GENDER DIFFERENCES IN FINANCIAL INCLUSION: CENTRAL AND SOUTH EASTERN EUROPE

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Abstract

The paper analyses the gender dimension of financial inclusion in Central and South Eastern Europe (CESEE). The gender dimension is analysed for different age groups: the young, those in their most active working age and older generations. Results show that financial inclusion varies across countries and age groups, but, in general, males are more financially included than females, as measured by having an account with a financial institution. The largest positive contributor to the gender gap is employment, implying that labour market exclusion is related to financial exclusion. While having secondary education also explains the existence of the gap, tertiary education acts towards the reduction of the gap in the case of young population.

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1. Introduction

The rising inequalities in post-transition economies have many dimensions, which subsequently appear in the focus of research studies. Many changes in transition economies result in improved macroeconomic indicators, with heterogeneous impact on the microeconomic level. One of the examples is related to the development of the financial system. Claessens and Perotti (2007) suggest that financial development can be correlated with increased inequalities in societies. This could be particularly observed in transition, when different political and regulatory changes asymmetrically influence access to finance for various population subgroups, as a result of other processes brought about by the transformation of economies and societies. The financial development of transition economies has been substantial (Bonin and Wachtel, 2002), supported by large foreign direct investments in the banking sector (Giannetti and Ongena, 2009; Haselmann, Pistor, and Vig, 2010; Ongena, Popov, and Udell, 2013; Claeys and Hainz, 2014). The question is whether the effects have been evenly distributed among the population and which subgroups might be more exposed to adverse effects. The importance of this question has been previously acknowledged in relevant literature. For example, it has been established that households without formal income sources and assets that could be used as collateral in financing find themselves at a disadvantageous position in the emerging Europe financial markets dominated by foreign banks (Beck and Brown, 2015).

Previous contributions have established important differences across transition economies at the household level, but predictors as to whether a household will have a banking account are similar (Beck and Brown, 2011). The aim of this paper is to analyse financial inclusion in Central and South East European (CESEE) countries focusing on gender differences in the financial inclusion of different age groups. Our results complement previous aggregate findings that identified both age and gender as important financial inclusion factors (EBRD, 2016). The relevance of the empirical analysis can be supported with many arguments. It is complementary to the policy advocacy of increased financial literacy (Brown and Sticks, 2014), frequently found to be even worse for young people (Lusardi, Mitchell, and Curto 2010). It is also complementary to discussions about the ageing society (Bloom, Canning and Fink, 2010; Catalano and Pezzolla, 2016). Finally, it is complementary to the gender gap discussion related to differences in social mobility and access to formal employment, but also to gender differences in qualifications and wages (Lewis and Lockheed, 2008; Breen *et al.*, 2009; Dorius and Firebaugh, 2010), which increased during the transition period.

Micro data from the latest World Bank Global Financial Inclusion Database (2014) have been used in empirical analysis. Consequently, the scope of the analysis is limited by the questions asked within that Survey. However, this approach enables comparability between analysed countries, which is frequently an obstacle encountered in empirical studies focusing on transition economies.

The paper adopts the following structure. The next section briefly summarises relevant literature. Section 3 describes data and gives preliminary results on gender and age differences concerning financial inclusion in different countries. Section 4 explains the empirical strategy used and presents estimation results, while discussion of the results is presented in section 5. The last section concludes the paper.

2. Brief literature review

Financial development is one of the factors impacting inequalities in societies, including the inequality of financial inclusion of individuals. However, empirical findings are not unambiguous in determining whether financial development increases or decreases inequality. One strand of the literature suggests that financial development is related to increased inequalities in societies (e.g. Claessens and Perotti 2007). On the other hand, Beck, Demirgüç-Kunt and Levine (2007) argue that financial development disproportionately helps the poorer part of society. With greater financial development, the income of the poor tends to grow faster than the average GDP per capita, which, in turn, lowers income inequality.

In addition to the impact on micro-level outcomes, financial inclusion can have macro-level policy implications. Financial inclusion can have important consequences for monetary policy, since it influences and reflects changing behaviour of affected consumers and entrepreneurs (Mehrotra and Yetmen, 2015). As Johnston and Murdoch (2008) argue, unequal access to finance might lead to misallocations because disadvantaged population subgroups demand small-size financing, which, due to relatively high unit costs, is not deemed profitable by lending institutions. Under these circumstances, financial exclusion deepens with time and the structure of savings and borrowing agents changes, consequently affecting the financial stability of the country.

Due to these issues, the problem of financial inclusion and access to financial services came into the focus of research and has been found to vary significantly among different countries (Demirgüç-Kunt and Klapper, 2012). In order to measure financial inclusion, three dimensions have been proposed in the literature - outreach, usage and quality of financial services (Amidžić, Massara, and Mialou 2014). The outreach can be represented by assessing the differences in regional availability of services, claiming that, due to the absence of adequate financing, certain segments of society remain at a disadvantageous position. Another example is when there are preconditions in order to use certain services, such as Internet access or a specific level of digital literacy. In both examples, financial exclusion is due to involuntary reasons. Policy recommendations to remedy this problem are straightforward and suggest increased network/education efforts in certain areas in order to enable access for disadvantaged population.

The financial exclusion related to using financial services might be voluntary (when individuals can have access to services, but chose not to use them) or involuntary. The difference can be assessed by investigating the reasons why individuals do not use financial services. Policy actions also depend on the nature of the answers provided, but, in most cases, awareness- raising campaigns can lead to increased participation of excluded population. The quality of services provided is the most difficult factor to assess and it is also difficult to specify policy measures aimed at addressing the (perceived) quality gap beyond general recommendations that there should be no discriminating against consumers. Regardless of this proclaimed equality, even the perceptions of the gap influence behaviour of economic agents and can have long-run effects on the development of the entire economy.

A particular concern when considering financial exclusion is how it affects different population groups and, in particular, the young. The recent global economic crisis has increased the level of uncertainty among young populations, resulting in their increased inability to acquire financial independence from their families (Robb 2011; Shim *et al.* 2013). But, it is not only the young population at a disadvantageous position. Agarwal *et al.* (2009) showed that both young and elderly people are facing adverse financial conditions in the market, i.e. financial institutions charge higher fees and interest rates, as they perceive older people to be more risky than prime-age population. The expected consequences of financial exclusion of the young and the old are different. It could be argued that young persons have the possibility to improve their financial inclusion in the course of their lifetime. However, the probability to catch up is disproportionate due to the fact that financial markets are developing swiftly and constantly offering an increasing number of differentiated products. If financial exclusion of the young is supported by their disproportionately high financial illiteracy, then the outlook for increased financial inclusion in the future is not optimistic. The financial exclusion of the elderly is important in the context of demographic ageing. If the share of elderly population is high and increasing in an economy, the possibilities of their following developments in the financial sector in more advanced economies are limited. The ability of the elderly population to keep up with the developments of the financial system's new products could be further constrained due to the increased likelihood that they are technologically at a disadvantage as well.

Equal access to financial services is particularly important when the gender dimension is included. Even though many gender inequality issues (such as wage, employment and income gap) are relatively well documented, the gender gap in equal access to finance is a topic that, due to lack of data, has only recently gained in importance. The existence of a gender gap in financial inclusion is mostly confirmed, especially in developing countries. Demirgüç-Kunt, Klapper and Singer (2013) show that, in the case of developing countries, women are more often excluded from the use of financial services and that the consequences of their financial

exclusion are related to inequality in terms of income, education and employment status. Presbitero, Rabellotti and Piras (2014) analyse female involvement in a firm's ownership and management and find that those firms in which females are predominantly included are more likely to be credit rationed. Muravyev, Schäfer and Talavera (2009) reached a similar conclusion. Hence, we explore the gender gap for the young, the working population and the older population in transition economies in order to provide deeper insight in the structure of the gap.

3. Data and preliminary evidence

Data used in the analysis include survey data from the World Bank Global Financial Inclusion (GFI) Database. The latest GFI Survey was conducted in 2014. We are using data for 19 Central and South East European countries[1], with a total of 19,016 observations. The Survey data also provide weights, consisting of base sampling weights and post-stratification weights (Demirgüç-Kunt *et al.*, 2015). However, results in the empirical section rely on unweighted data[2]. We have opted for this approach because our aim is not to produce national level averages (for which the survey weights are intended); instead, we focus our analysis on specific sub-samples of the Survey in order to get additional insights. Survey weights designed for the overall sample might not be appropriate for the discussion of national averages of sub-samples.

There are three separate age groups analysed in the paper: younger, the so-called (prime) working age and older. These labels do not follow usual conventions in the labour market analysis, in order to allow for more evenly distributed individuals across each sub-sample. The young sample covers individuals aged 15-24; working age population covers the period 25-49 and the older population covers all respondents older than 50.

The usage of financial services is initially analysed through indicators depicting the percentage of population using specified service. Examples of services considered in the Survey are: whether a person has an account, whether a person has a debit or credit card, whether a person borrowed or saved. We focus only on data covering individuals having an account, as the most generic indicator. As a preliminary analysis, we test the differences in sample means in each country. Differences in the usage of financial services are already seen in the initial inspection of data. When the entire sample is analysed[3], gender differences are significant, at least at the level of 10

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1. Countries covered in the analysis include Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Estonia, Hungary, Kosovo, Latvia, Lithuania, FYR of Macedonia, Malta, Montenegro, Poland, Romania, Serbia, the Slovak Republic and Slovenia. Although, strictly speaking, Malta and Cyprus do not belong to the group of post-transition economies, these countries joined the European Union in 2004 and share many characteristics with other countries from that group.

2. However, we have also conducted empirical analysis with the weighted data in order to check the sensitivity of our results.

3. Results are not presented here in the interest of saving space, but are available from the authors upon request.

percent in Albania, Bosnia and Herzegovina, Czechia, Kosovo, FYR of Macedonia, Poland and Romania. In all these countries men are significantly more likely to have an account with a financial institution than women. In Table 1 we examine gender differences for different age groups.

As expected, differences are significant in most countries in the case of older population. Significant differences have been found in Albania, Bosnia and Herzegovina, Czechia, Kosovo, FYR of Macedonia, Montenegro, Poland, Romania and the Slovak Republic. In all these countries, it is more likely for a man to have an account with a financial institution than for a woman.

Preliminary analysis of the prime age working population reveals some differences. Men are more likely to have an account with a financial institution in Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia and Serbia. However, men are less likely to hold an account with a financial institution in Lithuania and the Slovak Republic.

As initially expected, in the case of young population, gender differences are significant in the smallest number of countries – Cyprus and Romania.

Sample averages also show that there are huge differences between countries. In the case of the young population, the lowest share of population with an account is in Albania, while the highest share is in Slovenia. It can also be noticed that average shares are higher for prime age working population than for the young population. Due to these differences, we include country dummy variables in our empirical estimates.

Table 1. Having an account with a financial institution by country (as a percentage of the total number of male and female respondents within a specific country)

	Male	Female	Difference (sign.)
Young population			
Albania	0.33	0.29	0.04
Bulgaria	0.42	0.58	-0.16
Bosnia and Herzegovina	0.41	0.36	0.06
Cyprus	0.81	0.70	0.12*
Czechia	0.73	0.68	0.05
Estonia	0.94	0.93	0.00
Croatia	0.63	0.71	-0.08
Hungary	0.61	0.58	0.03
Kosovo	0.43	0.42	0.01
Lithuania	0.46	0.46	-0.00
Latvia	0.86	0.87	-0.01
FYR of Macedonia	0.58	0.53	0.04
Malta	0.91	0.93	0.03
Montenegro	0.54	0.45	0.09
Poland	0.75	0.67	0.08
Romania	0.68	0.43	0.24*

Serbia	0.76	0.82	-0.05
Slovak Republic	0.43	0.53	-0.09
Slovenia	0.94	0.97	-0.03
Active population			
Albania	0.61	0.45	0.16***
Bulgaria	0.84	0.86	-0.02
Bosnia and Herzegovina	0.76	0.61	0.17***
Cyprus	0.94	0.96	-0.02
Czechia	0.93	0.93	-0.01
Estonia	0.99	0.99	0.00
Croatia	0.93	0.95	-0.02
Hungary	0.88	0.87	0.01
Kosovo	0.66	0.41	0.26***
Lithuania	0.95	0.99	-0.04***
Latvia	0.97	0.98	-0.01
FYR of Macedonia	0.92	0.80	0.12***
Malta	0.99	0.99	0.01
Montenegro	0.73	0.76	-0.02
Poland	0.92	0.87	0.05
Romania	0.71	0.75	-0.04
Serbia	0.92	0.87	0.06*
Slovak Republic	0.88	0.95	-0.07**
Slovenia	0.99	0.99	-0.01
Older population			
Albania	0.39	0.27	0.12**
Bulgaria	0.58	0.53	0.04
Bosnia and Herzegovina	0.57	0.43	0.14***
Cyprus	0.97	0.93	0.01
Czechia	0.82	0.74	0.08**
Estonia	0.98	0.98	0.00
Croatia	0.93	0.91	0.02
Hungary	0.67	0.68	-0.01
Kosovo	0.76	0.38	0.38***
Lithuania	0.82	0.84	-0.01
Latvia	0.86	0.85	0.01
FYR of Macedonia	0.89	0.74	0.15***
Malta	0.98	0.95	0.03
Montenegro	0.66	0.56	0.10**
Poland	0.78	0.67	0.10***
Romania	0.61	0.45	0.52***
Serbia	0.79	0.80	-0.01
Slovak Republic	0.80	0.73	0.07*
Slovenia	0.99	0.98	0.01

Source: authors' estimates based on World Bank Global Financial Inclusion Database (2014)
Notes: *** denotes the significance at 1 percent, ** denotes the significance at 5 percent and
* denotes the significance at 10 percent.

4. Empirical strategy and estimation results

Preliminary analysis in the previous section has shown that there are differences between genders and among age groups in having an account with a financial institution. Hence, in this section, we investigate which characteristics are important contributors to the overall gender gap in financial inclusion, measured on the basis of having an account with a financial institution. As well we investigate which characteristics are important contributors to the gender gap in various age groups.

In the search for contributors to the gender gap in financial inclusion, we rely on Fairlie decomposition. Fairlie decomposition is an extension of the widely used Blinder-Oaxaca decompositions for cases when the outcome variable is binary, which is the case in our paper. Fairlie (1999) describes the method to identify and decompose the overall gap between the two subgroups (A and B, where N depicts the relative size of each group) into the contribution of each specific factor considered to be relevant for the existing gap:

$$
\bar{Y}^A - \bar{Y}^B = \left[\sum_{i=1}^{N^A} \frac{F(X_i^A \hat{\beta}^A)}{N^A} - \sum_{i=1}^{N^B} \frac{F(X_i^B \hat{\beta}^A)}{N^B} \right] + \left[\sum_{i=1}^{N^B} \frac{F(X_i^B \hat{\beta}^A)}{N^B} - \sum_{i=1}^{N^A} \frac{F(X_i^B \hat{\beta}^B)}{N^A} \right]
$$

The benefits of applying this methodological approach is that we can assess the contribution of each variable to the gap by observing the change in the average probability predicted from replacing one distribution (male) with the other (female), while holding distribution of other variables constant. It has to be emphasised, though, that underlying probit[4] models (presented in Table A2 in the Appendix) rely on the male population sub-sample[5]. In this case, the data in Table 2 provides an estimate of the contribution to the total explanation of the gap resulting from women having the same distribution as men[6].

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4. Following Fairlie (2017), we present results of 1000 replications with randomised order of covariates in order to address the issue of path-dependent decomposition. An advantage of relying on the probit model is that it somewhat decreases the problem of unobserved heterogeneity present in cross-sectional data. As Wooldridge (2002) showed, the estimated betas in this context are indeed biased, but ranking of the relative importance of covariates is preserved. It could be, however, the case that there are important variables omitted, which are only important for either men or women. In that case, ranking of the covariates importance would have been different had we included this additional variable in the estimates.

5. As a robustness check, we also performed testing with pooled estimates as well as with female coefficients. Furthermore, all variants (male, female, pooled) were tested with and without sample weights. Results can be obtained from the authors upon request. In general, the sign of the estimated coefficients is the same across different estimations; the same variables turned out to be significant.

6. It could be the case that men have different personality traits than women (on average). Personality traits influence a person's behaviour as an economic agent and also their decision about having an account with a financial institution or not. Unfortunately, data in the Survey were not very rich with information on personality traits, so we were not able to address these points in the empirical analysis.

The methodology relies on defining characteristics which are important for the specific outcome (in our case weather a person has an account with financial institution). Bearing in mind the source of the data, we include following explanatory variables (detailed description of variables can be found in Table A1 in the Appendix):

- Level of education. Empirical research shows that individuals with higher levels of education exhibit not only a higher level of financial inclusion and a higher financial literacy level, but also that those individuals plan expenditure and build up a financial safety net (OECD, 2013; Hung, Parker, Yoong, 2009). Hence, if persons are more educated, they could envisage different ways of gaining financial resources though formal channels, such as financial institutions. Thus, if there are differences in educational attainment between men and women, it could be more likely that a more educated person will be less financially excluded. This notion is included in the specification as dummy variable for the highest obtained educational level of respondent, primary education being a reference.

- Employment status. In the analysis employment status is considered not as a current labour market attachment, but rather as exposure to economic activity during the previous year. If a person had already had more work experience, they might be more likely to find a job, even if currently unemployed or in-active. Furthermore, they might be included more than economically inactive persons (Goodwin *et al.*, 1999). To the extent that men are more likely to be involved in economic activities, this variable can explain the financial inclu-sion gap. It also has to be emphasised that, in the context of post transition economies, employment does not necessarily imply that a person should have an account, due to the large shadow economy. There is widespread anecdotal evidence reporting cases of cash payment, in kind payment or no payment at all for work done by employees. Employment itself can be formal (but not actually paid, although a contract exists) or informal (and in that case more likely paid in cash).

- Income. Rhine and Greene (2006) confirm that income is an important determinant of financial inclusion. Furthermore, since some countries impose restrictions on females who want to do the same jobs as males, often for higher paying posts (Fleury, 2016), males have more opportunities for having a higher income. Hence, to the extent that men earn comparably more than women and are more likely to be asset-owners, they are also more likely to be more financially included than women. We include this in our model by specifying a dummy variable for each income quintile respondent belongs to, the middle value being a reference.

- Agriculture depicts whether a respondent participated in the sales of agricultural products produced either by himself or his family. The variable aims to capture a specific segment of the population, frequently not accustomed to using financial products. Literature shows that small farmers, in particular, are more likely to

be financially excluded (Dev, 2006). Agricultural activity in the pre-transition period was frequently organised in large state-owned enterprises with individual households being allowed to own only small allotments, in some of the cases big enough only for subsistence agricultural activity. Transition towards being agricultural producers might have been challenging, particularly in more remote areas. This population might be voluntarily financially excluded, due to long-term distrust in financial institutions. Additionally, they might operate within the shadow economy, as it might be more costly to compete in the regular market for agricultural products. However, the questionnaire is focused on obtaining financial resources from agricultural activities through sales. So, regardless of the possibility that a person may operate within the shadow economy for business purposes, they might still have an account with a financial institution for personal reasons. It is to be highly expected that, in such circumstances, men will be designated for taking care of the financial side of a family agricultural business. To the extent that men are more likely to participate in agricultural activities defined as means to get financial resources, this can contribute to the gender bias in financial inclusion.

- Government support depicts whether a person received any kind of government support during the last 12 months. This is an indication of another type of sub-population, accustomed, to a certain extent, to being provided for by government institutions. In that case they might be more accustomed to not seeking financial resources by themselves, but rather to wait for government institutions to find a solution for their (financial) problems, whatever the initial reason they found themselves in this situation might be. Frequently, government support can be obtained only if a person has financial account. However, there are also some cases of non-financial support, where one's relation to financial inclusion is not straightforward. It could also be the case that men are more likely to be designated as recipients in cases when support is provided for the whole family. To the extent that there are gender differences in receiving government support, we expect correlation with the gender gap in financial inclusion.

- Country dummy variables. Initial analysis has revealed that there are important differences in financial inclusion indicators among the economies analysed. In order to capture these, we include dummy variables (with Poland, as the largest country in the sample, being the reference) in our specification.

Analysis is first performed on the overall sample, additionally including a dummy variable referring to age, the working age group being the reference. Subsequent analysis refers to separate estimates covering the younger population, the working age population and the older population.

Table 2. Factors explaining the gender gap in the financial inclusion of different age groups

	Entire sample	Young sample	Working age sample	Older sample
Male	0.79	0.61	0.87	0.78
Female	0.75	0.59	0.84	0.71
Difference	-0.04	-0.01	-0.03	-0.07
Total contribution (% of difference)	72.79	105.07	78.60	67.17
% of total contribution				
Young	-13.89***			
Older	0.76			
Secondary ed.	44.83***	76.99***	33.69***	42.24***
Tertiary ed.	1.30	-83.89***	-17.03	15.11***
Empl	56.45***	118.89***	71.68***	28.44***
Income_1q	1.49**	6.71	10.76**	-1.56*
Income_2q	1.86**	-2.06	5.70*	0.56
Income_4q	0.15	3.39	-0.70	-0.31
Income_5q	5.91***	5.52	-1.04	8.12***
Agriculture	0.17	-0.87	-0.23	0.54
Gov_support	-0.57***	-40.75***	-9.62**	0.68
Albania	4.89***	45.99**	7.48**	-2.22*
Hungary	-0.23	1.14	-0.52	-0.17
Czechia	-0.20	-8.66	-0.10	0.02
Romania	-1.19*	0.18	-3.66	-0.96
B. and H.	3.31**	14.49	5.97*	-0.24
Bulgaria	4.90***	1.16	-1.58	7.97***
Croatia	2.94**	-1.24	2.16	3.27**
Cyprus	4.25**	12.75	0.75	4.42**
Estonia	-2.51	-6.04	-0.12	-3.79*
Latvia	-1.66	-13.02	1.22	-1.79
Lithuania	-0.01	10.38	0.94	-0.02
FYR of Macedonia	0.51	-6.39	0.21	0.74
Malta	-2.27	5.69	-3.04	-1.44
Montenegro	0.64	0.62	0.84	0.31
Serbia	0.04	-2.97	-0.32	0.44
Slovak R.	-0.72	-11.00	0.50	-0.51
Slovenia	-1.07	3.81	2.15	-0.77
Kosovo	-4.83***	-30.07	-6.10**	0.78

Source: authors' estimates based on World Bank Global Financial Inclusion Database (2014)
Notes: *** denotes the significance at 1 percent, ** denotes the significance at 5 percent and * denotes the significance at 10 percent.

The diagnostics segment of Table A2 in the Appendix reveals the structure of the sample. As previously noted, probit estimates were based on the male sub-sample, while the total number includes both genders. The pseudo R^2 of the probit estimates is relatively high and in all cases all variables are jointly significant.

There are important differences when different age groups are considered, although in all cases, on average, it is more likely that men will have an account with financial institutions rather than women. The financial inclusion gap is the smallest for the youngest and widest for the oldest sub-sample. Chosen variables jointly explain between 67% (for the oldest sub-sample) and 105% (for the youngest sub-sample) of the gap. The result for the youngest sub-sample is somewhat surprising. Bearing in mind that the coefficients of the probit estimates rely on the male sub-sample, this would imply that there are important differences between young males and females and this creates a lucrative venue for future research efforts. Results so far indicate that, had the young females the same observable characteristics as the young males, the gap we are interested in for the purpose of this research would be even wider.

When the total sample is considered, the largest positive contributor to the gap is employment, implying that labour market exclusion is related to financial exclusion. When specific age groups are considered, labour market exclusion is very important for the young population. It could be the case that family responsibilities for women aged 15-29 are related to their distance from the labour market and, subsequently, also the reason why they are less likely to have an account with a financial institution than men of the same age. Although the employment variable is also significant for the older age group, for them the most relevant variable explaining the gap is secondary education. The difference in higher educational attainment at this age explains the existing gap. It is also important for other age groups: the least important for the working age population, but interesting result is that it is also important for explaining the gap in the younger population.

The variable acting towards reduction of the gap in young population is tertiary education. For the older population, tertiary education is still an important contributor in explaining the gap. This shows that in the older age group there are important differences concerning the educational attainment level between men and women. However, these educational differences are not contributing factors to explaining the existence of the gap in young population; quite the contrary. For the young, had the men and women the same level of educational attainment (other characteristics being equal), the gap would be even wider. Since young women tend to have higher educational attainment, it is important to investigate the drivers for financial inclusion beyond education.

Income variables also provide explanation for the existing gap, but in a very specific way. In the case of working population, lower end of the income distribution is an important covariate explaining gender differences in having an account with

a financial institution. For the older population, a significant explanation is at the higher end of income distribution. Traditional roles in the family seem to be preserved in the older population sub-group with higher income. It also seems that traditional family roles are important for prime-age working population at the lower end of income distribution.

Government support acts towards reducing the gender gap in having an account with a financial institution for young and working population. In both cases, had females in the same proportion been designated the recipients of government support, the gap would have been even wider. These results deserve additional attention in future research. However, based on correlations presented in this paper, it is not clear whether any policy recommendations can be made. Hence, the nature of channelling government support and its impact on financial inclusion of beneficiaries should be more thoroughly investigated.

As initially expected, the country of residence is an important predictor for explaining the gender gap in financial inclusion. Our results indicate that this is even the case when we focus on young population. Thus, if policy recommendations are sought, it would be beneficial to analyse what drives the gender gap in financial inclusion among young population across different countries.

5. Discussion

A well-functioning financial system plays a vital role not only in supporting economic growth (Wachtel, 2001), but also in meeting individuals' financial needs. Even though post-transition economies still share many common features, development of their financial systems differs. Most post-transition economies inherited banking systems with structural distortions; however, unlike less-advanced reformers, fast-trackers managed to come up more easily with a relatively strong banking sector (Bonin and Wachtel, 2002). On the other hand, less-advanced reformers are still lagging behind in financial intermediary development, especially in lending ability (Cojocaru *et al.*, 2015). At the same time more developed financial systems are associated with a higher share of individuals having an account. Hence, the more developed financial system, the higher the probability also of females to have an account and to be financially included.

A limited number of studies on financial inclusion determinants focus on the gender difference in financial inclusion. However, most of them confirm the existence of a gender gap in financial inclusion. Demirgüç-Kunt, Klapper and Singer (2013), in a sample of 98 developing countries find evidence of a significant gender gap in financial inclusion, even after controlling for individual characteristics. Muravyev, Schäfer and Talavera (2009), who analyse a sample which mostly includes post-socialist economies in Eastern Europe and Central Asia, acknowledge the discrimination against female entrepreneurs. The gender gap in financial inclusion

is not only present in developing countries. Morsy and Youssef (2015) analyse developed and developing countries and also find that females are more likely to be financially excluded. However, as Muravyev, Schäfer and Talavera (2009) find, in more financially developed economies females are more likely to get loans and to face lower collateral requirements.

Young population is especially vulnerable to financial exclusion. Our results show that contributing factors to the financial inclusion gap of the young population are, among others, employment and education. Unemployment of young population, which is very high in many post-transition countries (Tomić, 2016; International Labour Organization, 2015), is another barrier to financial inclusion. Since entrepreneurship and self-employment are important contributors to the overall employment growth (Botrić and Tomić, 2016) and employment is an important determinant of financial inclusion, promoting entrepreneurship might be a way to increase relationships with financial institutions and, thus, of being financially included. However, we have to bear in mind that it is difficult to start a business in an uncertain environment, especially for a young population that, generally speaking, has not accumulated the wealth needed to start a business. Since our sample covers the still economically fragile period, starting a business might have been an obstacle to a significant number of young persons and, hence, a number of them remained financially excluded during this period.

A similar argument is valid for education. Since better education is associated with finding a job more easily (Wolbers, 2003), higher educational attainment is positively correlated with financial inclusion. Hence, investment in education, especially in education quality, might reduce the financial inclusion gender gap in younger population. The choice to continue education might also be restrained by the financial resources available. To the extent that this decision depends on the resources within a family, it might be the case that a male child is favoured in comparison to a female child. Policies aimed at supporting education, in particular alleviating the financial burden for parents, could decrease the gender gap in financial inclusion.

Financial inclusion can also be related to migration. High unemployment in post-transition countries might cause migration to more developed countries, which are suffering less from unemployment problems, especially youth unemployment. If migrants had the opportunity for self-employment and, thus, were able to generate adequate income, they would not be forced to migrate. Hence, policies targeted to increase self-employment and entrepreneurship might not only increase financial inclusion, but also decrease migration pressures coming from low job opportunities.

6. Conclusions

In this paper we tackled the issue of gender gap in financial inclusion across post-transition economies. Results show that financial inclusion varies across countries, but, in general, males are more financially included than females. Since we were interested in differences in financial inclusion for different age groups, we conducted the analysis on the entire sample and separately on the young, the prime-age active and the older-than-50 sub-samples. Our results indicated that the financial inclusion gender gap for the youngest population is the smallest.

We investigated several characteristics which were deemed important for explaining the gender gap: education, employment, income, government support, and whether a person is engaged in agricultural activity. When the entire sample is considered, the largest positive contributor to the gap is employment, implying that labour market exclusion is related to financial exclusion. Furthermore, we found that, while having secondary education explains the existence of the gap, tertiary education acts towards reducing the gap in the case of young population.

We found that traditional roles in the family (i.e. men being more financially included) are distributed differently across the family income spectrum. In the case of older population, traditional roles seem to be important for the higher end of income distribution, while for the working age population they seem to be evident at the lower end of the distribution.

Since having a financial account is a prominent issue for the financial inclusion of females, this problem might be mitigated, besides investing in formal education, by awareness-raising campaigns, which would bring financial services closer to women and, thus, decrease gender differences. Additionally, changes in legislation in some of the countries in our sample, which would remove restrictions on females working at the same jobs as males in some sectors, might increase the employability of females and, thus, their financial inclusion.

Given that our results indicate the smallest financial inclusion gap for the youngest population, and that they might adapt more easily to new situations, future research might broaden analyses with the types of financial exclusion of the younger population, as well as with the reasons behind it, which might give rise to the creation of policy measures designed to increase youth financial inclusion.

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Appendix

Table A1. Definition of variables

Variable	Definition
Fin_account	= 1, if respondent has an account with financial institution
Male	= 1, if respondent is male
Young	= 1, respondent is older than 15 and younger than (or equal to) 24
Working	= 1, if respondent is older than 25 and younger than (or equal to) 49
Older	= 1, if respondent is older than 50
Primary ed.	= 1, if respondents' highest completed education level is primary
Secondary ed.	= 1, if respondents' highest completed education level is secondary
Tertiary ed.	= 1, if respondents' highest completed education level is tertiary
Empl	= 1, if respondent received any money for doing work in the past 12 months
Income_1q	= 1, if respondents' household belongs to the 1st income quintile in the country
Income_2q	= 1, if respondents' household belongs to the 2nd income quintile in the country
Income_3q	= 1, if respondents' household belongs to the 3rd income quintile in the country
Income_4q	= 1, if respondents' household belongs to the 4th income quintile in the country
Income_5q	= 1, if respondents' household belongs to the 5th income quintile in the country
Agriculture	= 1, if respondent personally received money from the sale of his or family's agricultural products during the last 12 months
Gov_support	= 1, if respondent personally received any financial support from the government during the last 12 months
Country	= 1, if respondent is from a specific country

Table A2. Probit estimates for Fairlie decomposition

	Whole sample	Young sample	Working sample	Older sample
Constant	0.12 (0.11)	-0.51* (0.29)	0.20 (0.21)	0.01 (0.12)
Young	-0.56*** (0.06)			
Older	-0.03 (0.05)			
Secondary ed.	0.58*** (0.05)	0.65*** (0.10)	0.71*** (0.10)	0.58*** (0.06)
Tertiary ed.	1.05*** (0.07)	1.35*** (0.24)	1.34*** (0.14)	0.89*** (0.10)
Empl	0.90*** (0.05)	0.83*** (0.10)	0.88*** (0.07)	0.88*** (0.07)
Income_1q	-0.33*** (0.06)	-0.20 (0.14)	-0.46*** (0.11)	-0.34*** (0.09)
Income_2q	-0.14** (0.06)	-0.09 (0.15)	-0.27** (0.12)	-0.06 (0.08)
Income_4q	0.07 (0.06)	0.20 (0.15)	-0.07 (0.12)	0.11 (0.08)
Income_5q	0.23*** (0.06)	0.18 (0.14)	-0.03 (0.11)	0.45*** (0.08)
Agriculture	0.01 (0.06)	-0.02 (0.16)	-0.02 (0.11)	0.04 (0.09)
Gov_support	0.34*** (0.05)	0.75*** (0.15)	0.29*** (0.11)	0.27*** (0.07)
Albania	-0.79*** (0.11)	-0.77*** (0.29)	-0.51** (0.21)	-1.00*** (0.15)
Hungary	-0.32*** (0.11)	-0.21 (0.33)	-0.18 (0.22)	-0.40*** (0.14)
Czechia	0.05 (0.12)	0.37 (0.33)	0.04 (0.23)	-0.02 (0.16)
Romania	-0.48*** (0.11)	0.07 (0.35)	-0.67*** (0.21)	-0.47*** (0.13)
B. and H.	-0.52*** (0.11)	-0.64** (0.30)	-0.42* (0.21)	-0.57*** (0.14)
Bulgaria	-0.55*** (0.11)	-0.46 (0.33)	-0.46** (0.22)	-0.58*** (0.14)
Croatia	0.30** (0.12)	-0.08 (0.28)	0.24 (0.23)	0.77*** (0.20)
Cyprus	0.62*** (0.12)	0.44 (0.30)	0.25 (0.24)	0.98*** (0.19)
Estonia	1.41*** (0.21)	1.34*** (0.48)	1.35*** (0.48)	1.51*** (0.28)
Latvia	0.41*** (0.13)	0.69** (0.35)	0.57** (0.29)	0.31* (0.17)
Lithuania	-0.05 (0.12)	-0.39 (0.30)	0.20 (0.25)	0.03 (0.17)
FYR of Macedonia	0.17 (0.12)	-0.31 (0.30)	0.09 (0.23)	0.43*** (0.16)
Malta	1.19*** (0.18)	0.61 (0.40)	1.29*** (0.43)	1.43*** (0.26)
Montenegro	-0.52*** (0.11)	-0.16 (0.30)	-0.71*** (0.20)	-0.50*** (0.15)
Serbia	0.16 (0.12)	0.48 (0.32)	0.05 (0.23)	0.10 (0.15)
Slovak R.	-0.23** (0.11)	-0.42 (0.31)	-0.29 (0.22)	-0.11 (0.15)
Slovenia	1.57*** (0.21)	1.30*** (0.48)	1.14*** (0.36)	1.96*** (0.37)
Kosovo	-0.37*** (0.10)	-0.40 (0.27)	-0.68*** (0.19)	0.14 (0.17)
Diagnostics				
N – probit	8087	1128	3234	3725
N – decomposition	19016	2364	7590	9062
LR chi2	2462.87***	398.92***	749.10***	1100.37***
Pseudo R2	29.76	26.36	30.70	27.77

Source: authors' estimates based on World Bank Global Financial Inclusion Database (2014)