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# It's a man's world? The rise of female entrepreneurship during privatization in Serbia

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## Abstract

The relationship between female empowerment and economic development is one of the most complex examples of reverse causality, yet multiple scholars acknowledge that female empowerment promotes economic progress. One of the crucial aspects of female empowerment is female entrepreneurship; however, the literature on the emergence of female entrepreneurship is scarce. We focus on the rise of female entrepreneurship in Serbia and collect an extensive biographical dataset of women, who took part in privatization. Although women enjoyed the same *de jure* rights as men, they faced a number of informal restrictions such as i) patriarchal values, limiting the role of women in the society and ii) occupations in low-wage sectors, making it difficult to accumulate capital. Analyzing the determinants of failures of the newly privatized firms during 2002–2019 we find a significant negative relationship between the risks of failure and the cases of own independent entrepreneurial success of women prior to privatization as well as the cases, in which only the entrepreneurial success of husbands of these women was registered. This relationship is robust to controlling for diverse characteristics of firms and to inclusion of ownership duration. We also find that the presence of influential husbands in the background was not significantly related to the subsequent change of ownership. Although the ownership change was registered for the majority of firms in our sample, we find that during the Serbian privatization women managed to build up on their own entrepreneurial success, which contributed to female empowerment. These findings can be relevant for understanding the aftermath of privatizations with respect to gender inequality in other transition countries.

**JEL classification:** J16, L26, D72, P26.

**Keywords:** entrepreneurship, female entrepreneurship, economics of gender, political economy, transition.

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# 1 Introduction

The interplay between female empowerment and economic development is one of the most complex examples of reverse causality. As in [Pampel and Tanaka \(1986\)](#) economic development drives increases in female labor force participation. [Gaddis and Klasen \(2014\)](#) critically assert the interaction between structural change in the economy and female labor participation, stating that the transition from an agrarian economy to a service-driven one may have substantial impact on female labor force participation, although the magnitude and the direction of this impact is still open to debate. [Bloom et al. \(2009\)](#) analyse the impact of institutional developments, such as introduction of abortion laws on female labor force participation through the fertility channel. Another block of literature suggests, that female empowerment may substantially contribute to economic growth and development, thus focusing on the different link in the causal chain. While [Diebolt and Perrin \(2013\)](#) state that gender equality contributed to demographic transition and triggered take-offs to modern economic growth and [Geddes et al. \(2012\)](#) argue that granting equal rights to women is associated with increasing accumulation of growth promoting human capital, [Duflo \(2012\)](#) notes that female empowerment and economic development mutually reinforce each other. Undoubtedly, gender equality and female empowerment play an important role in economic development. While in theory women's empowerment is a straightforward concept, few empirical proxies are available: gender inequality indices based on income and/or education; job segregation indices; distribution of political rights between men and women; female labor force participation and, surprisingly rare – female entrepreneurship rates. The research on entrepreneurship and economic development is scarce, yet a positive relationship between both through the channels associated with gender equality ([Duflo, 2012](#), pp. 1064–1075) is often noted.

How does female entrepreneurship emerge and which risks does it face in developing countries? In our paper we take a look at the emergence of female entrepreneurship during and after privatization in Serbia between 2002 and 2019. We consider this setting as ideal for the given research question due to the following reasons: i) Serbian economy experienced a rough transition from a planned economy to a market one; ii) women in Serbia have *de jure* same rights as men, yet *de facto* are less economically active due to numerous cultural reasons; iii) the privatization process and outcomes are well documented and background information on new and subsequent owners is available. These factors make Serbian privatization attractive for an empirical study, turning it into an example of the emergence of female entrepreneurship in a transition country.

The data on Serbian privatization allows us to overcome the '*survivorship bias*' and include the firms which successfully underwent privatization and those firms which failed. Thus, our analysis is not subject to the the '*survivorship bias*', the phenomenon of a measurement error, a well-known bias in finance ([Elton et al., 1996](#)). Instead of analysing the profits and financial ratios of the firms, which *survived*, our dependent variable measures the existence of the firm *per se*. This allows us to cover more cases and infer about

the causes of failure. Measuring failure has another advantage: failure rates, such as bankruptcy, are less subject to measurement error, comparing to proxies for success. We hereby formulate our research questions more precisely with respect to analysing the risks of failure of the newly privatized firms: i) was own prior success of a new female owner decisive or was it more the success of their male partners or parents? ii) was female participation in the privatization only a facade for the activities of their male partners?

To our knowledge our study is the first one, in which the emergence of female entrepreneurship during privatization is analyzed in the context of transition from a socialistic planned economy to a market one. In addition, the questions we analyse are novel to the literature of female entrepreneurship, since we distinguish between the sources of prior success. In order to address these questions we organize our paper as follows: Section 2 focuses on the formal and informal context of female entrepreneurship in Serbia; Section 3 presents the dataset; Section 4 contains empirical analysis of the determinants of failure using logistic regressions and Section 5 contains critical assertion and discussion of the results.

## 2 Privatization in Serbia – equal chances for men and women?

Late transition and economic instability paired with devastating effects of regional armed conflicts and international sanctions during 1990s limited the possibilities for development of entrepreneurship. Serbia experienced one of the worst hyperinflation episodes in history, GDP plummeted and unemployment increased. Communist legacy, although it was the case of soft communism based on central planing and hybrid type market mechanisms, together with imbalances created during 1990s, contributed to the fact that in the middle of 2000s private sector constituted only 40% of the GDP (Uvalić, 2018). It was not only the scarcity of physical capital, but also the lack of formal institutions, that hindered entrepreneurial activities. These initial conditions were already a low start and the inconsistency and the low speed of reforms represented an additional burden (Estrin et al., 2006). Transition was generally characterised by decline in access to assets, property and political representation (Hughes and Slay, 2007), and in Serbia a slow and ineffective transition even further limited the opportunities for both, men and women as entrepreneurs. The most substantial burden inherited from the communist times, was the non-existence or severe restriction of entrepreneurship and the legal concept of private property and private capital in general (Kucherov, 1962). The development of formal institutions was not only sluggish, but also associated with the emergence of gaps and loopholes in the legislation (Ivanović, 2015), which jeopardized privatization. Although the main waves of privatization took place during 2002–2008, the legislative framework wasn't mature enough to confront issues to asset-stripping and rent-seeking (Ivanović et al., 2019).

Did the formal legislative framework of privatization favor women? Serbia was a latecomer in reforms, and started democratisation and transformation towards market economy in early 2000s. The idea of privatisation in Serbia was perceived as the main pillar

of restructuring the economy. It was expected to set up appropriate incentives by moving the property rights from inefficient state to private hands. The fact that privatisation followed with a delay compared to other transition economies, gave hope that the majority of mistakes and inefficiencies accrued in other transition countries during 1990s, would be avoided. The central institutional actor was the Privatisation agency (PA), claimed to be independent from any government department. As an executive body, it was in charge of initialization, organization and supervision of the privatisation process defined by law. The main idea of the PA was to signal credibility and commitment of the government towards reforms, whereas the main goal was to ensure a competitive and transparent process of privatisation leading to the fulfillment of multiple objectives: distributing the property to most efficient owners; generate urgently needed revenues for the state and partly free the government from the ownership burden. In order to achieve these objectives, two models of privatisation had been chosen: the tender procedure for large companies, and auction procedure for the medium and small size firms. At the beginning the so-called *Dutch auction* was applied, and later in order speed up the process, *English auction* replaced it. Investors could buy enterprises with a lump sum payment or instalment payments. Instalment payments were reserved as a option only for Serbian citizens, and not for foreign investors. The aim of the latter measure was to spark competition enabling more entities to compete for enterprises and to enable domestic investors with less capital to take a part in privatisation. In order to secure existence and foster further development of the newly privatized enterprises, regulatory framework installed numerous restrictions on new owners. In addition to paying the price of the enterprise, every owner was also obliged to invest certain amount of money in the firm. In most cases, the new owners would have to: keep employees over the period of 5 years and retain the core business or not to sell the enterprise to others. In a case of violations of these contractual obligations, PA could use a right to terminate the contract. Although *de jure* the framework appeared to be well-thought-out at a first glance, *de facto* it malfunctioned and the goals of privatisation were only partially met. Privatisation process brought significant losses: in the aftermath, almost 50% of the privatized firms disappeared resulting in thousands of lost jobs. The loopholes in broader institutional context and excessive rent-seeking consist the main part of explanation for such an outcome (see more by [Ivanović et al., 2019](#); [Denisova et al., 2012](#); [Vujačić and Petrović-Vujačić, 2011](#); [Cerović and Mitrović, 2007](#)). In the context of gender issues, the legislative framework was *de jure* gender neutral. The gender burden was non-existent and there was no formal discrimination between men and women applied.

Was the institutional and cultural context favorable for female entrepreneurship? General environment and historical background in Serbia are not favorable for women entrepreneurs. In this case Serbia is similar to many transition and developing countries. The frequently underlined legacy of communism also included the emancipation of women ([Fidelis, 2010](#)). It was the result of the fact that the socialist states overtook a range of social and economic functions of a family, creating a generous welfare system including child care, which enabled women to actively participate in the work force under the old

regime (Kolin, 2010). Some researchers claim that in the socialist system the gender gap was relatively small and after the collapse of the socialist system it increased (LaFont, 2001). Although there are certain contributions of the Serbian socialist system towards woman emancipation, there are still three important facts, which turned to be substantial problems during the transition. First, gender equality was only the official ideology of the one-party system. The reality was different. Men were dominating in the business as well as in public affairs. The same was true for other communist countries (Manolova et al., 2007; Wells et al., 2003). Second, the jobs women occupied during the communist times, such as those in the public sector, textile industry or education, were to a large extent either lost or characterised by low wages in new circumstances (Kolin, 2010). Third, deeper, informal rules regarding the subordinate role of women in the society remained extremely strong (Gavrilović and Stjepanović-Zaharijevski, 2012) and reemerged after the communist ideology vanished. The presence of authoritarian, traditional and patriarchal values and the absence of values related to political and economic liberalism could be even traced back to the delayed modernisation from the late XIX and early XX century (Pešić, 2016). All of this made hard for women to break through as business entrepreneurs. One may argue that the unfavorable conditions surrounding the female entrepreneurs in Serbia are same or similar in most of the transition countries in Europe: lack of experience and market based expertise, lack of material endowments and resources, and lack of financial support (Herman and Szabo, 2015). Therefore, the given setting could be transposed to other transition economies in the Eastern Europe.

It follows, that privatization in Serbia faced similar economic and institutional challenges as in other transition countries: lack of capital and loopholes in legislation. The *de jure* privatization process, as well as the laws, originating from the communist era, offered same formal conditions for men and women; however, *de facto* women faced at least two important disadvantages: i) the minor role of women in the society, which was based on a rather traditional historical roots of a patriarchal society; ii) predominant employment of women in low-wage sectors of the economy. These factors provide a grim outlook for female entrepreneurship in Serbia and one may assume that the majority of cases, when women privatized firms, the female ownership was just a facade for the activities of their powerful husbands or parents. Yet, the data speaks against this statement and as we will see, in many cases, the women, who purchased firms during the privatization had a track record of their own entrepreneurial achievements, independent of their parents or husbands.

### 3 Data

For the given research questions we used the dataset from Ivanović et al. (2019). The original sources of the data are the Databases of Serbian Business Registers Agency (APR), Bankruptcy Supervision Agency (ALSU) as well as privatisation contracts by Privatisation Agency (AP). We have identified the professional and entrepreneurial background

of the new female owners using online-search about the biographies, the information in newspapers, specialized portals covering economic events, business social network profiles, and personal and corporate web-pages, whenever they existed. Newspapers, weekly magazines, television and radio station websites were used to identify persons with entrepreneurial background include but are not limited to: Politika, Blic, Danas, NIN, Novosti, Kurir, Vesti, Vreme, Press, Glas Javnosti, Progressive Magazin, Vesti, B92, Radio-Television of Serbia, Radio-Television of Vojvodina. Specialised information portals where we found information about the prior entrepreneurial activities in individual cases refer to: ekapija.com; paunpress.com; mondo.rs; vidovdan.org; dragas.biz; 021.rs; sredidom.com; namestaj.rs and soinfo.org. These sources allow us to identify the entrepreneurial background of female owners to our best knowledge. Regarding the personal entrepreneurial records of female owners, it is plausible to suppose that female owners with strong entrepreneurial experience, made these publicly available. If at all possible, it was hard to hide such information from the public. Additionally, privatisation process was covered in detail by media, because of the importance and the very nature of the process. Auctions were public and often were directly transmitted by the media. The information regarding wealthy and influential husbands or parents would inevitably leak into the newspapers and in cases, where this connection existed, media would report about it.

Before focusing on the determinants of failures, it is important to consider the context related to all privatized firms from the data-bank of the Privatization Agency. It follows that around 7% of firms were privatized by women entrepreneurs. Although at first glance this value might appear to be relatively small, still these firms employed more than 8300 persons, constituting 4.5% of the total workforce of all privatized firms in our sample. In Table 1 we find similar bankruptcy rates for male and female ownership, with slightly higher failure rates for female ownership (45% against 43%). The rest of the firms in the overall sample can be classified as mixed ownership consortia or legal entities (enterprises) and therefore in such cases the ownership can not be attributed to any gender: such firms tended to exhibit lower failure rates. In the overall sample, sex of the firm owner is an insignificant predictor of failure, which confirms the statement that the difference in failure rates between the genders is negligible<sup>1</sup>. We therefore focus on the cases of firms bought by female entrepreneurs and analyse these, trying to reveal the determinants of failures.

Table 1: Bankruptcy rates by type of ownership

	Male	Female
Firms share	0.753	0.072
Bankruptcy rates	0.429	0.453

<sup>1</sup>One has to note that this statement refers to our sample, whereas across all Serbian firms, enterprises, owned by women exhibit slightly higher closure rates, comparing to the ones of firms owned by men (Pantic Popovic, 2014).

In Table 2 we summarize the variables, used in the estimations. One of the first thing, that one notices, is the relatively high rate of bankruptcies; however, the bankruptcy rate for men was at a similar level (see Table 1). More striking is the ownership change rate, which means that around 65% of firms privatized by women were later overtaken by other actors (men or mixed ownership<sup>2</sup>). The variable *prior success* deserves special attention. If the given woman was either a firm owner and/or founded at least one firm, which was still existing before and during the privatization or a firm CEO or member of the board of directors before the privatization. Cases of prior success are rare, yet about 8% of them can be attributed to own, independent success before privatization. Cases, in which success of the female entrepreneur can be attributed to her husband amount to 7%, whereas cases, in which parental success was decisive are few. The duration of female ownership if prior success was registered is quite long and ranges from 131 to 171 months, or from 11 to 14 years. The data on price and investments and the number of workers in logarithms show that women primarily purchased small and medium size firms with around 30 workers on average with the majority of firms having less than 50 workers (see Table 3). Another interesting feature – women tended to purchase firms not very far from their place of birth, yet many of these privatized firms were located remotely from the capital, Belgrade. This fact shows that the rise of female entrepreneurship was not concentrated in one place but was rather scattered throughout the country. As for industrial attribution, women were indeed dominantly present in trade and service sector (Herman and Szabo, 2015), which corresponds to the fact, that many women occupied jobs in services and retail trade before privatization (see Section 2). From Table 3 it follows that agriculture was the less preferred sector for female entrepreneurs. In the next section we estimate the probability of failure and ownership change using the given variables.

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<sup>2</sup>Including cases, when the Privatization Agency terminated the contract.

Table 2: Descriptive statistics

Variable	mean	sd
bankrupt	0.47	0.50
ownership change	0.65	0.48
<i>prior success</i> × own	0.08	0.28
<i>prior success</i> × parents	0.02	0.13
<i>prior success</i> × husband	0.07	0.25
<i>prior success</i> × own × duration	142.56	57.21
<i>prior success</i> × parents × duration	170.94	41.50
<i>prior success</i> × husband × duration	131.02	52.81
ln pinv	16.04	2.95
ln distance to Belgrade	3.90	2.07
ln distance POB	2.16	2.26
ln workers	3.48	1.35
construction and mining	0.21	0.41
manufacturing	0.27	0.44
services and retail	0.43	0.50
<i>Overall observations</i>	121	

Table 3: Types of firms, privatized by women

Industry	
Type	Share
agriculture	9.20%
construction and mining	20.80%
manufacturing	26.70%
services and retail	43.30%
Number of workers	
below 50	60.83%
between 50 and 250	35.00%
between 250 and 500	4.17%

## 4 Estimations and results

For the analysis of the determinants of failures, we appeal to the well-established framework of logistic regressions. As a proxy for failure we use an indicator for bankruptcy, which represents the worst possible outcome. As for the independent variables, we are interested in the effect of female ownership with certain backgrounds. Registered success prior to privatization should be inversely related to the risks of failure, yet itself prior success can be defined in a more precise way in order to address our research question: we distinguish between prior success while having prominent and successful parents, a successful husband or own success. This division is crucial for our research question: significant role of own entrepreneurial background prior success would mean that independently gained positive experience helped to avoid failure during privatization. On the contrary, significant role of prior success attributed to parents would hint at nepotism and a significant role of a husband would reveal an influential man behind female ownership. Bearing these assumptions in mind, we can set up a simple model explaining the probability of failure. The logit function  $g(\text{prior success}_i, BG_i, C_i)$  can be presented in a linear form, which we later estimate:

$$g(\text{prior success}_i, BG_i, C_i) = \beta_0 + \beta_B \text{prior success}_i \times BG_i + \beta_c C_i \quad (1)$$

where  $\text{prior success}_i$  denotes evidence of entrepreneurial success before privatization;  $BG_i$  denotes attribution of background success to parents, husband or own;  $C_i$  represent controls for firm characteristics such as price and investment commitment and number of workers as a size proxy; industrial attribution and distance to the capital. In addition, we control for the distance to place of birth (POB) of the first female owner as a proxy for social capital.  $\beta$ s denote coefficients, using which we calculate average marginal effects (AME).

Whereas the attributions to own, parental or husband's success are indicators of a certain treatment by background of the new owners, one has to check the effect of the duration of the given ownership: if the new female owners owned the firms for a very short period of time, any effects in consideration would not be plausible. Therefore we slightly adjust the specification in order to capture the duration ( $D_i$ ) of ownership by background types:

$$g(\text{prior success}_i, BG_i, D_i, C_i) = \beta_0 + \beta_B \text{prior success}_i \times BG_i \times D_i + \beta_c C_i \quad (2)$$

We can now focus on the three proxies for the background of the female owners: own entrepreneurial success; known successful parents and known successful husband prior to the purchase of the firm. These three variables allow us to capture the effects of own success against the ones related to powerful parents or husbands. The success of siblings could also be considered, yet these cases were rare. A simple logit regression (Table 4) with these background variables as determinants of bankruptcy shows, that own success

and a successful husband are significantly decreasing the risks of failure almost by 55%, with the average marginal effect of own success being slightly higher. These magnitudes remain at similar levels once controls are introduced. The success of parents; however, is not significant. Obviously, one needs to control for the firm characteristics and other effects, however, as other estimations will show, these effects turn out to be robust. In fact, not only robust with respect to further effects, but also with respect to the definition of the exposure of the firm to the owner background, since we can capture how long the firm was in possession of the first female owner. We also conduct a goodness-of-fit test and report the related p-value as in [Fagerland et al. \(2008\)](#) and display other standard measures of the predictive power of the logistic model: Cragg and Uhler’s, Efron’s and McFadden’s pseudo R-squared values. In addition, we report the results with robust standard errors and with bootstrapped ones (50 rounds), although the robust standard errors appear to be more conservative in most cases.

Table 4: Basic results

Variables	(1) bankrupt	(2) AME	(3) bankrupt	(4) AME
<i>prior success</i> × own	-2.287** (1.077)	-0.564** (0.262)	-2.287*** (0.723)	-0.564*** (0.175)
<i>prior success</i> × parents	1.014 (1.139)	0.250 (0.280)	1.014* (0.529)	0.250* (0.129)
<i>prior success</i> × husband	-2.209* (1.254)	-0.545* (0.306)	-2.209*** (0.654)	-0.545*** (0.156)
constant	0.0900 (0.201)		0.0900 (0.143)	
Observations	119	119	119	119
Hosmer-Lemeshow GOF test			0.384	
Cragg & Uhler’s R2			0.132	
Efron’s R2			0.092	
McFadden’s R2			0.075	
	Robust SE		Bootstrapped SE	
	*** p<0.01, ** p<0.05, * p<0.1			

Let us consider the results with further controls. We add the following firm characteristics: logarithms of price and investment costs and number of workers in order to capture the effects of the firm’s size; proxies for industry and distance to the capital, Belgrade. In addition, we control for the distance of the purchased firm to the place of birth of the first female owner – with this variable we try to capture the social capital of the owner. From [Table 5](#) it follows that own success before purchasing the firm and the presence of a successful husband are again the only significant negative determinants of bankruptcies: indeed, female owners, without past entrepreneurial success or successful partners backing them up would have a hard time managing a firm. This finding also means that own

experience was almost as important with respect to avoiding bankruptcy as the ones of a partner. However, the binary markers do not capture the duration of ownership with such backgrounds: if the ownership was too short, it's relationship with the risks of bankruptcy could be spurious. In Table 6 we construct an interaction term, allowing us to capture the duration of ownership in months as of the end of 2019.

Table 5: Introducing further controls

Variables	(5) bankrupt	(6) AME	(7) bankrupt	(8) AME
<i>prior success</i> × own	-2.354** (1.057)	-0.580** (0.257)	-2.354*** (0.705)	-0.580*** (0.171)
<i>prior success</i> × parents	0.825 (1.402)	0.203 (0.344)	0.825 (0.768)	0.203 (0.190)
<i>prior success</i> × husband	-2.419* (1.245)	-0.596** (0.304)	-2.419*** (0.631)	-0.596*** (0.152)
ln pinv	0.0207 (0.0757)	0.00510 (0.0186)	0.0207 (0.0840)	0.00510 (0.0207)
ln workers	0.127 (0.194)	0.0313 (0.0479)	0.127 (0.269)	0.0313 (0.0663)
ln distance to Belgrade	0.0477 (0.115)	0.0118 (0.0283)	0.0477 (0.120)	0.0118 (0.0296)
ln distance POB	0.122 (0.102)	0.0300 (0.0250)	0.122 (0.128)	0.0300 (0.0312)
construction and mining	0.925 (0.827)	0.228 (0.204)	0.925 (0.677)	0.228 (0.167)
manufacturing	0.893 (0.776)	0.220 (0.191)	0.893 (0.830)	0.220 (0.205)
services and retail	0.413 (0.717)	0.102 (0.177)	0.413 (0.791)	0.102 (0.196)
constant	-1.740 (1.306)		-1.740 (1.799)	
Observations	119	119	119	119
Hosmer-Lemeshow GOF test			0.2403	
Cragg & Uhler's R2			0.190	
Efron's R2			0.136	
McFadden's R2			0.111	

Robust SE                      Bootstrapped SE  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Around 65% of firms were later purchased or taken over by men or mixed ownership (see Table 2). As of the end of 2019, the overall average duration of female ownership was roughly 145 or about 12 years overall, including all firms. As for the firms, which were taken over by new male owners or legal entities with mixed ownership, the overall average duration of female ownership was roughly 137 months or somewhat longer than 11 years.

Table 6: Duration of ownership

Variables	(9) bankrupt	(10) AME	(11) bankrupt	(12) AME
<i>prior success</i> × own × duration	-0.0148** (0.00695)	-0.00366** (0.00170)	-0.0148*** (0.00478)	-0.00366*** (0.00116)
<i>prior success</i> × parents × duration	0.00565 (0.00986)	0.00140 (0.00243)	0.00565 (0.00454)	0.00140 (0.00112)
<i>prior success</i> × husband × duration	-0.0157 (0.0106)	-0.00388 (0.00260)	-0.0157*** (0.00460)	-0.00388*** (0.00112)
ln pinv	0.0164 (0.0741)	0.00404 (0.0183)	0.0164 (0.0809)	0.00404 (0.0200)
ln workers	0.114 (0.187)	0.0281 (0.0461)	0.114 (0.258)	0.0281 (0.0637)
ln distance to Belgrade	0.0675 (0.112)	0.0167 (0.0276)	0.0675 (0.118)	0.0167 (0.0292)
ln distance POB	0.116 (0.100)	0.0286 (0.0247)	0.116 (0.122)	0.0286 (0.0299)
construction and mining	0.882 (0.821)	0.218 (0.203)	0.882 (0.646)	0.218 (0.159)
manufacturing	0.915 (0.779)	0.226 (0.192)	0.915 (0.813)	0.226 (0.201)
services and retail	0.323 (0.712)	0.0798 (0.176)	0.323 (0.775)	0.0798 (0.192)
constant	-1.678 (1.297)		-1.678 (1.752)	
Observations	119	119	119	119
Hosmer-Lemeshow GOF test			0.2041	
Cragg & Uhler's R2			0.174	
Efron's R2			0.128	
McFadden's R2			0.101	

Robust SE                      Bootstrapped SE  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

It follows that the average duration of female ownership was substantially longer than the longest span of supervision from the government, which could last up to 5 years. This fact undermines the hypothesis that women were used as the facade for privatization purchases conducted by their male partners or for asset-stripping activities: even in cases, when the given women had powerful and successful husbands, the average duration of female ownership was about 131 months or about 11 years. The estimation of the determinants of ownership change (to new male owners or legal entities with mixed ownership) allows us to state that the only significant predictor was the size: as it follows from Table 7, only the number of workers was significant. If the powerful husbands would tend overtake the firms of their wives, in general or after the end of supervision, the given marker of the successful husband would be significant – however, this is not the case.

Our empirical analysis allows to establish several findings, with respect to the research questions on the emergence of female entrepreneurship during privatization in Serbia. After conducting a robustness check involving the duration of ownership and the probability of ownership change, it follows that i) own entrepreneurial success prior to privatization, was almost as equally important in terms of preventing bankruptcy of the newly purchased firm, as the entrepreneurial success of the husband prior to privatization; ii) the entrepreneurial background of parents did not play any significant role in determining the risks of failure; iii) the probability of the ownership change to male to mixed ownership is not related to the presence of an influential husband in the background.

Thus, the emergence of female entrepreneurship in Serbia combines the presence of self-made independent business-women and the involvement of powerful men in the background of new female owners. Although we do not detect a relationship between the presence of having an influential husband and a subsequent ownership change after privatization, it is still possible that powerful men channel their influence through the activities of their wives, if the latter keep the ownership of the firm; however, such cases are harder to reveal.

Table 7: Determinants of ownership change (male or/and legal entities with mixed ownership)

Variables	(13) ownership change	(14) AME	(15) ownership change	(16) AME
<i>prior success</i> × own	-1.415 (0.876)	-0.308 (0.193)	-1.415 (1.408)	-0.308 (0.312)
<i>prior success</i> × parents	-0.477 (1.399)	-0.104 (0.304)	-0.477 (1.216)	-0.104 (0.264)
<i>prior success</i> × husband	-1.235 (0.786)	-0.269 (0.167)	-1.235 (1.036)	-0.269 (0.231)
ln pinv	0.0675 (0.0768)	0.0147 (0.0167)	0.0675 (0.0919)	0.0147 (0.0196)
ln workers	0.507** (0.204)	0.110** (0.0437)	0.507** (0.235)	0.110** (0.0547)
ln distance to Belgrade	-0.0885 (0.113)	-0.0192 (0.0245)	-0.0885 (0.119)	-0.0192 (0.0254)
ln distance POB	0.143 (0.111)	0.0310 (0.0238)	0.143 (0.135)	0.0310 (0.0285)
construction and mining	0.529 (0.772)	0.115 (0.167)	0.529 (3.361)	0.115 (0.737)
manufacturing	0.424 (0.730)	0.0921 (0.158)	0.424 (3.229)	0.0921 (0.708)
services and retail	1.311* (0.728)	0.285* (0.154)	1.311 (3.225)	0.285 (0.719)
constant	-2.643* (1.484)		-2.643 (3.822)	
Observations	119	119	119	119
Hosmer-Lemeshow GOF test		0.0897		
Cragg & Uhler's R2		0.226		
Efron's R2		0.187		
McFadden's R2		0.139		

Robust SE

Bootstrapped SE

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 5 Discussion

According to [Gorji and Rahimian \(2011\)](#) the involvement of women in entrepreneurial activities is to a large extent determined by individual characteristics such as family status or education, organisational barriers including financial capacity, marketing skills and physical resources and broader environmental barriers referring to social and cultural norms as well as formal framework for conducting the business. Bearing in mind the distinctive nature of Serbian transition marked by instability and low pace of reforms and informal, cultural limitations of the role of women in the society we could argue that all of these factors had a rather negative influence on the overall success of women in privatisation. In addition, the fact that women occupied predominantly low wage jobs prior to privatization did not favor their success since financial burden is the most common obstacle in developing entrepreneurship ([Klapper et al., 2006](#)). According to Global Competitiveness Report ([Schwab and Sala-i Martin, 2011](#)), one of the most substantial barriers, besides corruption, inefficient government bureaucracy and political instability, was the access to financing. With respect to these factors women did not enjoy any advantages as well.

Another reason for a relatively low share of women as new owners in privatisation process is the so-called *glass ceiling effect*, or invisible barriers which limit the career prospects for women ([Bass and Avolio, 1994](#)). As a result of it, despite relatively high managerial potential related to the fact that already in 1990s women constituted more than 53% of all university students ([Statistical Office of the Republic of Serbia, 2004](#)), the share of female entrepreneurs was relatively low. After 2015, in the aftermath of the privatization, the average share of highly educated women in different industries was almost 49.47% ([Stošić et al., 2015](#)), whereas the share of female entrepreneurs reached almost 26%, close to the average of the OECD countries.

Do our findings have economic significance? The observed 7% of female entrepreneurs in the complete sample of the newly privatized firms may seem to be small and the majority of these firms were taken over later, yet these 7% had far-reaching implications and paved the way to female empowerment and promotion of gender equality. Women tend to hire women as well, reducing unemployment gap and contributing to the weakening of discrimination biases ([Radović-Marković, 2015](#); [Aidis et al., 2007](#)). In female-owned companies probability of hiring a woman for an executive position is much higher than in the male-owned businesses. 41% of female-owned firms would hire a woman for an executive position, whereas only 6% of male owned companies ([Reva, 2012, p.8](#)) would do so. It may be argued that the male dominated environment is not supportive for female entrepreneurship. The fact that women become entrepreneurs and tend to hire woman on executive position leads to capitalisation of experience, acquired skills and obtained training in female owned companies, reducing gender inequality ([Ramadani et al., 2015](#)) and paving the way to further female empowerment.

One has to note, that the female entrepreneurship rate could be higher in Serbia. The path dependency, based on traditional cultural values, which limit the role of women in

the society, still poses a substantial problem. Female entrepreneurs in Serbia still feel themselves more insecure than men and are inclined to solve issues in an informal way: 10% of female vs. 6% of male-owned businesses report usually or always making gifts or additional payments to get things done with regard to customs, taxes, licenses, regulations, or other government services (Reva, 2012, p.10). Female-owned firms report that they are facing greater regulatory hurdles than the male-owned ones. For instance, they are more likely to consider certain business regulations as a major or very severe obstacle to current firm operations and have concerns over crime and safety issues (Reva, 2012, p.8).

According to a number of studies women tend to set diverse objectives for their entrepreneurial activities. Orhan (2005) notes, that for many women financial independence and self-realization are among the main motives to buy or start a business. Robichaud et al. (2007) state that women are more likely to run a business in a way where non-financial measures of success are of greater importance, because they are less aggressive, more risk averse and less competitive (see also Morris et al., 2006). These facts are not in favor of female entrepreneurs, since during the privatization the Privatization Agency was setting very strict objectives and deadlines in the privatization contracts – in cases, when these were not met, the buyer would face the risk of termination of the contract and the subsequent change of ownership. This fact could explain the relatively high share of cases, when the new female owners had to give up their firms.

Multiple factors were working against female entrepreneurs during the privatization in Serbia and therefore the cases, in which own independent success allowed women to build up on their previous positive experience, purchase and run firms, which survived in the aftermath of privatization, deserve to be noted.

## 6 Conclusion

Undoubtedly female empowerment enhances economic development as many scholars note (Diebolt and Perrin, 2013; Geddes et al., 2012; Duflo, 2012). Yet female empowerment is extremely complex, involving formal and informal aspects, and few research has been conducted in order to investigate its early stages. The emergence of female entrepreneurship during the privatization in Serbia is one of such examples, which we took a closer look at.

The economic transition from the planned economy to a market one in Serbia was rather slow and privatization was conducted later than in other countries. Poor economic conditions and loopholes in legislation (Ivanović et al., 2019) to a certain extent spoiled the outcomes of privatization. *De jure* the privatization framework and the related formal institutions provided equal chances for both men and women. However, women in Serbia were traditionally employed in low-wage sectors such as the public sector, textile industry and education, which hindered accumulation of physical capital. In addition, although the previous Soviet ideology encouraged emancipation of women, *de facto*, women's role in the society was governed by informal rules determined by the Serbian patriarchal values, which have a longer history. Therefore, women did not have any advantages during the

privatization – in fact, it was even harder for them to take part in it.

Nevertheless, women actively participated in privatization and their failure rate was not substantially higher than the one for the firms, owned by men. We expand the dataset from (Ivanović et al., 2019) with biographic details of the female entrepreneurs and analyse the determinants of bankruptcy in order to answer two questions: i) was own prior success of a new female owner decisive in preventing failure or was it more the success of their male partners or parents? ii) was female participation in the privatization only a facade for the activities of their male partners?

Our results suggest, that prior entrepreneurial success solely attributed to the new female owners was at least as significant with respect to preventing bankruptcy as the one of their husbands. The important role of parents was not confirmed, since this variable was not significant. We conduct a robustness check by adjusting the ownership background by the duration of the given ownership: the results confirm the same findings. In addition, we model the probability of the ownership change to a male and mixed ownership and find that the having a successful husband was not related to the subsequent ownership change and thus the female ownership is less likely to be a formal facade for the entrepreneurial activities of their husbands.

The average share of female entrepreneurship across OECD countries varies from 20 to 40% (OECD, 2012, p.276). Figures are similar even in transition countries, even those lagging in reforms such as Serbia. Share of women involved in entrepreneurial activities in Serbia is around 26% (Pantic Popovic, 2014). However, there are only 22% of female CEOs in companies, which accounts for only 14% of all board members in Serbian companies. Solely as majority owners of firms, excluding the woman registered as entrepreneurs, the share of woman is more modest: 13.70%. Clearly, the privatization in Serbia contributed to female empowerment in the given country, yet around 65% of the firms in our sample were taken over by men or by legal entities with mixed ownership. The important role of own entrepreneurial success independent of parents and husbands, found in our analysis, shows the emergence of female entrepreneurship. This example may shed light on the similar processes in other transition countries in the Eastern Europe. Nevertheless, there is a long way to go in terms of gender equality and the informal role of women in these societies.

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