authoritarianism towards the so-called 'enemy within', it is perhaps most pronounced in his speech on returning from the United States, following

mass protests against the withdrawal of the concession from Zagreb's Radio 101, where he railed against "black, green and yellow devils" and "all sorts of false prophets, pseudo-democratic illusionists who preach grand ideas about human rights and media freedom" (quoted in Dolenec 2013: 143–4). The period also saw dramatic demographic change as ethnic Serbs left the territories returned to Croatian government control through military-police operations in May and August 1995 and after the return of Eastern Slavonia through peaceful negotiation in January 1998. Even before the military actions, the OSCE estimated that some 100,000 Serbs lost their tenancy rights in Croatia (ECRE 2010). Subsequent territorial reintegration led to a further exodus of perhaps up to 300,000 Serbs, with only a third of all Serbian refugees returning (Djuric 2010). Some 581,663 people (or 12.2% of the population) declared themselves ethnic Serbs in the 1991 census, but only 201,631 (4.5%) in the 2001 census and 186,633 (4.36%) in the 2011 census, pointing to a general trend and the impact of anti-Serbian rhetoric and practice throughout the Tuđman era.

Alongside privatisation in the first half of the 1990s, Croatian pension reform in the second half of the decade largely set the path of Croatian capitalist development. Here was a critical conjunctural moment, as a major pillar of a credible social insurance system reached 'crisis' point with the ratio of insured persons to retired persons falling from 3.0:1.0 in 1990 to 1.38:1.0 in 1999, with further dramatic falls projected (Stubbs and Zrinščak 2007: 91). In addition, in 1998 the Croatian Constitutional Court, in a sign of its increasing independence, nullified a 1993 government decision to restrict the rise in pensions, creating a 'pensioners' debt' that needed to be repaid. An assertive World Bank filled the crisis space, keen to transfer the findings of its flagship report, Averting the Old Age Crisis (World Bank 1994), across Eastern Europe. As early as November 1995 a joint World Bank-Croatian Government conference on pension reform brought Jose Pinera, responsible for introducing Chilean pension reform under Pinochet in 1981, to promote the Chilean model in Croatia (Stubbs and Zrinščak 2007: 93).

In the end, the reforms adopted were closer to the Argentinian model, with the introduction of a mandatory contributory second pillar for those fulfilling certain age criteria and a voluntary supplementary third pillar but without abolishing the pay-as-you-go first pillar (Vukorepa 2018). Although arguments to reverse the

partial privatisation of the pension system in Croatia have never gained widespread political support, unlike in Hungary, for example (cf. Lendvai and Stubbs 2015), it is certainly the case that the initial reform created the conditions for a kind of 'casino capitalism' and forged a gateway for the growth of "intermestic" (Pugh 2000) finance capital ready to invest in real estate, infrastructure, and the financial services sector, parts of which were subsequently implicated in a number of corruption scandals, including Hypo-Alpe-Adria, Ina-MOL, and, most recently, Agrokor. As noted some time ago, "the ruling party (HDZ) effectively used pension reform as a way of demonstrating its willingness to implement market reform … and its readiness to engage with international financial institutions" (Stubbs and Zrinščak 2007: 95), with the results strengthening both 'insider capitalism' and 'stealth neoliberalism'.

After Tuđman

The death of President Franjo Tuđman in December 1999 and the election of a centre-left coalition government in January 2000 are generally viewed as watershed moments in terms of the consolidation of democracy in Croatia. The period was certainly marked by an openness to all manner of international agencies pushing 'reforms' of one kind or another, often neoliberal in intent. USAID, for example, paid for the former Hungarian Minister of Finance, Lajos Bokros, to act as an economic advisor in the office of Prime Minister Račan to advocate for 'flexible' labour market reforms, although he had limited influence beyond the discursive sphere (Jelinić 2002). The 'carrot' of so-called 'Euro-Atlantic integration'– membership of both the European Union and NATO – was conditioned upon the 'stick' of full co-operation with the International Criminal Tribunal for the Former Yugoslavia in the Hague. Račan's government, in close co-operation with the newly elected President Stipe Mesić, a former member of the nationalist HDZ who had broken with Tuđman in the second half of the 1990s, did purge hard-line nationalists in the Croatian army, but was largely powerless as those perceived as Croatian war heroes, notably Ante Gotovina, fled in the face of ICTY indictments, and grassroots mobilisation of war veterans continued apace. Račan's government completed the legal and administrative aspects of the pension reform, largely uncritically, but attempts to secure wider reform of the social welfare system led nowhere (cf. Lendvai and Stubbs 2009). Faced with a fragmenting coalition, Račan also chose not to revisit the privatisation processes of the previous decade, whether in policy terms or even in

terms of judicial investigation, instead opening up new opportunities for the expansion of intermestic financialisation, notably in the banking sector.

After Račan's second coalition government collapsed, a reformed and supposedly modernised HDZ, led by Ivo Sanader, came to power in December 2003. Sanader, who began a second term in office in January 2008, was later found to be at the centre of a number of corruption scandals, including some dating back to his time as Franjo Tuđman's Chief of Staff. As noted above, many of these scandals were linked to financialisation. At the same time, Croatia's annual GDP growth between 2000 and 2007 was never lower than 3.5% (in 2001), with peaks of 5.6% (in 2003) and 5.3% (in 2007) (World Bank 2019b). Whilst not exactly 'jobless growth', Croatia's employment rate throughout the period hovered around 55% (Eurostat 2019c) and, crucially, services, including financial services, grew more quickly than the real economy. Growth led to a consumption boom, consisting mainly of imported goods.

Global Crisis, Local Effects

By the time Sanader resigned as Prime Minister on 1 July 2008, to be succeeded by his Deputy, Jadranka Kosor, the impact of the global economic and financial crisis had already begun to be felt in Croatia, and was to last much longer than in most countries in the region. The impact was in terms of a loss of industrial production, a concomitant increase in unemployment in those few industrial sectors that remained intact after the deep recession of the early 1990s, and a decrease in exports (Bartlett and Prica 2012). One important and long-lasting transmission mechanism of the crisis in Croatia was the expansion of domestic credit – including loans in Swiss francs, mainly from foreign-owned banks – which later led to massive problems of mortgage default for a substantial section of the Croatian population (ibid.). The policy response to the crisis was largely focused on austerity, including cuts to public sector salaries, the postponement of some planned social programmes, and some reshaping of public expenditure.

The extent to which the EU accession process during this period contributed to a kind of institutional strengthening and resilience to shocks is a matter for debate, not least as the EU itself prioritised fiscal policies, primarily debt reduction and austerity as disciplinary mechanisms. It is certainly not the case, as outlined in more detail below, that Europeanisation processes led to significant changes in

social policies, at least in terms of impacts. Huge problems, in part related to earlier corruption, became more visible in key industrial sectors, including energy, primarily in the controversial Ina-MOL partnership between leading Croatian and Hungarian oil companies. As HDZ itself became the subject of court proceedings over illegal election funds, it was more or less inevitable that a new centre-left coalition, led by the Social Democratic Party of Zoran Milanović, would take power, as it did in the elections of December 2011. Once again, a supposed centre-left government was complicit in a kind of 'stealth neoliberalism', with renewed attempts to introduce greater 'flexibility' into Croatian labour markets.

The Resurgence of the Radical Right

At the same time, the merest hint of curbing war veterans' rights led to a new and more radical mobilisation, culminating in a tented protest outside the Ministry of Veterans' Affairs that lasted 555 days, from October 2014 to April 2016, with significant escalations in May 2015, when on two occasions veterans blocked roads with gas bottles. Although the issue of veterans' benefits in relation to clientelism is discussed at greater length below, what is important here is both the hegemonic nature of the enshrinement of veterans' rights within Croatian politics, with the centre-left government making huge efforts to pacify the protests, and the politicised nature of veterans' protests as a continuous critique of the mere existence of centre-left governments in Croatia. In addition, not unrelated to the broader phenomenon of 'democratic backsliding' after gaining EU Membership (Iusmen 2015; Sedelmeier 2014), this period saw a vociferous extra-parliamentary movement, connecting senior members of the Catholic Church in Croatia with an energetic grassroots and seeking to act 'In the Name of the Family' (as the key organisation was called), initially against gay marriage and subsequently against sex education in school, abortion rights, and a range of other moral political questions – a clear example, as one text put it, of a conservative religious-political movement exploiting opportunity structures in Croatian political economy (Petričušić, Čehulić, and Čepo 2017).

The significance of the parliamentary elections held in November 2015 lies not so much in the inconclusive nature of the result but in the sea change to Croatian politics with the rise of Human Wall (*Živi Zid*), building on the strong performance of its candidate in the presidential elections in January 2015, and

Bridge (*Most*), a hitherto unknown centrist party arising from local political initiatives in and around Metković in the south of Croatia and which subsequently played the role of kingmaker, eventually settling for a coalition with the HDZ whilst insisting that HDZ's leader, Tomislav Karamarko, should not be Prime Minister. The search for a 'technocratic' Prime Minister eventually saw the mandate being given to Tihomir Orešković, a Croatian-Canadian businessman and Chief Financial Officer of a large multinational pharmaceutical company, who lacked direct political experience and, indeed, Croatian language skills, having spent much of his childhood and adult years abroad. A rather surreal period of governance ensued, with Orešković pursuing neoliberal policies and claiming to be a magnate for significant Foreign Direct Investment whilst his wife pursued the agenda of the religious right, participating in anti-abortion demonstrations and reportedly lobbying for the canonisation of the controversial Cardinal Stepinac, Head of the Catholic Church during the WWII fascist Independent State of Croatia (NDH), in an audience with the Pope (Jutarnji list 2019). The experiment ended in acrimonious and abject failure, and led to Karamarko's exit from the HDZ, to be replaced by the seemingly more moderate, technocratically minded European parliamentarian Andrej Plenković.

The rise of vulture capitalism

Plenković became Prime Minister of a coalition government in October 2016, originally with *Most* and later with the centrist HNS (Croatian People's Party), with the support of MPs from the party of the Mayor of Zagreb, Milan Bandić. Plenković has presided over a number of scandals, highlighting his highly instrumentalised and pragmatic approach to politics – at times even willing to secure narrow parliamentary majorities in return for amnesties for politicians charged with corruption. Perhaps more importantly, two major crises at the heart of the Croatian economy, first Agrokor and most recently Uljanik and 3 Maj, provide a clear illustration of the kind of capitalism currently dominant in Croatia.

The unfolding of the crisis in the Agrokor Group, Croatia's largest retail, food, and beverage company, and the hasty passing of Lex Agrokor in March 2017 symbolised the passing from a Tuđman-inspired domestic 'crony capitalism' (Klepo, Bićanić, and Ivanković 2017), however unhelpful the term, in the persona of a lone entrepreneur utilising his political connections (in this case Ivica

Todorić), to a more 'intermestic' vulture capitalism[3] with restructuring in the interests of a network of venture capitalists, consultants, and political and financial insiders, in this case centred around the Borg group and Plenković's Minister of the Economy, Martina Dalić (cf. Dalić 2018). Not unlike earlier 'strategic investment' decisions made under the Milanović government, the restructuring of Agrokor, presented as being in the national interest, has privileged particular financial interests over others, notably small traders and the workforce (Grubišić Šeba 2018).By contrast, the crisis of shipbuilding in Croatia – dating back to the civil war or even before, and itself illustrative of shifts in the global division of labour, culminating in the bankruptcy of one shipyard in Pula (Uljanik) and the possible bankruptcy of another in Rijeka (3 Maj) following the failure to secure Chinese investment – indicates a willingness on the part of government to let traditional industries die if there is no financial interest in them. In many ways, Plenković has led yet another HDZ government with no clear economic or social policy, thus far uniting diverse wings of the party through a kind of ad hoc-ery in political economy. Crucially, the failure of Europeanisation as a progressive project and the rise of the radical right have each been of particular importance in terms of social welfare. These are discussed in the following sections.

BEYOND EUTOPIA? THE LIMITS OF THE EUROPEANISATION PARADIGM

A critical political economy is, of necessity, suspicious of a positive, linear, modernist understanding of Europeanisation and its impact on social policy in terms of "catch-up, convergence and mutual learning" (Stubbs and Lendvai 2016: 32), focusing instead on "a set of mediated, post-colonial encounters and translations, marked by the enactment and embodiment of performative fictions and frictions" (ibid). However, when we consider that processes of Europeanisation in Croatia coincided with the European Union's emphasis on debt reduction and austerity, culminating in a radical re-assembling and disciplining of 'the social' and a reconfiguration of the European 'core' and 'periphery', the space for inducing progressive social policy was reduced to virtually nil. Even this kind of argumentation may, inadvertently, lead to an

[3] The phrase 'intermestic vulture capitalism' connotes the co-production of financialisation by Croatian and international actors and the tendency to asset-stripping and quick profits rather than sustained and sustainable direct investment.

exclusive focus on the role of the European Union at the expense of an exploration of the reanimation and reworking of the transnational policy space in which both the World Bank and the IMF play crucial roles (Lendvai and Stubbs 2015).

In a sense, the fiscal space for any expansion of social policy in Croatia was constrained by Croatia's inclusion in the EU's 'excessive deficit procedure' between January 2014 and June 2017, and successive governments' insistence that veterans' benefits are untouchable and, in the case of the current government, that expenditure on such benefits could and should even be increased. Although never subject to the 'fiscal waterboarding' that the Greek government faced, the focus on debt reduction and balanced budgets as the prime objectives of economic policy remained significant in structuring Croatia's fiscal policies in the years during and immediately after the global economic and financial crisis. As Mislav Žitko has argued recently (Žitko 2019), Croatia's quest to join the eurozone as soon as possible will constrain development options in the future and make any kind of reindustrialisation impossible, whether environmentally sustainable or not. Croatia, like other European peripheral states, is trapped by a European re-animation of the Washington consensus (Stubbs and Lendvai 2016), with social policies 'disembedded' within the new international division of labour between the 'Troika', amidst the recalibration of EU regulatory discipline to focus exclusively on economics and finance. The rapidly changing landscape of EU governance involves the rolling out of macro-economic adjustment programmes to policy domains such as pensions, healthcare, labour markets, and social protection, combining an emphasis on 'doing more with less' with a rise in explicit 'responsibilising' conditionalities.

Indeed, notwithstanding periodic attempts, at least discursively, to render the 'European Semester' more social, the cycle of assessment, reporting, and recommendations that all EU Member States are subject to remains "primarily about economics", as a European Commission staffer stated in Zagreb recently in a consultative meeting. Indeed, one can argue that attention to social policy also tends to be dominated by fiscal issues, even when framed in more neutral terms such as 'modernisation': recent Country Specific Recommendations for Croatia have focused on the unsustainability, rather than the inadequacy, of pensions, and the failure to curb health expenditures. In this context, even the cursory attention

given to veterans' benefits in the Commission's Staff Working Document for 2017, alerting the government to the need to assess the efficacy of spending on veterans "in the context of other social expenditure items … (and) labour market effects" (European Commission 2017: 37) was relatively mild and reinforced by a message, from the same consultative meeting noted above, that "veterans' benefits would never become a Country Specific Recommendation". The World Bank has also frequently stated that spending on veterans is a political choice that the government is free to make (Stubbs and Zrinščak 2019:296).

The impact of the European Union on Croatian social policy can also be addressed in terms of the prolongation and deepening of a kind of 'projectisation' in which social welfare and its reform become 'micro-ized' (Tendler 2002). In short, the 'project imperative' substitutes for initiatives on 'a broader canvas' (ibid: 2) and serves to depoliticise social policy, in the process rendering NGOs mere 'implementing partners' – technocratic managers rather than vociferous advocates for progressive change. EU-financed projects have gradually become 'the only show in town' but their relevance and impact, low to begin with, is decreased further by the time taken from initial assessment to implementation and by the instrumentalised nature of that implementation.

The European Union has barely addressed 'welfare parallelism' in Croatia, despite occasional reference to the need for policies to challenge growing spatialised inequalities. Although heavily centralised, welfare in Croatia is implemented at the local level and there is considerable discretion for local governments, particularly the richer cities, to pursue their own social policy, often enrolled in clientelistic capture networks (Hoffman et al. 2017). There appears to be an inverse care law regarding local projects, in which the most active and best-funded NGOs operate in areas that need them least (Stubbs and Zrinščak 2019b). The European Union's 'timid' focus on social welfare is almost exclusively focused on the national level. At the same time, quite expansive sub-national-level EU 'regional programmes' focus on competitiveness and innovation issues with almost no social dimension (ibid).

However, some processes that predate the economic and financial crisis, notably Croatia's enrolment in the Joint Inclusion Memorandum (JIM) process from 2005, resulted in a discursive re-ordering of priorities in Croatian social policy.

When combined with the Joint Assessment of Employment Policy Priorities (JAP) signed in May 2008, the emphasis tended to be on employment and labour market issues, although the JIM document, signed by the Government of Croatia and the Commission in March 2007, opened up some social policy issues that were not directly related to questions of employment. Certainly, JIM and subsequent monitoring processes challenged the absence of any impact assessment based on clear indicators, much less on rigorous evaluation and lesson-learning. If only performatively, it also challenged the absence of any stakeholder involvement and consultation, although services users were still, on the whole, excluded.

The JIM process did serve to broaden discussion of social policy to include domestic violence, anti-discrimination, and deinstitutionalization (Stubbs and Zrinščak 2019b). It also led to statistical convergence between Croatia and EU Member States. As the crisis hit, some commitments within the JIM were dropped, notably a 'social pension' for those over 65 neither receiving a pension nor claiming social assistance and a proposed law enshrining the right of people with disabilities to an assistant. In any case, JIM commitments were largely confined to a marginalised part of a marginalised ministry with little impact on issues of healthcare policy or education. Even at the height of the commitment to JIM, linkages to progress on accession and use of EU finds were rarely made. As we note below, as well as technical backsliding (in 2017 and 2018 Croatia did not even draw up a National Social Report), in the context of the re-assertiveness of a radical right it is the more political elements of backsliding that are most important.

THE GREAT MOVING-RIGHT SHOW? CLIENTELISM, FAMILIALISM, AND NEW AUTHORITARIAN NEOLIBERALISM

The concept of 'authoritarian neoliberalism', whether rendered singular or plural, captures something of both global trends in political economy since the 2008 global economic and financial crash and the nature of the contemporary state formation in Croatia. Understanding the many, and sometimes perverse (Dagnino, 2005) ways in which a mutated neoliberalism has combined with an authoritarian, nationalist, and populist political settlement is crucial to understanding the current conjuncture. Stuart Hall's strictures on the UK under Thatcherism, focusing on 'authoritarian populism' as central to 'the great

moving-right show', is helpful for the analysis of Croatia here. As Hall noted, the governmental work performed by authoritarian populism is always that of "map(ping) out the world of problematic social reality in clear and unambiguous moral polarities" (Hall 1980: 179).

In Lendvai-Bainton's terms, authoritarian neoliberalism combines political and social authoritarianism, seeking to produce "targeted and systematic patterns of social divisions, marginalisations and insecurities" (Lendvai-Bainton 2019: 270). In Croatia it rests on a renewed heteronormative familialism, repatriarchialization, national and ethnicized demographic renewal, and anti-immigrant sentiments. Social welfare, then, is not marginal or a side effect of authoritarian neoliberalism, but a privileged arena of struggle for a hegemonic moral economy. Authoritarian neoliberalism foregrounds welfare as socio-political govern mentality through discipline, compliance, and control, combined with what Bruff (2014) has termed an explicit and systematic marginalisation of subordinate social groups. We are witnessing, then, in Croatia but also more widely across the European periphery, an „intensification of state control over every sphere of … life combined with radical decline of the institutions of political democracy and with draconian and multi-form curtailment of so-called 'formal' liberties" (Hall et al. 2013: 203–204).

Still, in Croatia, much of this renewed energy on the right remains discursive and has not yet impacted fully on the lives of much of the population. It is perhaps in the arena of gender and sexual politics and policies that the restructurings have been most dramatic. Processes that Josip Županov termed 'repatriarchialization' (Županov 2002), a form of Hall's 'regressive modernization' (Hall 1988), have continued apace. If we accept that patriarchy never really went away, we may rephrase this as a 'reformed', 'renewed', or 'radical' patriarchalization. As noted above, Croatia forms a key nodal point in a broader transnational movement or network of religious conservatism. In Croatia, key figures in the Catholic Church and a number of right-wing politicians have supported citizen's initiatives from below. The greatest success of this movement was in redefining, through a popular referendum held in December 2013, the definition of marriage in the Croatian Constitution as 'the union of a man and a woman', a crucial building block in a wider attempt to rollback the Europeanisation of gay rights (Slootmaekers and Sircar 2018). The opportunisitic nature of this movement is

most clearly illustrated through the example of the mobilisation against the Council of Europe's Convention on the Prevention of Violence Against Women, popularly known as the Istanbul Convention, that connected ratification of the Convention with so-called 'gender ideology' (Petričušić 2018).

The political agenda of this movement extends to restricting abortion rights in Croatia, as well as desecularising education. In short, what is at stake is nothing less than renewed control over the means of reproduction, enhanced corporeal control, particularly of women's bodies, and the establishment of a welfare settlement based on variegated, or layered, social citizenship, with rights for the 'deserving' combined with control of the 'undeserving'. As this grassroots agenda is turned into central and local state practices it evokes an extension of benefits to 'good Croats', especially women who stay at home and look after children. Notably, at the local levelthe Mayor of Zagreb has been a forceful advocate on behalf of this radical right conservative agenda, including a return to 'traditional' family values, and has introduced measures to promote so-called demographic renewal including a scheme to pay mothers to look after their own children (Stubbs and Zrinščak 2019b).

The recent establishment of a Ministry of Demographics, Family, Youth and Social Policy shows, discursively at least, the new government's prioritising of the issue of demographics in the context of low birth rates and significant emigration of people of working age, including skilled workers and some professionals. Measures to stimulate the birth rate include increased birth grants and the widening of criteria for entitlement to child benefits. This focus on demographic renewal has gone hand in hand with elements of welfare chauvinism, including rhetorical statements by politicians in areas of high Roma settlement on the need to replace cash benefits with food vouchers (cf. Brakus 2019), and a constant discursive undercurrent relating to memories of the 'Homeland War' and even a revision of historical accounts of the Second World War (cf. Pavlaković, Brentin, and Pauković 2018).

A state-led turn to 'illiberalism' remains more advanced in Hungary, for example, than Croatia (cf. Lendvai-Bainton 2019), but aspects of this are relevant, including the curbing of independent voices such as the Ombudsperson for Children (Stubbs 2016) and independent media, as well as interference with

judicial structures. Perhaps even more importantly, a combination of discursive authoritarianism and nationalism is likely to have a pernicious impact on a social welfare and healthcare system largely based on front-line bureaucratic and administrative discretion, as well as informality in terms of relying on personal contacts with people in the system rather than on institutional rules (cf. Brković 2017 on similar processes in Bosnia-Herzegovina).

Indeed, the weaving of clientelistic capture into this mosaic challenges the dominant view of capture as being largely incompatible with free market neoliberalism. Crucially, by redefining clientelism as "a broad set of hegemonic political practices and strategies marked by particularistic modes of governance, exclusivist definitions of citizenship, and assymetrical distribution and redistribution of resources" (Stubbs and Zrinščak 2015: 398), the study of clientelism can be steered away from linear notions of exchange of patronage for votes, thereby opening up new avenues of research focused on political actors and their schemes.

One aspect of clientelism is the enrolment of the Croatian diaspora in the Croatian nationalist state-building project, including, crucially, ethnic Croats from Bosnia-Herzegovina. This is important not only in terms of political and citizenship rights, but also in terms of Croatian state funding and steering of educational and healthcare provision in Croatian-majority areas of Bosnia-Herzegovina. However, the central pillar of clientelism in social welfare relates to the distorting and 'crowding out' effects of benefits to war veterans and their families, noted above. The continued salience, indeed expansion, of these rights, as well as their transmission inter-generationally, continues to have far reaching implications in terms of undercutting social welfare claims based on need and citizenship. Croatia has the highest rate of disability pensions in the European Union (Bađun 2011: 2017) with a significant amount of claims related to diagnoses of trauma or PTSD, with veterans' disability benefits claimed, on average, at a younger age, and being some 2.5 times higher, than pensions paid to non-veterans. Such benefits crowd out rather than trickle down: Croatia still has "a severely under developed system of support services for civil disabled and low levels of integration of children with disabilities into mainstream education" (Stubbs and Zrinščak 2015: 404). As Table 2 shows, social protection benefits increased between 2008 and 2014 but remain significantly below those in the EU-

28, while means-tested benefits are only a fraction of the EU-28 average. Perhaps even more importantly, as noted above, it is the institutionalisation and solidification of clientelism into the Croatia political fabric that is most important, linked with opportunities for international venture capitalism particularly in areas designated as 'strategic investments', including at local state level (Hoffman et al. 2017).

Again, rhetorically at least, Croatia is marked by a discursive shift from needs-based social welfare to a kind of caritative humanitarianism. This was most marked, symbolically, in the discourse of Croatian President Kolinda Grabar Kitarović in her election programme (Škokić and Potkonjak 2018). It exists next to a residualised, marketised, and fragile social welfare system for anyone at risk of poverty and exclusion. In short, the systemic production of insecurity seems set to become a core feature of welfare policies in which normative frameworks, institutional structures, and professional and voluntary conduct are all reconfigured. New discourses and practices of 'welfare' and 'care' are emerging that are "fraught, uncertain, and provisional" (Hromadžić 2017: 90), creating new chains of meaning, new regimes of blame and virtue, recalibrations of 'moral citizenship' (Muehlebach 2012), and new marginalisations, subordinations, and silences. In Croatia the idea of a welfare state is less attractive to political elites than harsh workfare for the undeserving, reliance on the mobilisation of connections wherever possible, and a lottery of caritative humanitarianism even for those seen as more 'deserving'.

Table 2: Social Protection Expenditure 2008–2016, % GDP

	CROATIA		EU-28	
	Social protection	Means-tested	Social protection	Means-tested
2008	18.2	1.0	24.8	2.9
2010	20.5	1.0	27.4	3.3
2012	21.1	1.1	27.6	3.3
2014	21.4	1.1	27.6	3.3
2016	20.9	1.0	27.1	3.3

Source: Eurostat

BRINGING CLASS BACK IN? WELFARE STRUCTURES, EXIT, AND LOYALTY

Clearly, a political economy approach must of necessity 'bring class back in' to the picture, whether or not class is conceived in a Marxist or neo-Marxist framework. Theorisations of social class have a long history in studies of social welfare in the North and West. As noted elsewhere (Stubbs 2018), Marxist analyses can be marked by a problematic functionalist determinism, with welfare seen as a necessary correlate of class rule, not least in terms of accumulation and reproduction, or as a repressive state apparatus (Althusser 1970). The pioneering work of Esping-Anderson (1990) began to see 'welfare regimes' – albeit still too fixed within a methodological nationalist understanding of the nation state as container – as a product of class struggles and in particular the struggles of organised labour in relation to the capitalist class. More explicitly, Marxist work by Ian Gough (1979) and James O'Connor (1979) sees welfare states as essentially class compromises, contestations, and contradictions. Nancy Fraser's work (Fraser 2017), building on earlier Marxist-feminist texts, seeks to address the complex relations between welfare, households, and paid and unpaid work.

Following Erik Olin Wright (2015), a narrow adherence to classical Marxist theory, immune from the influences of 'bourgeois sociology', is unhelpful. Recognising that the conditions of capitalism that Marx wrote about are very different from those today, there is a need to highlight both the existence of intermediary classes between the bourgeoisie and the proletariat and, following Bourdieu in particular, to recognise the tendency of classes to fracture internally in relation not only to economic capital but also to social, cultural, and symbolic capital (Bourdieu 1986).Although heavily criticised, Guy Standing's work on 'the precariat' (Standing 2011), most helpful if we think more in terms of dynamic processes of 'precariatization' across the international division of labour, has also enriched class theory.

There has been too little work undertaken on the class structure of the post-Yugoslav space, including contemporary Croatia, with little of this focused directly on social welfare. Although utilising imprecise concepts such as 'societal interests' and 'interest groups', Vuković and Babović (2013) have explored how fractions of the middle class formed a relatively stable and influential policy network, composed of academics, NGO workers, and professionals, able to exert a significant influence over the shaping of social policy in Serbia. Following Reay

(2005), Karin Doolan and her colleagues (Doolan et al. 2019)have focused on "the affective dimension of class" in charitable giving and receiving in Croatia, but the class structure that allows for the replacement of public provision by charity is largely absent from their analysis.

Intuitively rather than empirically based, and with no attempt made to address the relative size of different social classes, Figure 1 below, when allied with Hirschmann's classic understanding of "exit, voice and loyalty" (Hirschmann 1970), is illustrative of key aspects of the Croatian social welfare system when viewed through a class lens. Clearly, the capitalist class portrayed in this way has no interest in the development of a universal welfare state. Managerial and political elites are also far more likely to turn to the market or to use their not insignificant informal power to receive priority and privileged services. The fracturing of the middle class, the splitting of an impoverished public sector class from the traditional middle class, and, crucially, a new 'project' class, "the projectariat" in Catherine Baker's terms, adapted from the idea of 'precariat' (Baker 2014), also mitigate against the exercise of voice in favour of universal social rights. The shrinking of the relatively well protected unionised working class and the concomitant reduction on the power of trade unions is linked to the precariatisation of many aspects of the labour market and the existence of a significant surplus labour of permanently or semi-permanently unemployed or labour-market inactive people.

Crucially, loyalty and voice in Croatian society is exercised through the status of being a war veteran or the family member of a war veteran, and through claiming or being assigned a positive Croatian national identity. Not unrelated to previous waves of out-migration under socialism, but taking on increased significance since Croatia joined the European Union in 2013, exit from the system through labour market migration, not only to 'traditional' places such as Germany and Austria but to new centres such as Ireland and compounded by the material benefits of remittances for those left behind, represents a further erosion of any possibility of a demand for a welfare state.

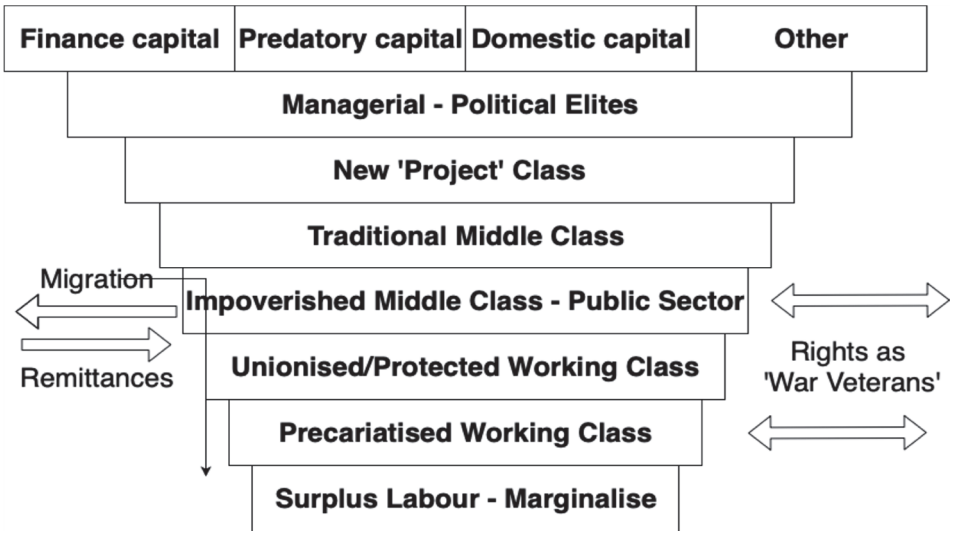
This sketch is in urgent need of empirical validation and amendment if it is to be anything more than a "plausible story" (Stubbs 2015: 67). At the very least, though, it suggests that a number of indicators not normally associated with

welfare and well-being need to be brought into the picture. These include the number of registered war veterans: as noted above, this is now over 500,000 and needs to be multiplied perhaps three-fold to include their dependants and survivors. In addition, levels of out-migration, notoriously difficult to calculate from official statistics, become of central importance. One recent study suggests that the active population in Croatia has fallen by around 10% in a decade, losing some 183,000 workers (Prvi Plan 2019), the majority of the lost workforce having migrated.

A crucial indicator is the level of trade union membership, which remains above the EU average at around 34% (European Commission 2014), although Bagić (2010) suggests that the proportion is much higher in the public sector (68%) than the private sector (around 17%). In addition, the proportion of the working population on temporary contracts is significant, and here Croatia has one of the highest figures in the EU, reaching 22.2% in 2016 compared to the EU average of 14.2%, and with only Portugal, Spain, and Poland having higher rates (Eurostat 2017). The size of the project class is impossible to estimate and here there is in any case a need to distinguish between managerial consultants, such as those who benefitted enormously from short-term assignments during the restructuring of Agrokor, and those in NGOs struggling to maintain a decent income through a series of projects. Managerial contracts tend to be significantly high in Croatia, and together with other forms of income for the top 10% suggest that traditional measures of inequality, such as the Gini coefficient, need to be replaced or at least complemented by ratios of, say, the top 10% compared to the bottom 50% of incomes (cf. Blanchet et al. 2019).

Of course, if we consider class in both structural terms and in terms of consciousness and action, then the impossibility of a welfare state cannot be read off from such a class structure. Indeed, predictions of 'the end of the welfare state' in other parts of Europe have had to account for its persistence, seemingly against all odds. In any case, as John Clarke reminds us, it is the welfare state as imaginary, expressing different conceptions of "the relationship between politics and society, between people and government and between state and society" (Clarke 2004: 19) that matters. A cold and dry depiction of class structure, then, can tell us only so much in terms of the ideological work that conceptions of welfare perform.

Figure 1: A representation of class and welfare in Croatia



CONCLUSIONS: SOCIAL POLICY RESEARCH RELOADED

This paper has covered very many, but not all, of the issues necessary for a thorough political economy of social welfare in Croatia. It pays too little attention to social mobility, or the lack thereof, and the role of the education system in perpetuating the inter-generational transmission of inequality (cf. Doolan et al. 2017). The complexities of intersectionality linking – at the very least – gender, class, and ethnicised identification have also proved difficult to address. In addition, the link between social welfare and the environment in the context of a fragile eco-system (Stubbs 2013), and the importance of struggles for a "social commons" (Mestrum 2016) have been largely ignored, primarily through lack of space. In recent years, particularly in Spain and now in Croatia, a renewed attempt to develop social programmes within a radical municipalism is again on the agenda and will likely need to be given more attention in the future. In addition, issues of migration and remittances will of necessity play a greater role in the development of transnational assemblages of welfare and care. None of these issues, separately or together, run against the logic of the importance of political economy and conjunctural approaches to social welfare.

Speculating on future scenarios for a political economy of welfare in Croatia is fraught with danger, although the combination of heightened political conservatism at the level of discourse alongside an active reform agenda seems most likely still to result in relative 'inertia' in terms of actual changes on the ground (Stubbs and Zrinščak 2019). At the same time, the absence of a 'strong leader' willing and able to harness right-wing grassroots mobilisations and introduce more explicitly 'authoritarian populist' politics and policies cannot be taken for granted. Croatia seems destined for a kind of 'contradictory etatism' in welfare terms, assigning an important role to market forces of both 'predatory' and 'captured' forms, nationalism, and a charitable humanitarianism reworking 'moral economies' of 'deserving' and 'undeserving'. Rescuing the study of social policy from the residual and marginalised position it occupies currently in the social sciences is no guarantee of more universalist conceptions of social welfare in the real world. It is, however, a useful first step.

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WHAT LIES BEHIND THE GENDER WAGE GAP IN SERBIA?

ABSTRACT: *Large gender inequalities have persisted in the Serbian labour market. One of the key indicators of labour market inequality is the gender pay gap. This paper examines the gender pay gap in Serbia based on data from the Survey of Income and Living Conditions. Our findings show that on average women earn far less than men, a gap that has increased slightly over time. The paper offers an in-depth analysis of this gender pay gap in Serbia by decomposing the gender pay gap into an explained part related to difference in characteristics and an unexplained part related to differences in returns attributable to these characteristics. In addition, it provides an estimate of selection effects on the gender pay gap using an innovative methodology that corrects for sample selection bias.*

KEY WORDS: *gender pay gap, discrimination, selection into employment, Serbia*

JEL CLASSIFICATION: C21, J16, J70

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1. INTRODUCTION

Gender inequality in the labour market has long been identified as a problem for public policy in Serbia (Krstić & Reilly 2000; Reva 2012). The Gender Equality Index (GEI) quantifies gender equality in the EU and is published by the European Institute of Gender Equality.[1] The GEI is a composite indicator based on the core domains of work, money, knowledge, time, power, and health, and two satellite domains, violence and intersecting inequality. In 2014 it was calculated for the first time for Serbia. In 2016 the GEI for Serbia was 55.8 (Babović 2018), compared to an average of 66.2 in the EU28,[2] putting it in 22nd place when compared to the 28 EU countries. The difference between Serbia and the EU28 is most pronounced in the domains of power, money, and time use. Although Serbia's GEI increased between 2014 and 2016 the difference between Serbia and the EU countries is still high. The latest National Strategy for Gender Equality in Serbia for 2016–2020 (Official Gazette RS No 4/2016) states that gender discrimination persists due to the huge difference between the official principles and their practical implementation.

Given that gender discrimination in many domains is persistent in Serbia, the aim of this paper is to examine whether there is discrimination in wages between women and men. The gender pay gap is one of the most important indicators of women's access to economic opportunities. In Serbia the labour force activity and employment rates of women are low compared to those of men, while the gap is much larger than the equivalent gap in EU countries. Although the gender gap between labour market indicators has narrowed since 2008, it remains extremely high. According to the latest Labour Force Survey (LFS), in 2018 the female employment rate was 40.3%, 15.1 percentage points lower than the male employment rate (55.4%). At the same time the female activity rate was 46.7% or 16.2 percentage points lower than the male activity rate (62.9%). A European Commission report for Serbia argues that women are the most discriminated group in the labour market after Roma people (European Commission 2016).

This research contributes to the literature in three ways: (1) it provides an update on the gender pay gap in Serbia based on Survey of Income and Living Conditions

[1] https://eige.europa.eu/gender-equality-index/about

[2] GEI ranges between 1 (total inequality) and 100 (total equality).

(SILC) data for 2014 and 2015, whereas previous research refers to 2013 (Žarković-Rakić & Vladisavljević 2016); (2) it offers an in-depth analysis of the gender pay gap in Serbia, as the decomposition of the gender pay gap into that related to difference in characteristics (explained) and that related to differences in returns attributable to these characteristics (unexplained) was not explored in the latest research; and (3) it provides an estimate of selection effects on the gender pay gap using innovative methodology for correcting for sample selection bias.

This paper is organized as follows. Section 2 reviews existing literature on the gender pay gap in Serbia, section 3 describes the methodology applied, while section 4 reviews the survey data used and provides summary statistics for wages by employees' personal and job characteristics. Section 5 reports the main empirical results and the final section concludes the paper.

2. LITERATURE REVIEW

Becker (1957) analysed discrimination as a consequence of race, religion, gender, social class, and personality. He explored different aspects of discrimination and set the theoretical framework for analysing economic aspects of discrimination. Since this is an empirical work, we will focus on empirical research dealing with the gender pay gap in Serbia.

Before reviewing the empirical literature on the gender pay gap, it is important to define the different ways the gender pay gap is estimated. In the literature on wage inequality the unadjusted gender pay gap is defined as the difference in average log wages between men and women. The unadjusted gender pay gap does not take into consideration individual and job characteristics such as education, labour market experience, occupation, sector of economic activity, etc. The adjusted gender pay gap is the gap in wages between men and women that remains unexplained when individual and labour market characteristics are taken into account. Therefore, the adjusted gender pay gap is also called the unexplained part of the gap.[3] Eurostat defines the gender pay gap in its unadjusted

[3] The terms unadjusted and adjusted gender pay gap are used in many empirical studies, e.g., Avlijaš et al. (2013); Krstić (2002), Anić (2019); Perugini, Žarković, & Vladisavljević (2018); etc.

form as the difference in the average gross hourly wage between males and females as a percentage of the average gross hourly male wage. The indicator has been defined as unadjusted because it gives an overall picture of gender inequality in terms of pay and measures a concept that is broader than the concept of equal pay for equal work. It is calculated for businesses with ten and more employees by using the Structure of Earnings Survey (SES).[4] Eurostat publishes data on the unadjusted gender pay gap for EU countries. The Statistical Office of the Republic of Serbia (SORS) conducted a pilot research Structure of Earnings Survey in 2014 and calculated the gender pay gap based on the Eurostat methodology. According to the 2014 SES, women in Serbia earn 8.7% less than men (RZS 2017).

The first research on the gender pay gap in Serbia dates back to the 1990s. Krstić & Reilly (2000) estimate the gender pay gap in FR Yugoslavia (consisting of two republics, Serbia and Montenegro) using LFS data for the period 1995–1998 and Juhn, Murphy, & Pierce (1993) decomposition. The unadjusted gender pay gap for hourly wages increased from 10.1% in 1995 to 14.8% in 1998. The adjusted gender pay gap also increased, from 10.7% in 1995 to 16.1% in 1998. The explained part of the gap was rather small, –0.6% and –1.3% in 1995 and 1998, respectively, indicating that the entire gender pay gap was the consequence of discrimination and unobservables (the unadjusted and adjusted gender pay gap were almost equal). Summary results from the literature review of the gender pay gap in Serbia are presented in Table 1.

Using LFS data, Kecmanovic & Barrett (2011) estimate the gender pay gap in 2001 and 2005, covering the first period of transition in Serbia. They find that the adjusted pay gap decreased from 17.2% in 2001 to 10.5% in 2005. Blunch & Sulla (2011) and Reva (2012) investigate the period 2008–2009, capturing the first effects of the economic crisis on the gender pay gap. Their findings suggest that the gender pay gap reduced as a consequence of the economic crisis, since the sectors most affected by the crisis had a higher share of male employees (e.g., construction). Using the UNDP Social Inclusion Survey in 2010, Blunch (2010) examines the gender pay gap in Serbia and other countries such as Kazakhstan, Macedonia, Moldavia, Tajikistan, and Ukraine. He estimates the adjusted wage gap in Serbia to be 20%.

[4] https://ec.europa.eu/eur/ostat/statistics-explained/index.php/Gender_pay_gap_statistics

Avlijaš, Ivanović, Vladisavljević, & Vujić (2013) analyse the gender pay gap in the three ex-Yugoslav republics, Serbia, Macedonia, and Montenegro, covering the pre-crisis, crisis, and post-crisis period (2008–2011) using LFS data. In Serbia the unadjusted gender pay gap amounted to 3.3%. The explained part of the gap was negative (–7.7%), as women's better individual and labour market characteristics narrowed the pay gap between men and women. The adjusted gender pay gap was 11%, as the returns to observed characteristics favour men relative to women and widen the gap.

Most researchers use LFS data to estimate the gender pay gap, while a recent study uses SILC data. Žarković-Rakić & Vladisavljević (2016) examine women's access to economic opportunities in Serbia using SILC data for 2013. The authors estimate the Mincer wage equation by the ordinary least squares method (OLS). The unadjusted gender pay gap amounts to 4.5% and the adjusted gender pay gap to 13.8%.

Žarković-Rakić, Vladisavljević, Prokić, & Poljak (2018) investigate how fiscal consolidation influences the gender pay gap, comparing the gender pay gap using LFS data for 2014 and 2015. The authors find that fiscal consolidation slightly reduced the adjusted gender pay gap from 14.5% in 2014 to 13.2% in 2015, although the unadjusted gender pay gap was almost unchanged.

It is not possible to directly compare the current gender pay gap with the gender pay gap in the 1990s due to the different datasets, explanatory variables, methodologies, and economic backgrounds. Bearing in mind all these limitations, we may conclude that the unadjusted gender pay gap is lower than it was in the 1990s. The explained part of the gap remains negative but is much higher (in absolute terms) than it used to be. The structure of the gap has changed. During the 1990s the mean difference in wages was mainly the consequence of discrimination (and unobservables), whereas nowadays it is due to both difference in characteristics and discrimination. These two effects work in opposite directions. The difference in characteristics reduces the mean difference in wages between men and women due to women having better individual and labour market characteristics. On the other hand, discrimination and unobservables increase the mean difference in wages between the two gender groups.

Table 1: Literature review of the gender pay gap in Serbia

Authors	Period	Data	Methodology	Dependent variable	Unadjusted gap	Adjusted gap (unexplained part)
Krstić & Reilly (2000)	1995–1998	LFS	Juhn, Murphy, and Pierce decomposition	Hourly wage	10.1% in 1995 14.8% in 1998	10.7% in 1995 16.1% in 1998
Blunch (2010)	2010	UNDP Social Inclusion Survey	Blinder–Oaxaca decomposition	Monthly wage	12.4%	20%
Kecmanovic & Barrett (2011)	2001–2005	LFS	Blinder–Oaxaca decomposition	Hourly wage	14.4% in 2001 5.4% in 2005	17.2% in 2001 10.5% in 2005
Blunch & Sulla (2011)	October 2008 –October 2009	LFS	Mincer wage equation, OLS method	Monthly wage	–	17.5% in 2008 13.3% in 2009
Reva (2012)	April 2008– October 2009	LFS	Blinder–Oaxaca decomposition	Monthly wage	9.2% in 2008 4.6% in 2009	15.6% in 2008 11.7% in 2009
Avlijaš, Ivanović, Vladisavljević, & Vujić (2013)	2008–2011	LFS	Blinder–Oaxaca decomposition	Hourly wage	3.3%	11%
Žarković-Rakić & Vladisavljević (2016)	2013	SILC	Mincer wage equation, OLS method	Hourly wage	4.5%	13.8%
Žarković-Rakić et al. (2018)	2014– 2015	LFS	Blinder–Oaxaca decomposition	Monthly wage	10.8% in 2014 10.5% in 2015	14.5% in 2014 13.2% in 2015

Source: Authors' presentation

3. METHODOLOGY

We analyse the gender pay gap for employees using the Mincer wage equation (Mincer 1974) and Oaxaca-Blinder decomposition (Oaxaca 1973 and Blinder 1973). When estimating the gender pay gap, we take into account selection effects. A selection equation is estimated by multinomial probit using Bourguignon et al.'s methodology (Bourguignon, Fournier, & Gurgand 2007) instead of the Heckman approach (Heckman 1979), as is the case for previous research on Serbia.[5] This methodology allows us to take into account that selection into the two different types of employment – wage employment and self-employment – might differ.

Starting with the Mincer wage equation (Mincer 1974), the unadjusted and adjusted gender pay gap are estimated as follows. The dependent variable Y is the log hourly net wage. X is the vector of explanatory variables and G is the gender binary variable (1 if female, 0 if male) with parameter γ. ε is the error term. β is the vector of parameters that measure the effect of each explanatory variable (except gender) in the wage regression. $\hat{\gamma}$ is the estimated gender pay gap, which is obtained by estimating Equation 1 using OLS. $\hat{\gamma}$ is the estimated unadjusted gender pay gap if gender is the only explanatory variable in the model, while it is estimated adjusted gender pay gap if other explanatory variables are included.

$$Y = X'\beta + \gamma G + \varepsilon \tag{1}$$

This is a so-called pooled model, where one equation is estimated for both men and women. The main disadvantage of estimating a pooled model is that it is not possible to analyse the influence of explanatory variables on wages and gap. The alternative way is to estimate separate equations by gender, where in the following equations m stands for male, f for female:

$$Y_m = X_m^{'}\beta_m + \varepsilon_m \tag{2}$$

[5] Previous research on Serbia has used the Heckman selection approach (e.g., Avlijaš et al. 2013). The dependent variable for the selection equation was binary, taking the value of 1 for working and 0 for not working.

$$Y_f = X_f^{'}\beta_f + \varepsilon_f \tag{3}$$

Denote $E(Y_m)$ and $E(Y_f)$ as the expected values of males' (Y_m) and females' (Y_f) wages, respectively. Assuming the expected value of the error term is 0, the expected values of males' and females' wages are as follows:

$$E(Y_m) = E(X_m)^{'}\beta_m \tag{4}$$

$$E(Y_f) = E(X_f)^{'}\beta_f \tag{5}$$

Unadjusted gender pay gap (R) is defined as the difference in expected males' and females' wages.

$$R = E(Y_m) - E(Y_f) = E(X_m)^{'}\beta_m - E(X_f)^{'}\beta_f \tag{6}$$

Oaxaca-Blinder twofold and threefold decomposition are the most common techniques for decomposing the gender pay gap (Oaxaca 1973 and Blinder 1973). Oaxaca (1973) investigates gender wage differences in the absence of discrimination. He assumes that the distribution of wages for females is the same as for males, and vice versa. The gender pay gap can be estimated as follows:

$$\hat{R} = \Delta\overline{X}^{'}\hat{\beta}_f - \overline{X}_m^{'}\Delta\hat{\beta} \tag{7}$$

$$\hat{R} = \Delta\overline{X}^{'}\hat{\beta}_m - \overline{X}_f^{'}\Delta\hat{\beta} \tag{8}$$

The female wage distribution is used for males in Equation 7 and the male wage distribution is used for females in Equation 8. The first part of both equations is gender wage differences due to difference in characteristics, and the second part of both equations is due to difference in coefficients (i.e., discrimination). The difference in characteristics is weighted by female coefficients in Equation 7 and male coefficients in Equation 8. The difference in coefficients is weighted by mean values of observables for males in Equation 7 and for females in Equation 8. Twofold decomposition can be defined as follows:

$$R = \left[E\left(X_m\right) - E\left(X_f\right) \right]' \beta^* + \left[E\left(X_m\right)' \left(\beta_m - \beta^*\right) + E\left(X_f\right)' \left(\beta^* - \beta_f\right) \right] \quad (9)$$

$$Q = \left[E\left(X_m\right) - E\left(X_f\right) \right]' \beta^* \quad (10)$$

$$U = \left[E\left(X_m\right)' \left(\beta_m - \beta^*\right) + E\left(X_f\right)' \left(\beta^* - \beta_f\right) \right] \quad (11)$$

$$R = Q + U \quad (12)$$

β^* is a non-discrimination vector. Q is the part of the gender difference in average wages that is explained by individual characteristics, e.g., education, work experience, occupation, sector of economic activity, etc. U is the unexplained part, which is mostly interpreted as discrimination, but it is important to note that it also includes all the unobservable characteristics. Jann (2008) suggests that β^* is the estimated coefficient from the pooled model with a gender dummy included as the explanatory variable.[6]

Selection into the labour force might not be random; therefore, the unobservables that determine the observed wage are not independent from the decision of whether or not to work. Estimating the wage equation without taking into account selection effects may give biased results. This is well documented both theoretically and empirically in Heckman's pioneering work (Heckman 1979).

The Heckman selection procedure is mostly used to take into account selection effects into employment vs. non-employment. In this paper we go one step further, and instead of dealing with the decision of whether or not to work we take into account that the employed are nonrandomly selected into two different employment types, employees and the self-employed. The dependent variable for the selection equation in the Heckman model is binary and the selection equation is estimated by probit or logit. Since we want to estimate the gender pay gap for employees taking into account different employment types, the dependent variable in the selection equation has three labour market statuses: employee, self-employed, and non-employed (unemployed and inactive). The selection equation

[6] For a literature review on the non-discriminatory vector, see Jann (2008).

is estimated by multinomial probit using Bourguignon et al.'s (2007) methodology. Bourguignon et al. (2007) compare three different models to estimate selection effects: Lee (1983), Dubin & Mcfadden (1984), and Dahl (2002). They use Monte Carlo simulation to investigate the characteristics of models when assumptions do not hold. The three methods differ in the constraints imposed. The constraints relate to linearity and the covariation matrix of errors of the outcome and selection equations. Bourguignon et al. (2007) suggest a modification of the Dubin-Mcfadden method. They drop the constraint that the sum of the correlation coefficients of the equations' error terms is equal to 0 and assume that the error terms are normally distributed. They show that this modification preforms better than Lee and Dahl's method, and also better than the original Dubin-Mcfadden method. We present the Bourguignon et al. (2007) method below. They consider the following model:

$$y_1 = x\beta_1 + u_1 \tag{13}$$

$$y_j^* = z\gamma_j + \eta_j,\ j = 1, 2, 3 \tag{14}$$

where y_1 and y_j^* are outcome and selection equations, respectively, with the corresponding error terms u_1 and η_j. Assuming that $E(u_1 \mid x,z) = 0$ and $Var(u_1 \mid x,z) = \sigma^2$, η_j are independent and identically distributed with Gumbel distribution, u_1 is not parametrically defined. Vector *z* is a vector of explanatory variables for all alternatives in the selection equation. Vector x is a vector of determinants of the outcome equation. The authors assume that the model is non-parametrically identified by exclusion of some of the variables in z from the variables in x.[7] Vectors of coefficients in the outcome and selection equations are denoted as β_1 and γ_j, respectively. The outcome equation is the wage equation, whereas the dependent variable for the selection equation in our case is labour market status defined as employee, self-employed, and unemployed/inactive.[8] The outcome variable is observed if and only if category 1 is chosen, without loss

[7] In the forthcoming equations everything is implicitly conditional on x and z, which is omitted for notational simplicity.

[8] In general, the economic agent chooses between a finite number of alternatives based on utilities y_j^*.

of generality, which happens when $y_1^* > max_{j \neq 1}\left(y_j^*\right)$. Γ and ε_1 are defined as follows:

$$\Gamma = \left\{z\gamma_1, z\gamma_2, z\gamma_3\right\} \tag{15}$$

$$\varepsilon_1 = max_{j \neq 1}\left(y_j^* - y_1^*\right) \tag{16}$$

Biased correction can be based on the conditional mean of u_1, as in the Heckman model. The conditional mean of u_1 is a function of Γ, $E\left(u_1 \mid \varepsilon_1 < 0, \Gamma\right) = \lambda\left(\Gamma\right)$. The selectivity corrected outcome equation is:

$$y_1 = x_1\beta_1 + \lambda\left(\Gamma\right) + w_1 \tag{17}$$

Consistent estimation of β_1 is based on Equation 17, whereas w_1 is a residual that is mean independent. Bourguignon et al.'s (2007) methodology is implemented in STATA as the *selmlog* command.

We estimate the gender pay gap for employees with and without selection effects. The adjusted gender pay gap with selection is the gender coefficient in the wage equation estimated according to Bourguignon et al. (2007).

4. DATA

We use 2014 and 2015 data from the Survey of Income and Living Conditions (SILC), which the Statistical Office of the Republic of Serbia conducted in Serbia for the first time in 2013, based on EU-SILC methodology. The SILC contains data on wages, labour market status, and individual and household characteristics. It was conducted on a representative sample of 6,055 households/19,094 individuals in 2014 and 5,680 households/15,520 individuals in 2015. The data is representative at the national level and is expressed by the degree of urbanisation and region.

Our sample for wages consists of employees aged 18–64. The sample for selection consists of individuals aged 18–64 excluding students, pensioners, women with infants, disabled persons, unpaid family members, agriculture workers (defined

as persons having income from agriculture activity),[9] and the self-employed with employees.[10]

The dependent variable in this analysis is net hourly wage. The wage measure is based on employees' monthly wages and salaries under different types of contract, vacation and overtime pay, profit sharing, bonuses and productivity premia, and allowances paid for transport or for work done in remote locations, but excludes income taxes and social security conditions.[11] The hourly wage is obtained by dividing the monthly wage by the usual number of hours worked in the reference month.

As explanatory variables of hourly wages we use a large set of individual and job characteristics, including gender, work experience and work experience squared, education (primary or less, secondary, tertiary), occupation (1. managers; 2. professionals and armed forces; 3. technicians and associate professionals; 4. clerical support workers; 5. service and sales workers; 6. skilled agriculture, forestry, and fishery workers; 7. craft and related trades workers; 8. plant and machine operators and assemblers; 9. elementary occupations), type of contract (labour contract, other contract types, without contract),[12] type of employment (part-time/full-time),[13] sector of economic activity (agriculture is sector A, industry is sectors B–F, and services are sectors G–U, NACE Rev 2. classification), size of the firm in which the individual is employed defined by the number of

[9] Exclusion of these categories of workers is a standard practice, since their labour supply is inelastic.

[10] The self-employed with employees are excluded since their wage determination differs significantly from that of employees. This research is part of the broader research analysing the gender pay gap for the employed and self-employed. We decided to focus only on the employed and to present the results for the self-employed in another paper. Although we do not analyse the gender pay gap for the self-employed, we decided to keep selection into self-employment as one of the three labour market statuses in the selection equation.

[11] There is no wage variable in the SILC that excludes the mentioned items. We use the PY010N SILC variable, i.e., employee cash or near-cash income.

[12] Labour contract includes permanent and temporary labour contracts, other contract types consisting of contracts for performing temporary and periodical jobs, copyright contracts, contracts for the supply of services, and other non-specified contract types. Employees without any contract are informally employed.

[13] We use the OECD definition for working part time: part-time employees are those whose main job is less than 30 hours per week. https://data.oecd.org/emp/part-time-employment-rate.htm

employees (1–10, 11–19, 20–49, and 50+ employees), firm ownership sector (private, public, other[14]), degree of residential urbanisation (dense, intermediate, thinly-populated), and region (Belgrade, Vojvodina, Šumadija and West Serbia, South and East Serbia). Mean values for these employee labour market characteristics are presented in the Appendix (Table A1). Employed women on average have higher educational attainment and work in more senior jobs than men (e.g., professionals, technicians and associate professionals, clerical support workers), but not in the most senior jobs (i.e., managerial occupations). Women have around 2 years less working experience than men. Women work more frequently in the services sector than in industry or agriculture compared to men. Women are less likely to work without a contract than men. The share of women employed in the Belgrade region and in urban areas is higher than that of men.

Table A2 in the Appendix presents the mean values of the explanatory variables in the selection equations. The variables that we assume influence employment probability but do not directly influence employee wages are the number of children (aged 1–7 and 8–18), the dependency ratio (ratio of the number of dependents to the number of working-age household members), being the household head, the amount of pensions per adult equivalent in a household (in 000 RSD), marital status, age, and age squared.

The average log hourly wages by different labour market characteristics are presented in Table A3 in the Appendix. The results are as expected. Wages increase with the level of education. Managers have the highest average wage among all occupations. Wages are higher in the public than in the private sector and increase with firm size. On average wages are highest in the service sector and lowest in agriculture. According to the type of employment and contract, part-time workers and those with labour contracts have the highest average wage. On average, wages are highest in the Belgrade region and in densely populated areas.

5. RESULTS

The Oaxaca-Blinder technique with twofold decomposition (Table 2) is used to decompose the gender pay gap; detailed decomposition is presented in the Appendix Table A6. The gender pay gap taking into account selection effects is

[14] Other ownership types are mixed ownership, socially owned enterprises, cooperatives, etc.

presented in Table 3 and the estimated selection equation is presented in the Appendix Table A7.

Table A4 presents the estimated log hourly wage equation with gender as the only explanatory variable, while Table A5 presents the estimated log hourly wage equation with the following explanatory variables: gender, education, work experience, occupation, region, degree of residential urbanisation, sector of economic activity, firm size, firm ownership type, contract type, and working part-time. The unadjusted gender pay gap amounted to 3.5% in 2014 and 5.7% in 2015 and was statistically significant at the 10% significance level in 2014. Taking into account individual and job characteristics, the adjusted gender pay gap amounted to 10.5% in 2014 and 12.5% in 2015.

Results for the log hourly wage equation are as expected (Table A5) and in line with the descriptive analysis (Table A3 in the Appendix). The hourly wage increases with education level and with work experience, but at a decreasing rate. There is no statistically significant difference between the hourly wages of managers and professionals in 2015, whereas managers do earn statistically significantly more than professionals (and the armed forces) in 2014. Wages in all other occupations are lower than those of professionals (and the armed forces) in both years. Wages are higher in Belgrade and densely populated areas than in other Serbian regions and intermediate and thinly populated areas. The difference between densely and intermediate populated areas is only significant in 2015. Wages increase with firm size. On average, wages are higher in the public than in the private sector in both years, whereas other ownership types have lower wages than the private sector in 2015. There is no statistically significant difference between average wages for different contract types (labour contracts or other contracts), whereas wages are lower for informal workers (i.e., those without contracts) than for workers with labour contracts. Wages are higher for part-time than for full-time jobs on average, but only around 2% of employees work part-time. This result is unusual, since the part-time wage rate is usually lower than the full-time wage rate. A possible explanation for this result is the small sample size of part-time workers. In addition, using usual hours of work – which are all that is available in SILC data – to calculate the hourly wage rate instead of actual hours of work may overestimate the part-time work.

Table 2 presents the results of the Oaxaca-Blinder decomposition. The explained part of the gap is negative, amounting to –7.1% in 2014 and –6.7% in 2015. The negative explained part of the gender pay gap suggests that the characteristics of employed women, such as education level, are better than the characteristics of employed men. Taking into account labour market and individual characteristics, the adjusted gender pay gap (i.e., the unexplained part of the gap) is bigger than the unadjusted gender pay gap, amounting to 10.5% in 2014 and 12.5% in 2015. Our results show that women in Serbia earn less than men, even though they have better qualifications and work in better-paid occupations. The increase in adjusted gender pay gap between 2014 and 2015 is not statistically significant. Our results suggest that the adjusted gender pay gap in 2014 and 2015 was slightly lower than in 2013, when it amounted to 13.8% (Žarković-Rakić & Vladisavljević 2016).

The following variables have a statistically significant influence on the explained part of the gap in both years: education, occupation, region, degree of urbanisation, sector of economic activity, ownership type, and contract type. Also, firm size has a statistically significant influence on the explained part of the gap in 2014, and work experience in 2015. Working part-time does not have a statistically significant influence on the explained part.

The variables that reduce the explained part of the gap, i.e., that have negative coefficients, are: education, occupation, firm ownership sector, contract type, degree of urbanisation, and region. Women's education level is higher than men's and they are also more likely to work in better-paid occupations, which narrows the explained part of the gap. Women are more likely to work in the public sector and to hold jobs with a labour contract (instead of other contracts or without a contract), where the wages are higher (see Table A1 and Table A3 in the Appendix). The proportion of employed women is slightly higher in densely populated and intermediate populated areas, but significantly lower in thinly populated areas compared with the proportion of men, which narrows the explained part of the gap. Also, the proportion of employed women is higher than that of men in the Belgrade region, i.e., the region with the highest average wage. On the other hand, the proportion of employed women is lower than that of men in South and East Serbia, the region with the lowest average wage. Region narrows the explained component. The variables that increase the explained part of the

gap (i.e., positive coefficients) are: sector of economic activity, firm size, and work experience. The fact that employed women on average have less working experience increases the explained part of the gap in 2015. The two variables with the biggest influence on the explained part of the gap are occupation and education. Occupation explains 43.7% of the explained part of the gap in 2014 and 43.3% in 2015. Education explains 32.4% of explained part of the gap in 2014 and 37.3% in 2015.

Only a few variables have a statistically significant influence on the unexplained part of the gap in 2015, whereas none of the variables influence it in 2014. Occupation and firm ownership sector increase the unexplained part of the gap in 2015.[15] The unexplained part of the gender pay gap is mostly attributed to discrimination, but it is important to remember that it includes all the unobserved variables.

[15] Occupation and education are highly correlated variables. We did a robustness check without occupation. Excluding occupation, the estimated coefficient for education is higher in both the explained and unexplained parts of the gender pay gap compared with the baseline estimation. Education has a negative and statistically significant influence on the unexplained part of the gap when occupation is excluded, indicating that women are better paid than men with the same level of education.

Table 2: Oaxaca-Blinder decomposition, 2014 and 2015

	2014		2015	
Log male wage	5.199***	(0.013)	5.188***	(0.015)
Log female wage	5.164***	(0.015)	5.131***	(0.015)
Difference in log wages	0.035*	(0.020)	0.057***	(0.021)
Explained part	–0.071***	(0.015)	–0.067***	(0.015)
Unexplained part	0.105***	(0.016)	0.125***	(0.017)
Explained part decomposition				
Education	–0.023***	(0.005)	–0.025***	(0.005)
Work experience	0.002	(0.003)	0.005**	(0.002)
Occupation	–0.031***	(0.009)	–0.029***	(0.011)
Region	–0.008**	(0.004)	–0.006**	(0.003)
Degree of urbanisation	–0.006***	(0.002)	–0.007***	(0.002)
Sector of economic activity	0.008**	(0.003)	0.015***	(0.004)
Firm size	0.004**	(0.002)	0.002	(0.002)
Firm ownership sector	–0.010***	(0.003)	–0.018***	(0.004)
Contract type	–0.004**	(0.002)	–0.004**	(0.002)
Part-time/full-time	–0.002	(0.003)	–0.001	(0.002)
Unexplained part decomposition				
Education	–0.013	(0.012)	–0.013	(0.015)
Work experience	0.062	(0.039)	0.032	(0.044)
Occupation	–0.001	(0.025)	0.063**	(0.028)
Region	–0.000	(0.002)	0.001	(0.003)
Degree of urbanisation	–0.003	(0.003)	0.000	(0.004)
Sector of economic activity	0.042	(0.028)	0.034	(0.035)
Firm size	0.001	(0.004)	0.001	(0.004)
Firm ownership sector	0.022	(0.036)	0.109***	(0.026)
Contract type	0.035	(0.060)	0.036	(0.064)
Part-time/full-time	–0.006	(0.004)	0.001	(0.004)
Constant	–0.035	(0.085)	–0.139	(0.090)
N	3,576		3,476	

Notes: Negative values reduce the gender pay gap, whereas positive values increase it. Robust standard errors (S.E.). *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculation.

Table 3 presents the log hourly wage equation corrected for selection effects (Equation 17). The adjusted gender pay gap taking into account selection effects is estimated using the *selmlog* procedure. We will first summarise the main results for the selection equation presented in Appendix Table A7. Inactivity is the base category. Women have a lower probability than men of being both wage-employed and self-employed compared to inactive. The probability of being wage employed is higher for those with secondary and tertiary education than for those with primary education. The probability of being self-employed is higher for those with tertiary education than for those with primary education. The probability of being wage-employed and self-employed vs. inactive increases with age, but at a decreasing rate. Number of children (aged 1–7) does not influence the probability of being employed, but increases the probability of being self-employed vs. inactive in 2014.

The adjusted gender pay gap taking into account selection effects is actually the estimated coefficient for the gender variable in Equation 17. Selection variables are not significant in 2014; therefore the gender pay gap with and without selection is almost equal (10.0% with selection and 10.5% without selection). Selection into wage employment and inactivity is statistically significant in 2015. The adjusted gender pay gap is lower in 2015 when selection is considered (9.7% versus 12.5%, respectively). Therefore, selection explains part of the gender pay gap in 2015.

Table 3: Log hourly wage equation with selection effects, 2014 and 2015

	2014		2015	
Variable	Coefficient	S.E.	Coefficient	S.E.
Female	–0.100***	(0.025)	–0.097***	(0.026)
Education				
Secondary education	0.027	(0.042)	0.124**	(0.053)
Tertiary education	0.185***	(0.059)	0.236***	(0.071)
Work experience				
Work experience	0.011***	(0.003)	0.005	(0.003)
Work experience squared	–0.000*	(0.000)	–0.000	(0.000)
Occupation				
Managerial	0.112***	(0.043)	0.038	(0.045)
Technicians and associate professionals	–0.141***	(0.026)	–0.180***	(0.028)
Clerical support workers	–0.280***	(0.027)	–0.251***	(0.030)

Service and sales workers	–0.413***	(0.027)	–0.397***	(0.030)
Skilled agriculture, forestry, and fishery workers	–0.434***	(0.104)	–0.306*	(0.185)
Craft and related trades workers	–0.385***	(0.031)	–0.392***	(0.034)
Plant and machine operators, and assemblers	–0.305***	(0.032)	–0.343***	(0.033)
Elementary occupations	–0.490***	(0.033)	–0.471***	(0.033)
Region				
Vojvodina	–0.125***	(0.023)	–0.032	(0.022)
Šumadija and West Serbia	–0.182***	(0.023)	–0.101***	(0.025)
South and East Serbia	–0.201***	(0.023)	–0.167***	(0.025)
Degree of urbanisation				
Intermediate populated area	–0.014	(0.017)	–0.035**	(0.018)
Thinly populated area	–0.039*	(0.023)	–0.053**	(0.022)
Sector of economic activity				
Industry	0.040	(0.042)	0.095**	(0.045)
Services	0.003	(0.041)	–0.007	(0.045)
Firm size				
Number of employed 11–19	0.052***	(0.020)	0.073***	(0.019)
Number of employed 20–49	0.082***	(0.021)	0.041*	(0.022)
Number of employed 50+	0.098***	(0.018)	0.090***	(0.020)
Firm ownership sector				
Public ownership	0.146***	(0.016)	0.168***	(0.017)
Other ownership	0.083*	(0.047)	–0.059	(0.045)
Contract type				
Other contract types	–0.095**	(0.047)	–0.086*	(0.049)
Without contract	–0.178***	(0.035)	–0.175***	(0.040)
Part-time/Full-time	0.523***	(0.056)	0.510***	(0.053)
Selection effects				
Selection into wage employment	–0.163	(0.128)	0.341**	(0.135)
Selection into self-employment	0.022	(0.281)	0.277	(0.300)
Selection into inactivity	0.054	(0.274)	0.953***	(0.278)
Constant	5.382***	(0.125)	5.468***	(0.136)
N	3,576		3,476	
Adjusted R2	0.429		0.375	

Notes: The base categories are as follows: primary education, professionals and armed forces, Belgrade region, densely populated area, agriculture, number of employed 1–10, private ownership type, labour contract. Robust standard errors (S.E.). *** p<0,01, ** p<0,05, * p<0,1.
Source: Authors' calculation

6. CONCLUSIONS

This paper analyses the gender pay gap in Serbia using SILC data for 2014 and 2015 and Oaxaca-Blinder decomposition methodology. The selection effect on the gender pay gap is estimated using the methodology proposed by Bourguignon et al. (2007).

Our findings suggest that discrimination is the key reason for the gender pay gap, along with some other unobservable factors. If women and men had the same characteristics the gap would have been 10.5% in 2014 and 12.5% in 2015. However, women on average have better characteristics than men in respect of factors such as education and occupation, and these female advantages reduced the actual gender pay gap to 3.5% in 2014 and 5.7% in 2015. We find that selection into wage employment, self-employment, and inactivity had no impact on the gender pay gap in 2014, but reduced it by 2.8 percentage points in 2015. Hence, we conclude that selection into wage employment and self-employment versus inactivity explains part of the gender pay gap in 2015.

These findings demonstrate that the gender pay gap continues to be relatively large and persistent in Serbia. The National Strategy for Gender Equality recognises that although discrimination is prohibited by law, gender discrimination persists and implementation of the law is inadequate. We believe that policymakers should continuously monitor the gender pay gap. The gap is persistent due to the discrimination effect. A new National Strategy for Gender Equality should be prepared, since the last strategy is due to end in 2020.

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APPENDIX

Table A1: Mean values of explanatory variables for wage equation, by gender, 2014 and 2015

	2014		2015	
Variable	Female	Male	Female	Male
Education				
Primary	0.081	0.105	0.067	0.100
Secondary	0.566	0.633	0.567	0.647
Tertiary	0.353	0.262	0.367	0.252
Work experience (in years)				
Work experience	16.3	17.6	16.1	17.8
Work experience squared	363.3	424.8	364.8	436.4
Occupation				
Managerial	0.020	0.035	0.016	0.038
Professionals and armed forces	0.206	0.133	0.200	0.128
Technicians and associate professionals	0.162	0.099	0.161	0.103
Clerical support workers	0.171	0.076	0.165	0.070
Service and sales workers	0.207	0.178	0.201	0.157
Skilled agriculture, forestry, and fishery workers	0.004	0.005	0.000	0.003
Craft and related trades workers	0.075	0.209	0.074	0.198
Plant and machine operators, and assemblers	0.032	0.181	0.031	0.207
Elementary occupations	0.122	0.084	0.152	0.097
Region				
Belgrade	0.215	0.176	0.218	0.186
Vojvodina	0.286	0.302	0.270	0.275
Šumadija and West Serbia	0.302	0.296	0.297	0.310
South and East Serbia	0.197	0.227	0.214	0.229

Degree of urbanisation				
Densely populated area	0.413	0.348	0.395	0.339
Intermediate populated area	0.322	0.303	0.316	0.289
Thinly populated area	0.265	0.349	0.289	0.372
Sector of economic activity				
Agriculture	0.025	0.034	0.015	0.038
Industry	0.230	0.392	0.245	0.404
Services	0.746	0.573	0.740	0.558
Firm size (number of employees)				
1–10	0.302	0.261	0.337	0.308
11–19	0.188	0.203	0.221	0.264
20–49	0.164	0.156	0.176	0.159
50+	0.346	0.380	0.266	0.269
Firm ownership				
Private ownership	0.486	0.552	0.499	0.567
Public ownership	0.501	0.422	0.485	0.401
Other ownership	0.013	0.026	0.016	0.032
Contract type				
Labour contract	0.951	0.930	0.954	0.941
Other contract types	0.015	0.023	0.021	0.020
Without contract	0.034	0.047	0.026	0.040
Part-time	0.015	0.013	0.021	0.015

Source: Authors' calculation

Table A2: Mean values for explanatory variables for selection equation, by gender, 2014 and 2015

	2014		2015	
Variable	Female	Male	Female	Male
Education				
Primary	0.236	0.181	0.234	0.193
Secondary	0.540	0.631	0.548	0.624
Tertiary	0.224	0.187	0.218	0.184
Age	41.9	41.2	42.2	41.5
Age squared	1,896	1,854	1,919	1,879
Marital status	0.716	0.628	0.731	0.635
Number of children aged 1–7	0.221	0.240	0.217	0.226
Number of children aged 8–18	0.430	0.348	0.429	0.347
Dependency ratio	0.477	0.453	0.483	0.451
Household head	0.271	0.297	0.277	0.293
Pensions per adult equivalent in 000 RSD	4.937	4.706	4.872	4.721
Degree of urbanisation				
Densely populated area	0.327	0.313	0.299	0.295
Intermediate populated area	0.295	0.294	0.276	0.273
Thinly populated area	0.379	0.392	0.425	0.431
Region				
Belgrade	0.178	0.162	0.160	0.154
Vojvodina	0.291	0.299	0.275	0.278
Šumadija and West Serbia	0.313	0.297	0.329	0.324
South and East Serbia	0.218	0.242	0.237	0.244

Source: Authors' calculation

Table A3: Average log hourly wages for females and males, by employee characteristics, 2014 and 2015

	2014		2015	
	Female	Male	Female	Male
Total	5.164	5.199	5.131	5.188
Education				
Primary	4.691	4.905	4.755	4.898
Secondary	4.968	5.086	4.944	5.080
Tertiary	5.526	5.544	5.423	5.513
Occupation				
Managerial	5.971	5.714	6.032	5.648
Professionals and armed forces	5.625	5.670	5.554	5.649
Technicians and associate professionals	5.329	5.376	5.246	5.361
Clerical support workers	5.181	5.156	5.136	5.203
Service and sales workers	4.808	4.990	4.843	4.992
Skilled agriculture, forestry, and fishery workers	4.842	5.058	–	5.116
Craft and related trades workers	4.755	5.056	4.821	5.049
Plant and machine operators, and assemblers	4.953	5.097	4.946	5.042
Elementary occupations	4.779	4.920	4.802	4.917
Region				
Belgrade	5.383	5.368	5.259	5.318
Vojvodina	5.112	5.155	5.143	5.166
Šumadija and West Serbia	5.055	5.120	5.041	5.155
South and East Serbia	5.031	5.144	4.994	5.075
Degree of urbanisation				
Densely populated area	5.318	5.338	5.251	5.325
Intermediate populated area	5.069	5.188	5.081	5.164
Thinly populated area	4.955	5.024	4.937	5.033
Sector of economic activity				
Agriculture	4.941	5.007	5.116	4.931

Industry	5.017	5.138	5.014	5.151
Services	5.213	5.246	5.166	5.227
Firm size (number of employees)				
1–10	4.963	5.075	4.984	5.051
11–19	5.168	5.175	5.150	5.166
20–49	5.235	5.174	5.200	5.223
50+	5.306	5.306	5.255	5.350
Firm ownership				
Private ownership	4.970	5.048	4.950	5.045
Public ownership	5.348	5.388	5.309	5.405
Other ownership	5.270	5.264	5.170	4.989
Contract type				
Labour contract	5.185	5.223	5.144	5.210
Other contract types	5.010	5.089	5.008	4.985
Without contract	4.611	4.763	4.637	4.770
Part-time/Full-time				
Full-time	5.150	5.194	5.122	5.180
Part-time	5.975	5.520	5.579	5.686

Source: Authors' calculation

Table A4: Log hourly wage equation, explanatory variable gender, 2014 and 2015

	2014		2015	
Variable	Coefficient	S.E.	Coefficient	S.E.
Female	**–0.035***	(0.020)	**–0.057*****	(0.021)
Constant	5.199***	(0.013)	5.184***	(0.015)
N	3,576		3,506	
R2	0.001		0.003	

Notes: Robust standard errors (S.E.). *** p<0,01, ** p<0,05, * p<0,1.

Source: Authors' calculation

Table A5: Log hourly wage equation, all explanatory variables, 2014 and 2015

	2014		2015	
Variable	Coefficient	S.E.	Coefficient	S.E.
Female	–0.105***	(0.016)	–0.125***	(0.018)
Educational level				
Secondary education	0.114***	(0.024)	0.084***	(0.031)
Tertiary education	0.312***	(0.031)	0.260***	(0.036)
Work experience				
Work experience	0.016***	(0.003)	0.012***	(0.003)
Work experience squared	–0.000***	(0.000)	–0.000***	(0.000)
Occupational level				
Managerial	0.159**	(0.079)	0.149	(0.103)
Technicians and associate professionals	–0.151***	(0.030)	–0.190***	(0.031)
Clerical support workers	–0.293***	(0.028)	–0.264***	(0.030)
Service and sales workers	–0.444***	(0.030)	–0.400***	(0.034)
Skilled agriculture, forestry, and fishery workers	–0.429***	(0.101)	–0.275*	(0.152)
Craft and related trades workers	–0.401***	(0.034)	–0.389***	(0.038)
Plant and machine operators, and assemblers	–0.324***	(0.035)	–0.372***	(0.039)
Elementary occupations	–0.499***	(0.034)	–0.489***	(0.035)
Region				
Vojvodina	–0.137***	(0.023)	–0.041*	(0.024)
Šumadija and West Serbia	–0.209***	(0.022)	–0.119***	(0.023)
South and East Serbia	–0.219***	(0.023)	–0.194***	(0.025)
Degree of urbanisation				
Intermediate populated area	–0.027	(0.017)	–0.060***	(0.019)
Thinly populated area	–0.075***	(0.018)	–0.079***	(0.021)
Sector of economic activity				
Industry	0.059	(0.047)	0.088	(0.056)
Services	0.008	(0.046)	–0.012	(0.056)
Firm size				
Number of employed 11–19	0.042*	(0.022)	0.060***	(0.022)
Number of employed 20–49	0.064**	(0.025)	0.046*	(0.026)

Number of employed 50+	0.089***	(0.021)	0.110***	(0.025)
Firm ownership sector				
Public ownership	0.138***	(0.019)	0.164***	(0.024)
Other ownership	0.069	(0.058)	–0.132**	(0.053)
Contract type				
Other contract types	–0.085	(0.074)	–0.071	(0.081)
Without contract	–0.201***	(0.050)	–0.191***	(0.064)
Part-time/full-time	0.590***	(0.139)	0.475***	(0.104)
Constant	5.211***	(0.064)	5.209***	(0.074)
N	3,576		3,476	
Adjusted R2	0.466		0.400	

Notes: The base categories are as follows: primary education, professionals and armed forces, Belgrade region, densely populated area, agriculture, number of employed 1–10, private ownership type, labour contract. Robust standard errors (S.E.). *** p<0,01, ** p<0,05, * p<0,1.
Source: Authors' calculation

Table A6: Oaxaca–Blinder detailed decomposition, 2014 and 2015

	2014		2015	
Log male wage	5.199***	(0.013)	5.188***	(0.015)
Log female wage	5.164***	(0.015)	5.131***	(0.015)
Difference in log wages	0.035*	(0.020)	0.057***	(0.021)
Explained part	–0.071***	(0.015)	–0.067***	(0.015)
Unexplained part	0.105***	(0.016)	0.125***	(0.017)
Explained part				
Education				
Primary	–0.003**	(0.002)	–0.004***	(0.001)
Secondary	–0.002**	(0.001)	–0.003**	(0.001)
Tertiary	–0.018***	(0.003)	–0.018***	(0.004)
Work experience				
Work experience	0.021***	(0.007)	0.023***	(0.007)
Work experience squared	–0.019***	(0.006)	–0.017***	(0.007)
Occupation				
Senior officials and managers	0.005*	(0.003)	0.010***	(0.004)
Professionals and armed forces	–0.020***	(0.004)	–0.018***	(0.005)
Technicians and associate professionals	–0.006***	(0.002)	–0.003*	(0.002)

Clercal support workers	0.003	(0.002)	0.001	(0.003)
Service and sales workers	0.005*	(0.003)	0.008***	(0.003)
Skilled agricultural, forestry, and fishery workers	–0.000	(0.000)	–0.000	(0.000)
Craft and related trades workers	–0.017***	(0.003)	–0.017***	(0.004)
Plant and machine operators, and assemblers	–0.009**	(0.004)	–0.020***	(0.005)
Elementary occupations	0.008***	(0.003)	0.009***	(0.003)
Region				
Belgrade	–0.006**	(0.003)	–0.004**	(0.002)
Vojvodina	0.000	(0.000)	0.001	(0.001)
Šumadija and West Serbia	0.000	(0.001)	–0.001	(0.001)
South and East Serbia	–0.002*	(0.001)	–0.002	(0.002)
Degree of urbanisation				
Densily populated area	–0.003***	(0.001)	–0.004***	(0.001)
Intermediate populated area	0.000	(0.000)	0.000	(0.000)
Thinly populated area	–0.003***	(0.001)	–0.003**	(0.001)
Sector of economic activity				
Agriculture	–0.000	(0.000)	–0.001	(0.001)
Industry	0.006*	(0.003)	0.009***	(0.003)
Services	0.002	(0.003)	0.006*	(0.004)
Firm size (number of employees)				
1–10	0.002*	(0.001)	0.001	(0.001)
11–19	–0.000	(0.000)	0.000	(0.000)
20–49	–0.000	(0.000)	0.000	(0.000)
50+	0.002**	(0.001)	0.000	(0.001)
Firm ownership				
Private ownership	–0.004**	(0.002)	–0.001	(0.002)
Public ownership	–0.005**	(0.002)	–0.014***	(0.004)
Other ownership	0.000	(0.000)	–0.002**	(0.001)
Contract type				
Labour contract	–0.003**	(0.001)	–0.002*	(0.001)
Other contracts	0.000	(0.001)	–0.000	(0.000)
Without contract	–0.001	(0.001)	–0.002*	(0.001)
Part-time	–0.002	(0.003)	–0.001	(0.002)

Unexplained part				
Education				
Primary	0.004	(0.003)	0.003	(0.003)
Secondary	–0.005	(0.012)	–0.006	(0.014)
Tertiary	–0.011	(0.010)	–0.010	(0.012)
Work experience				
Work experience	0.172**	(0.086)	0.166*	(0.097)
Work experience squared	–0.110**	(0.051)	–0.134**	(0.058)
Occupation				
Senior officials and managers	–0.009**	(0.004)	–0.008	(0.006)
Professionals and armed forces	–0.001	(0.010)	0.013	(0.010)
Technicians and associate professionals	–0.007	(0.007)	0.010	(0.008)
Clercal support workers	–0.007	(0.005)	0.010	(0.006)
Service and sales workers	0.002	(0.009)	0.011	(0.011)
Skilled agricultural, forestry and fishery workers	0.001	(0.001)	0.000	(0.000)
Craft and related trades workers	0.013**	(0.006)	0.013**	(0.005)
Plant and machine operators, and assemblers	0.001	(0.004)	0.003	(0.003)
Elementary occupations	0.006	(0.005)	0.011*	(0.006)
Region				
Belgrade	–0.003	(0.008)	0.006	(0.009)
Vojvodina	–0.001	(0.006)	–0.007	(0.007)
Šumadija and West Serbia	0.003	(0.006)	0.004	(0.006)
South and East Serbia	0.000	(0.005)	–0.002	(0.005)
Degree of urbanisation				
Densily populated area	–0.008	(0.009)	0.001	(0.010)
Intermediate populated area	0.010*	(0.006)	0.002	(0.006)
Thinly populated area	–0.004	(0.005)	–0.002	(0.006)
Sector of economic activity				
Agriculture	–0.003*	(0.002)	–0.001	(0.001)
Industry	0.019*	(0.010)	0.015	(0.012)
Services	0.026	(0.025)	0.021	(0.030)
Firm size (number of employees)				

1–10	0.015*	(0.008)	0.006	(0.009)
11–19	0.005	(0.005)	–0.006	(0.007)
20–49	–0.008	(0.005)	0.002	(0.006)
50+	–0.011	(0.008)	–0.002	(0.008)
Ownership type				
Private ownership	–0.009	(0.022)	0.035*	(0.019)
Public ownership	0.032	(0.020)	0.077***	(0.017)
Other ownership	–0.001	(0.001)	–0.004***	(0.001)
Contract type				
Labour contract	0.035	(0.060)	0.036	(0.065)
Other contracts	–0.001	(0.002)	–0.001	(0.002)
Without contract	0.001	(0.003)	0.001	(0.003)
Part-time	–0.006	(0.004)	0.001	(0.004)
Constant	–0.035	(0.085)	–0.139	(0.090)
N	3,576		3,476	

Notes: Negative values reduce the gender pay gap, whereas positive values increase it. Robust standard errors (S.E.). *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculation.

Table A7: Selection equation, *selmlog* procedure, 2014 and 2015

	2014		2015	
	Coefficient	S.E.	Coefficient	S.E.
Selection into wage employment				
Female	–0.439***	(0.050)	–0.400***	(0.050)
Education				
Secondary education	1.134***	(0.070)	1.212***	(0.071)
Tertiary education	2.025***	(0.087)	2.054***	(0.088)
Age				
Age	0.237***	(0.017)	0.225***	(0.017)
Age squared	–0.003***	(0.000)	–0.003***	(0.000)
Married	0.241***	(0.068)	0.277***	(0.069)
Number of children				
Number of children aged 1–7	0.026	(0.057)	–0.033	(0.059)
Number of children aged 8–18	–0.009	(0.047)	–0.013	(0.047)
Dependency ratio	–0.121*	(0.065)	–0.039	(0.064)
Household head	–0.023	(0.055)	–0.002	(0.055)

Pensions per adult equivalent, in RSD	–0.004	(0.003)	–0.003	(0.004)
Degree of urbanisation				
Intermediate populated area	–0.007	(0.065)	0.004	(0.066)
Thinly populated area	–0.197***	(0.063)	–0.239***	(0.062)
Region				
Vojvodina	–0.044	(0.077)	–0.154*	(0.080)
Šumadija and West Serbia	–0.097	(0.076)	–0.368***	(0.077)
South and East Serbia	–0.322***	(0.080)	–0.379***	(0.081)
Constant	–5.190***	(0.333)	–5.002***	(0.335)
Selection into self-employment				
Female	–1.167***	(0.102)	–1.301***	(0.112)
Education				
Secondary education	0.174	(0.110)	–0.025	(0.116)
Tertiary education	0.532***	(0.156)	0.352**	(0.168)
Age				
Age	0.181***	(0.034)	0.195***	(0.037)
Age squared	–0.002***	(0.000)	–0.002***	(0.000)
Married	0.010	(0.128)	0.254*	(0.144)
Number of children				
Number of children aged 1–7	0.265**	(0.105)	–0.137	(0.133)
Number of children aged 8–18	0.105	(0.084)	0.109	(0.088)
Dependency ratio	–0.079	(0.114)	–0.017	(0.122)
Household head	0.103	(0.103)	–0.085	(0.114)
Pensions per adult equivalent, in RSD	0.006	(0.005)	0.015**	(0.006)
Degree of urbanisation				
Intermediate populated area	0.094	(0.137)	0.117	(0.149)
Thinly populated area	0.466***	(0.123)	0.291**	(0.133)
Region				
Vojvodina	0.558***	(0.172)	0.146	(0.183)
Šumadija and West Serbia	0.548***	(0.170)	0.219	(0.175)
South and East Serbia	0.074	(0.182)	–0.019	(0.186)
Constant	–6.740***	(0.703)	–6.644***	(0.771)
N	8,308		8,200	
Pseudo R2	0.097		0.101	

Notes: The reference categories are: primary education, Belgrade region, densely populated area, inactivity. Robust standard errors (S.E). *** p<0,01, ** p<0,05, * p<0,1.

Source: Authors' calculation.

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