# Samozaposlenost mladih i starih: ispitivanje učinaka krize u Hrvatskoj

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# Self-employment of the young and the old: exploring effects of the crisis in Croatia

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**Self-employment of the young and the old: exploring effects of the crisis in Croatia**

**Abstract:**
The economic and financial crisis that erupted in Europe in 2008 hit some groups of the population harder than others. Young population was among those that experienced the largest increase in unemployment, whereas many of those belonging to the older working-age group, after experiencing a loss of their jobs, were unable to return to employment. Hence, one of the options for both of these groups was to seek self-employment solutions. This paper focuses precisely on transitions into self-employment of these two end-groups among the working-age population in a country that experienced one of the longest and largest setbacks during the recent recession – Croatia. The main goal of the paper is to establish differences in transition to self-employment of the young and the old before and during the crisis by distinguishing between two types of transitions: (i) out of unemployment or "necessity self-employment" and (ii) out of employment or "opportunity self-employment". The data source used for the analysis is EU LFS. Main results suggest that necessity self-employment is dominant for both groups, and especially so for the old, whereas opportunity self-employment is slightly more pronounced in the case of the young population. However, both necessity and opportunity self-employment have decreased in the crisis period. Decomposition analyses – Fairlie and Blinder-Oaxaca – indicate that the gap between the old and the young has increased in the case of necessity self-employment while it decreased for opportunity self-employment between the two observed periods. Further examination of the characteristics of unemployed youth that became self-employed or employed during the crisis reveals that the only common characteristics that increase both the probability of self-employment as well as the probability of employment are the share of working adults and the share of children within a household.

**Key words:** transitions, self-employment, young, old, decomposition, crisis, Croatia
**JEL Classification:** J60, J21

**Samozaposlenost mladih i starih: ispitivanje učinaka krize u Hrvatskoj**

**Sažetak:**
Ekonomska i financijska kriza koja je poharala Europu 2008. godine različito se odrazila na pojedine skupine stanovništva. Rast nezaposlenosti posebno je zabilježen kod mladih, a kod starijih radnika mnogi koji su zbog krize ostali bez posla nisu bili u mogućnosti ponovno pronaći zaposlenje. Stoga se kao opcija za aktivno sudjelovanje u svijetu rada za obje skupine javlja samozapošljavanje. Ovaj rad je posvećen upravo istraživanju samozapošljavanja ovih dviju skupina u zemlji koja je zabilježila jednu od najvećih i najdugotrajnijih posljedica krize – Hrvatskoj. Osnovni cilj je istražiti razlike u tranziciji ka samozaposlenosti mladih i starih, u razdoblju prije i tijekom krize, razmatrajući dva odvojena procesa: (i) samozapošljavanje iz nužde (kojem prethodi stanje nezaposlenosti) i (ii) samozapošljavanje zbog prilike (kojem prethodi stanje zaposlenosti). Istraživanje je provedeno temeljem EU podataka Ankete o radnoj snazi. Osnovni rezultati pokazuju da samozapošljavanje iz nužde dominira za obje dobne skupine, pri čemu je posebno izraženo za starije, dok je samozapošljavanje zbog prilike donekle izraženije kod mlađe populacije. Međutim, kriza negativno utječe na oba tipa samozapošljavanja. Dekompozicija jaza – primjenom Fairlie i Blinder-Oaxaca metodologije – pokazuje da se jaz u slučaju samozapošljavanja zbog nužde između ove dvije podskupine tijekom krize povećava, dok se u slučaju samozapošljavanja zbog prilike taj jaz smanjuje. Dodatno ispitivanje prediktora važnih za utvrđivanje hoće li mlada nezaposlena osoba postati samozaposlena ili zaposlenik tijekom razdoblja krize pokazuje da se zajedničke karakteristike odnose na udio zaposlenih odraslih osoba i udio djece u kućanstvu.

**Ključne riječi:** tranzicije, samozaposlenost, mladi, stari, dekompozicija, kriza, Hrvatska
**JEL klasifikacija:** J60, J21

## 1 Introduction[1]

Entrepreneurship has long been in the focus of economic literature as an important pre-requisite for growth and employment (Audretsch and Keilbach 2007; van Stel et al. 2005). It is not surprising then that the ways to promote entrepreneurship have come under the spotlight of both researchers and practitioners in the time of the global economic crisis. European Union member-states are no exception in this case. Already in the *Europe 2020* strategy, it is emphasized that entrepreneurship and self-employment are crucial in promoting employment growth by addressing opportunities and challenges stemming from structural changes (European Commission, 2012b, 2016). Active labour market policy measures that aim to reduce the unemployment by supporting start of a new business activity and/or gain initial entrepreneurial knowledge were favoured by policy advisors on both national and EU-level (European Commission, 2011, 2014). However, self-employment is not equal to entrepreneurship. Self-employed encompass not only those who are able to create additional jobs in an economy but also those who become self-employed out of pure necessity. This issue comes clearly into focus during the economic downturn.

Regardless of the overall unfavourable economic conditions, some groups of the population have been hit by the recession much more than others. Namely, many European countries recorded huge increase of youth unemployment during the crisis, which was especially manifested in Southern Europe (Greece, Spain, Italy, Croatia, Cyprus and Portugal). Most of the increase in youth unemployment rates can be attributed to the challenges related to entering the labour market. Namely, due to their lack of work experience, relatively short or incomplete education, greater instability of the contractual relationship, and fewer contacts for job search, risk of unemployment for youths is typically higher than for adults, which is only aggravated in bad economic times (see, for example, Kelly and McGuinness, 2015). Older population (those above 50 years of age), on the other hand, in comparison to prime-age population, usually has lower participation on the labour market, and once laid-off, much lower likelihood of reemployment (Marmora and Ritter, 2015). Hence, self-employment could have been a way out of their disadvantaged position on the labour market in the recession period.

The main aim of this paper is to shed light on the heterogeneity of the self-employed in Croatia. Namely, Croatia has been hit hard by the global economic crisis, which turned into a six-year-long recession, with special aggravations evidenced on the labour market. During the period 2007-2013 the unemployment rate for the working-age population (15-64) almost doubled; it rose from 10.1 percent in 2007 to 17.5 percent in 2013. The youth unemployment rate for the population 15-29 increased from pre-crisis (2007) 18.4 percent to 34.1 percent in 2013, whereas the unemployment rate for the old working-age population (50-64) increased from 6.7 percent to 10.6 percent during the same period.[2] Hence, we focus on two age subgroups that are frequently dubbed as most

[1] The paper is part of the project *ZAMAH – The Impact of the Recession on the Structure and Flow of Youth Unemployment in Croatia* (HR.3.2.01-0136) that has been funded with support from the European Social Fund (ESF) which is a part of the European Union (EU) Structural Funds. The paper reflects the views only of the authors and none of the institutions cited above can be held responsible for any use which may be made of the information contained therein. A previous version of the paper was presented at the 2nd Workshop on (Youth) Unemployment in Europe, Warsaw, May 5-6, 2016. The authors would like to express their gratitude to the workshop participants for providing comments and suggestions.

[2] Based on official Eurostat data.

vulnerable in many policy papers – the young and the old (Eichhorst et al. 2013; European Commission, 2008, 2014c, 2015). Although they are not usually at the core of entrepreneurial activity,[3] due to their specific adverse position on the labour market, we explore self-employment as a potential strategy to alleviate the unemployment burden. Also, because of demographic developments, with significant population aging, entrepreneurial activities of these two groups could prove to be highly relevant for future economic growth and increase in employment (Kurek and Rachwal, 2011).

We define young population as the one between 15 and 30 years of age, while the old population is composed of those above 50 and up to the usual legal retirement age, i.e., 65. We investigate their behaviour before the economic and financial crisis and during the crisis. Finally, we distinguish between the self-employed due to necessity and those who are self-employed because of opportunity. We consider transitions from unemployment to self-employment as necessity and transitions from employment to self-employment as opportunity cases of self-employment. The empirical analysis rests on the fairly standard approaches – utilizing Fairlie and Blinder-Oaxaca decompositions, supplemented by probit estimates. Due to scarce prior evidence, we opt for utilizing different methodological approaches. The main contribution of the paper rests in this disaggregated approach, not applied previously in Croatia, thus enabling important insight into underlying changes in that segment of the economy.

The structure of the paper is the following. The next section contains a brief literature review. Section 3 presents data description, preliminary data analysis and description of the empirical strategy. Section 4 presents results and discussions. The last section contains conclusions and discusses potential directions for future research.

## 2 Literature review

Although the self-employed are highly heterogeneous, if the main policy goal is to increase their share in an economy (in hope that they will create additional jobs and economic growth), it is important to understand why persons make this career choice. The basic argument frequently emphasized in economic studies is that self-employment is a rational choice that individuals make based on utility functions (Borjas and Bronars, 1989; Evans and Jovanovic, 1989). A vast amount of literature has been devoted to this issue, so in the following paragraphs we will concentrate on reviewing recent contributions relevant to subsequent empirical analysis.

The literature has recognised long ago that individuals change their behaviour according to the phases of the business cycle. Yet, from the perspective of the propensity to engage in self-employment, it remains unclear whether booms (*prosperity pull hypothesis*) or busts (*recession push hypothesis*) will inspire individuals to become self-employed. The distinction between the two hypotheses roughly translates into self-employment attributable to necessity (i.e. persons not able to find a job) and self-employment due to opportunity (i.e. persons engaging in entrepreneurial activities even though they have other employment options). According to the prosperity pull

[3] See, for instance, European Commission (2013, 2014b) or Singer et al. (2012).

hypothesis, opportunity self-employment will be dominant in boom phases when individuals strive to seize the opportunities in an economy (Reynolds et al., 2005). On the word of the recession push hypothesis, necessity self-employment will prevail in the downward phase of the business cycle when individuals struggle to escape unemployment (Binder and Coad, 2013).

It is argued that during the boom phase of the cycle more individuals are inclined to envisage profitable business activities (Audretsch and Acs 1994; Congregado et al. 2012), but they are also more willing to engage in activities perceived to bear more risk, such as entrepreneurial projects (Rampini, 2004). This decision is related to the underlying costs of switching from one employment status into another (Gimeno et al., 1997) as well as the risks involved in the process. The costs are direct costs of starting a business (Blanchflower et al., 2001; Fonseca et al., 2001), but also opportunity costs in terms of the time required to learn and adapt to new situation (Hundley, 2000), as well as opportunity costs in terms of forgone earnings while being employed. At the same time, due to positive trends in an economy individuals believe that it will be easier to find a job in case their own project fails since there is a growing demand in the overall labour market (Dawson et al., 2014). The opposite argument states that self-employment propensity has counter-cyclical dynamics, since unemployment pushes individuals to make a decision to become self-employed. Additionally, the opportunity cost of starting new risky business activities declines in a recession, making individuals more likely to turn away from seeking job placements (Blanchflower and Meyer, 1994; Dawson et al., 2014; Thurik et al., 2008).

A large body of literature investigates individual characteristics that influence a person's choice to become self-employed. Like many other labour market studies, important characteristics include demographics, educational attainment, previous labour market experience, as well as financial considerations such as income characteristics of the individual's family (Acemoglu, 1995). Additionally, emphasis is put on personality traits (Zhao and Seibert, 2006). For example, Caliendo et al. (2014) have found that "risk attitudes" and "locus of control" have strong effects on choosing self-employment but also the ability to survive as an entrepreneur. Another segment of the literature claims that personality traits are unimportant (Blanchflower and Oswald, 1998, p. 51). This view has been additionally supported by the heterogeneity among the entrepreneurs as well as among the self-employed, leading to a conclusion that it would be difficult to profile a typical entrepreneur (Gartner, 1985). Even if it were possible to univocally claim the personality traits, it is hard to envisage policy measures leading to support creation of these traits within the society.

Changes in the demographic structure of a society, which has gained interest with respect to increased fiscal pressure, can also be translated into discussion on limits for future entrepreneurial potentials. Previous literature (Kurek and Rachwal, 2011; Minola et al., 2014) has also established that there are important differences between young and old entrepreneurs. Kautonen et al. (2014) have shown that there are differences between the young and the old with respect to whether a person wants to work as self-employed or also aspires to employ others. They argue that in the first case, propensity to become an entrepreneur increases with age, while in the latter it has an inverse U-shape. Differences in the personality traits between young and old could additionally be important determinants of entrepreneurship. Recently, Minola et al. (2014) have provided a very interesting systematic review of the literature that primarily focuses on differences between young and old people in entrepreneurship. Their main findings show that various points of departure between

young and older entrepreneurs include human capital; psychological, cognitive and motivational attributes; as well as a reaction to influences from the environment, culture and norms.

One strand of arguments states that older entrepreneurs have been able to take advantage of additional financial and social capital (Singh and DeNoble, 2003) while other studies (Blanchflower, et al., 2001; van Praag and van Ophem, 1995) claim that actually young persons have higher propensity to become entrepreneurs. As frequently documented (Addison and Portugal, 2004; Hirsch et al., 2000; Wanberg et al., 2005), older unemployed persons are disadvantaged on the labour market. It is very plausible to assume that this population subgroup will become inactive after experiencing unemployment and will not very likely switch to self-employment. Furthermore, as Zissimopoulos and Karoly (2007) suggest, accessibility of pension (in the near future) additionally deters individuals from becoming self-employed. However, arguments related to the required initial human capital necessary to start a new business activity do not favour younger population subgroups, in particular if they are without prior work experience.

Dissimilarities between youth and the old related to entrepreneurial endeavours might be especially important in transition economies (Estrin and Mickiewicz, 2010). It could be argued that due to suppressed possibilities to develop new enterprises before the collapse of the socialist system at the beginning of the 1990s, older generations might be more inclined to remain in an employer-employee relationship which is perceived to be less risky. On the other hand, precisely because of previous inability to develop their own businesses, the older generations might seek opportunities to start their own business in order to compensate for earlier failures. The studies focusing on transition economies frequently emphasize the institutional factor as decisive in developing entrepreneurial potential (Aidis and van Praag, 2007; Lafuente and Vaillant, 2013).

However, as emphasized, for example, in Kurek and Rachwal (2011, p. 404), the development of entrepreneurial activities in a given country depends on many different factors, including demographic processes, economic policy, legal and administrative determinants connected with starting up and running enterprises, impulses coming from the international business environment, the type of the market or even cultural determinants associated with various traditions of people running their own businesses. Hence, although the European Union strives to promote entrepreneurship and self-employment in the EU as a whole (European Commission, 2010), specificities of each country should be taken into account, especially when promoting entrepreneurship among the two end-groups of the working-age population. Immense emphasis has been placed on promoting youth self-employment since the start of the crisis, mostly within active labour market programmes in different EU member-states (Eichhorst et al., 2013; Eurofound, 2012; European Commission, 2011, 2012a), while specific focus on promoting “senior” entrepreneurship is less common (European Commission, 2013).

As for Croatia, the literature on self-employment is scarce, at least from the labour economics perspective. Matković (2009) documents some trends in self-employment on the Croatian labour market and concludes that self-employment has gained popularity as a form of employment with the progress of transition. However, he establishes that between 1996 and 2007 not much change in the prevalence of self-employment happened at the aggregate level. Botrić (2012) analyses the regional dimension of self-employment in Croatia in the 1998-2008 period and concludes that public sector

employment is negatively related to the self-employment share in a county, but also that educational attainment of the self-employed is important for explaining the differences across Croatian counties. Further, there are several studies that draw on the Global Entrepreneurship Monitor (GEM) research such as the one by Singer et al. (2012) where the authors claim that Croatia is actually a relatively non-entrepreneurial country. Namely, they point out that according to all GEM indicators of entrepreneurial activity, Croatia is lagging behind countries to which development group it belongs. They also stress the fact that participation of the young population (18-34) in entrepreneurial activities is decreasing and is lower than in the comparison group of countries. Singer et al. (2016) present the results of the TEA (total entrepreneurial activity) index disaggregated according to the motivation of entrepreneurs into TEA Opportunity (those who became entrepreneurs because they envisaged business prospects) and TEA Necessity (those who became entrepreneurs due to necessity). Croatia also significantly lags in entrepreneurial motivation factors behind other EU economies. The percentage of entrepreneurs who wanted to seize an opportunity is still higher (4.6 in 2015) than those who were compelled to start a business (3.1 percent), but the ratio is the least favourable in the EU.

It also has to be emphasized that existing active labour market policies (ALMP) within the Croatian Employment Service (HZZ) support start-up incentives. For example, HZZ (2016) reports 2776 new entrants into the measure during 2015, amounting to 6.7 percent participation share in all ALMP measures during the year. Recent evaluation of ALMP measures in Croatia covering the period 2010-2013 suggests that at the start of the period the number of start-up incentive beneficiaries was rather low, but rapidly increasing, accompanied by an increased share in total funds spent for this specific measure in Croatia (HZZ and IPSOS, 2016). The average amount of start-up incentive per beneficiary in the analysed period was approximately 24000 HRK (3200 EUR) and the analysis shows that in order for one beneficiary to stay in employment after the measure, the amount for approximately 2.4 beneficiaries had to be spent. Qualitative assessment of the measure suggests that the average unemployed person is not a suitable beneficiary, in particular due to lack of motivation, knowledge of specific markets or even work-related habits (organisational skills, accountability). Those who were successful beneficiaries of the start-up incentive measure mostly declared independence and the ability to be one's own boss as the pull factor towards the measure.

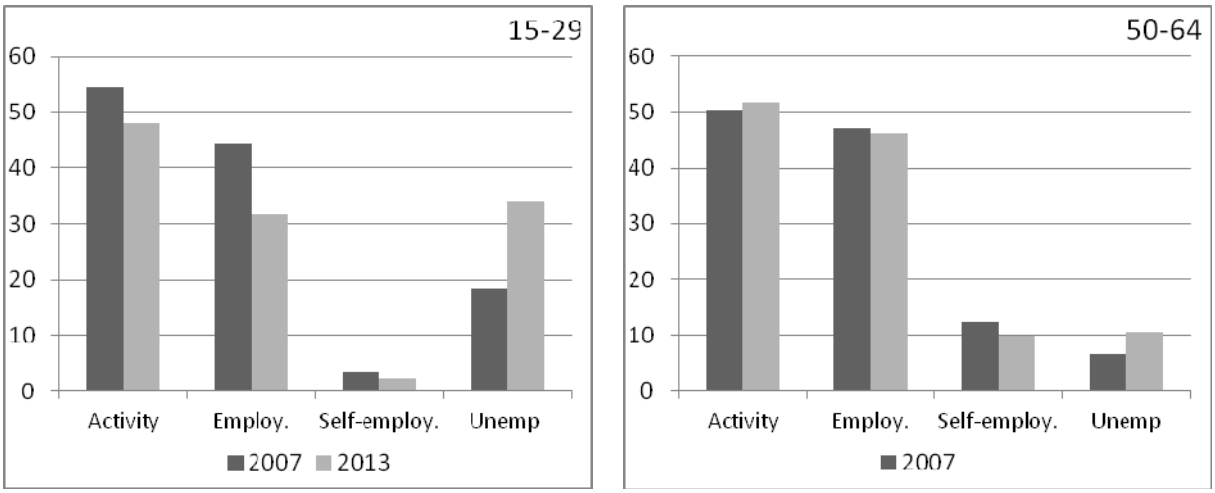
Furthermore, evaluation of the measure provides interesting information on the structure of beneficiaries. HZZ and IPSOS (2016) report that 19 percent were registered as unemployed longer than 2 years, and an additional 19 percent for a period between 1 and 2 years. Demographic characteristics show that approximately 60 percent were male, 27 percent were less than 30 years old and 14 percent were more than 50 years old. The educational attainment level for most of them was upper secondary (72 percent) and financial situation in their household was self-assessed as unfavourable (53 percent). Some of these characteristics are investigated in the empirical part of the paper in subsequent sections.

## 3 Data description and methodology

Before we start to look at the data using our definitions, let us first examine the labour market situation in Croatia, for both the youth and the old, before and during the crisis, i.e., in 2007 and

2013. Figure 1 displays activity, employment and unemployment rates, together with the share of self-employed in the respective population for the age groups 15-29 and 50-64 in years 2007 and 2013 based on annual Labour Force Survey (LFS) data published by Eurostat.

**Figure 1:** Labour market outcomes for young and old in Croatia




Source: Eurostat.

It is clear that the labour market situation deteriorated for both the young and the old since the start of the crisis. However, this is more obvious in the case of youths; namely, the decrease of the employment rate and increase of the unemployment rate is more pronounced for those aged 15-29, while their activity rate also decreased. The activity rate slightly increased in the case of the old population, most likely due to the increase of the legal retirement age for women and disincentives for early retirement that were implemented in Croatia in the observed period. The share of self-employed within the respective population decreased for both groups, while it was larger in the case of the older population to begin with. For the young population, self-employed comprised only 3.5 percent in 2007, further decreasing to 2.5 percent in 2013. These figures for the old population were 12.4 and 10.0 percent for 2007 and 2013, respectively. Share of self-employment in total employment was about 8 percent for the young in both 2007 and 2013,[4] while for the old generation this share decreased from more than 26 percent in 2007 to about 22 percent of total employment in 2013. Interestingly, the share of old self-employed in total employment within this age-group (50-64) was higher than in the case of the prime-age (30-49) population; 17 and 14 percent in 2007 and 2013, respectively. However, the overall employment rate was much lower for the older workers: 46 vs. 71 percent for the prime-age workers in 2013.

### *3.1 Data description and preliminary analysis*

In this paper we are primarily interested in differences between young and old population and their probability to become self-employed. In this respect, the EU LFS database has been used (version

[4] Eurofound (2012) reports that at the EU-level only around 4 percent of employed young people (15-24) were self-employed in 2011, while further 2.6 percent worked in a family business. Also, it observes that despite the decrease in the total youth employment, the share of self-employed young people has remained more-or-less constant over the years.

December 2014) which includes data up to year 2013.[5] We use annual data as provided by Eurostat, without additional corrections, which means that we deal only with the cross-section attributes of the data, without any panel component.

Following previous discussion, we consider two groups of the self-employed: those who have become entrepreneurs out of necessity and those who have seized the opportunity to become self-employed. In the first category, we include those who were unemployed a year ago and are self-employed at the time of the LFS interview. In the second category, we include those who were employed (but exclude self-employment cases) a year ago and are self-employed at the time of the interview.

Regarding the definition of employment status one year ago, we have to emphasize that we rely on a relatively broad definition, as used by the LFS questionnaire. In that sense, an employed person is any person who carried out a job or profession, including unpaid work for a family business or holding, as well as an apprenticeship or paid traineeship. Our measure of self-employment is also broad, since it includes any type of self-employment (with or without employees, incorporated or unincorporated). For each category we focus on the percentage of those who changed their status within a year in the overall population – from the status being either unemployed or employed (active) to becoming self-employed. Thus, we look at the percentage of switchers, i.e., the differences in switching between young and old as well as dynamics through time.[6]

Our pool of youth includes those older than 15 and younger than 30. Although the formal definition of youths in the EU is between 15 and 24 years of age, due to certain specific features of the Croatian education system as well as labour market experience for youths, we have shifted the upper boundary to the age of 30. Namely, in Croatia, as in some other EU member-states, the extension of higher education goes above 24 years, so the upper age limit is often extended to 29 years of age.[7] The older workers, on the other hand, are represented by those between 50 and 65. This is the standard definition of the older working-age population, commonly used in the literature (for instance, Cappellari et al. 2007; Kautonen et al. 2010).

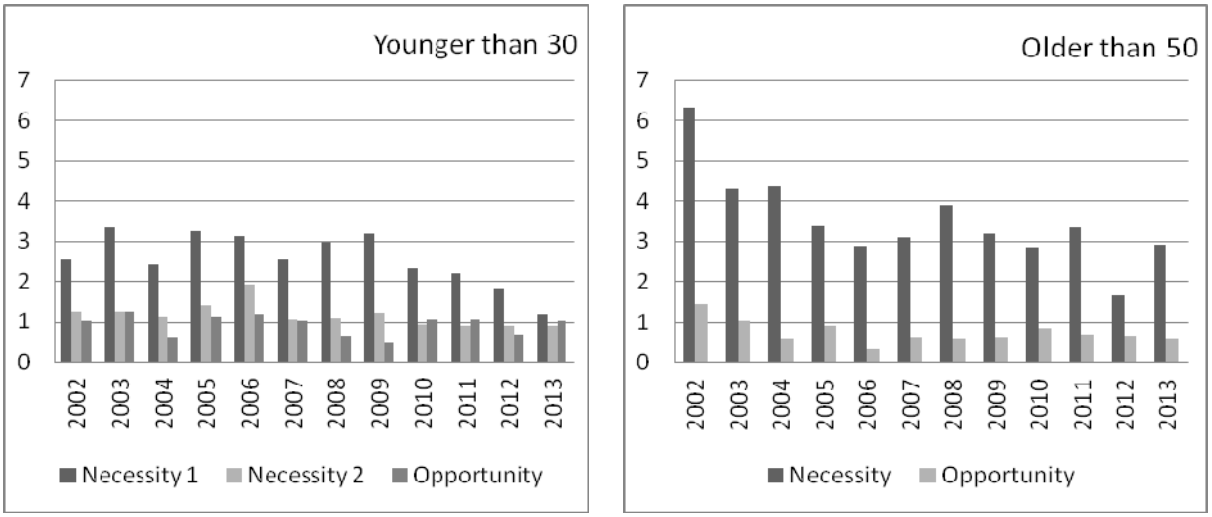
The definition of necessity self-employment for young persons is considered from two perspectives. The first is related to the entrepreneurs coming from unemployment, which directly compares our results to those for older workers (in Figure 2 this is labelled as “necessity 1”). However, we also consider a broader definition for younger population, which includes self-employment of those who were inactive, i.e., those that were in education or training a year prior to the interview (in Figure 2, this is labelled as “necessity 2”). In the case of older “entrepreneurs”, we have only those that were previously employed (opportunity self-employment) or unemployed (necessity self-employment). The differences between different types of switchers are presented in Figure 2.

[5] For more details see: http://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey

[6] A similar definition of switchers based on the labour market status a year ago is used in Tomić and Domadenik (2012).

[7] Likewise, for both *Youth Employment Initiative* and *Youth Guarantee* the age limit is lifted up to 30 years in cases where the member state considers it to be relevant.

**Figure 2:** Percentage of switchers to self-employment in Croatia




Source: Authors' estimates based on EU LFS.

The data in Figure 2 confirm our observations from Figure 1 since they clearly identify that there are important differences between young and old population subgroups in the likelihood that they will become self-employed. Figure 2 reveals that is not very likely that young persons will turn to self-employment directly from education, since the averages of our "necessity 2" measure are always lower than self-employment from previous unemployment. This is an indication that the decision to become self-employed is correlated with previous work experience. However, we do not pursue this specific issue further, but rather concentrate on the same definitions of necessity and opportunity for the young and the old throughout the rest of the paper.

When using LFS for subsample analysis[8], the question of sample quality always comes into focus. Thus, it is seldom possible to identify the formation of trends by relying on annual data. This also applies to our case. That is why we separate the overall sample into two periods: pre-crisis period (ending in year 2007, the last year in which all quarterly GDP growth rates were positive) and crisis period (with exception of 2008, in all other years Croatia recorded negative GDP growth rates). By pooling annual data we increase the sample size and hopefully alleviate some issues related to the usage of subsamples in the empirical analysis. Differences between necessity (comparable measure – "necessity 1" for young persons) and opportunity rates for young and old in the two periods are presented in the following table.

**Table 1:** Crisis and percentage of those who transitioned into self-employment

| | Pre-crisis (2002-2007) | | Crisis (2008-2013) | |
|---|---|---|---|---|
| | Younger | Older | Younger | Older |
| Necessity | 2.88 | 4.07 | 2.28 | 2.99 |
| Opportunity | 1.03 | 0.83 | 0.83 | 0.66 |

Source: Authors' estimates based on EU LFS.

[8] Sample size and structure of LFS also varies from year to year. For more details on the methodology of the Survey itself in the case of Croatia, as well as information on sample frame and sample size for each year, please refer to Croatian Bureau of Statistics, www.dzs.hr.

The data in Table 1 confirm the statistics shown in Figure 2, but only for necessity self-employment. Namely, the rates for necessity self-employment are higher in both periods for the older population. The opposite can be found for opportunity self-employment, which is significantly lower than necessity self-employment for both age-groups. It can be clearly seen that in both subgroups self-employment rates have declined in the crisis period, as compared to the pre-crisis period. This is probably due to the fact that the overall business opportunities declined in the crisis, which translated into entrepreneurial endeavours as well. Namely, one of the characteristics of the six-year-long recession in Croatia has been the enormous decrease in credit activities. Without access to money, it is hard to expect an increase in new businesses. There are several additional observations that can be extracted from this relatively simple table.

For example, it is interesting to notice that there is significantly more of the necessity self-employed, particularly in the case of the elderly group. This is perhaps because, after losing their jobs, they are much more exposed to long-term unemployment and, thus, try to become self-employed so as to compensate for the loss of income. Young people, on the other hand, may have the option of returning to inactivity after becoming unemployed, for example, in education, or it is easier for them to live with their parents. Young people, however, exhibit more pronounced "entrepreneurial" characteristics since, in comparison with the older workers, they more often decide to become self-employed out of opportunity.

### *3.2 Methodology for empirical analysis*

In order to further investigate reasons behind the differences between the young and the old, we estimate the size of the gap in self-employment for both necessity and opportunity self-employment and the main contributions to that gap formation based on the available data. To that end we first apply Fairlie decomposition, which is an extension of the widely used Blinder-Oaxaca decompositions for the cases when the outcome variable is binary. Fairlie (1999) describes the method to identify and decompose the overall gap between the two subgroups into the contribution of each specific factor considered to be relevant for the existing gap. The methodology relies on defining characteristics which are important for the specific outcome. The significance of a specific factor for the outcome is estimated by the underlying probit model (Fairlie, 2005). Since Fairlie decomposition does not entail detailed decomposition of endowment, coefficient and interaction effect, we have supplemented these results with standard Blinder-Oaxaca estimates relying on the same variables,[9] to gain further insight into underlying patterns (see, for instance, Kelly et al. 2014). The full set of results is presented in the Appendix, where estimated coefficients (in the exponentiated form) from the Blinder-Oaxaca decomposition are shown. The benefit from discussing the exponentiated coefficients is that we are able to specify the percentage contributions of each observed variable to the estimated gap.

Variables considered to be important contributions to the gap are rooted in the relevant literature, but limited by the dataset used in the analysis. These are:[10]

[9] We have also used Sinning et al. (2008) decomposition version of the Blinder-Oaxaca decomposition with underlying probit and logit model, but the estimates were not reliable for all analysed periods and subsamples.
[10] A detailed description of all variables used in the analysis can be found in the Appendix.

- Gender. Women have frequently been found to have lower probability of becoming and being self-employed, and they have a higher exit probability from that status (Fairlie and Robb, 2009). As previously stated, somewhat similar examples can also be found in Croatia (Singer et al., 2016; HZZ and IPSOS, 2016).
- Marital status. It has been frequently found (Ekert-Jaffe and Solaz, 2001; Nickell, 1979) that labour market outcomes are correlated with respondents being married, as these individuals exert higher work-search efforts. So it might be the case that married individuals are more likely to become self-employed (out of necessity) in order to be able to provide income for the rest of the family. We operationalize this status with three binary variables (single, married and widow), according to their standard definitions in EU LFS.
- Education. Arenius and Minniti (2005) find that individuals with postsecondary education are 40 percent more likely to become nascent entrepreneurs than those without a bachelor's degree. Several studies, however, have found no relationship between education and the preference for self-employment (Blanchflower et al., 2001). Since education is a traditional labour market predictor variable and we have no prior estimates to rely on in the case of Croatia, we opted for including three binary variables in the analysis (lower secondary, upper secondary and tertiary education).
- Share of children in the household. Having children could influence the decision on whether to become self-employed, since the activity itself is perceived more risky than becoming an employee. On the other hand, necessity pressure might be higher in times when the job market is damped. Furthermore, self-employed women might be more able to balance their family and work life, naturally depending on the specific occupation they work in. Noseleit (2014) recently argued that it is not clear whether self-employment is more attractive to women because they have children or whether the occupation-specific characteristics impact their decision to have children. It could also be argued that having a larger share of dependent population (not necessarily one's own children, but possibly siblings for young population or grandchildren for old population) might exert additional pressure to provide income for the household. We measure this with the number of children (age less than 15) divided by total number of persons in the household.
- Share of working adults in the household. Parental involvement in self-employment activities has also been found to have a positive influence on the self-employment decision (Blanchflower and Oswald, 1998; Matthews and Moser, 1996). Children of the self-employed have a greater propensity to become self-employed themselves (Hout and Rosen, 2000), as through family ties they develop work-specific values based on the greater weight put on self-direction, creativity and autonomy (Kohn et al., 1986). However, we do not measure this effect directly. Instead, we include the share of employed adults, which could have different effects in decision-making on becoming self-employed. It could be argued that a positive role model influences the push into self-employment. On the other hand, having access to higher family income (due to more persons working in the household) might be considered as a negative predictor for making the self-employment decision for unemployed persons.[11]

[11] There are, however, empirical studies that show that having access to higher family or non-labour income increases the probability of self-employment. For instance, Petreski et al. (2014) on the Macedonian example show that youths in households which receive remittances have larger probability of establishing their own business.

- Urbanism degree of living area. For example, Goetz and Rupasingha (2013) have empirically confirmed on US data that persons living in densely populated areas are more likely to be self-employed. Differences between urban and rural labour markets have been also emphasized in Croatia (for example, Bojnec, 2013). So we pursue this venue in this paper as well by considering three binary variables (sparsely, densely or intermediately populated area).

## 4 Results and discussion

The results are presented in three segments. We start with the analysis of differences between determinants for old and young persons to become self-employed if they were unemployed a year ago. The next subsection contains similar analysis for the case when respondents were employed (excluding self-employment) a year ago. Both of these are analysed for the pre-crisis and crisis period. Finally, the third section deals only with young unemployed population during the crisis period and concentrates on the differences in their probability to become either self-employed or employees.

### *4.1 Necessity self-employment*

In applying the Fairlie procedure we have relied on pooled estimates of the underlying probit model.[12] Thus, results of the gap are not under the influence of the age structure of the sample. The results of the estimated gap as well as the contributions (in percentage of the explained gap) of specific variables are presented in Table 2.

**Table 2:** Contributions to the gap in necessity self-employment between young and old

| | Pre-crisis period | Crisis period |
|---|---|---|
| Prediction young | 2.90 | 2.22 |
| Prediction old | 3.61 | 2.97 |
| Total estimated gap | -0.71 | -0.75 |
| Total explained (in % of gap) | 66.86 | -6.92 |
| Contributions to the gap (in % of total explained gap) | | |
| Male | 20.99*** | -599.39*** |
| Widow | 130.68*** | -1,085.68*** |
| Married | 260.50*** | -1,634.82*** |
| Child_share | 106.67*** | 235.16*** |
| Work_share | -440.69*** | 3,477.54*** |
| Spurb | 0.64 | -0.88 |
| Densurb | -25.76* | 14.59 |
| Edu_medium | 76.51*** | -227.52** |
| Edu_high | -29.53*** | -78.99* |

Note: *** denotes significance at 1 percent, ** at 5 percent and * at 10 percent level.
Source: Authors' estimates based on EU LFS.

[12] Results of the probit analysis can be found in the Appendix.

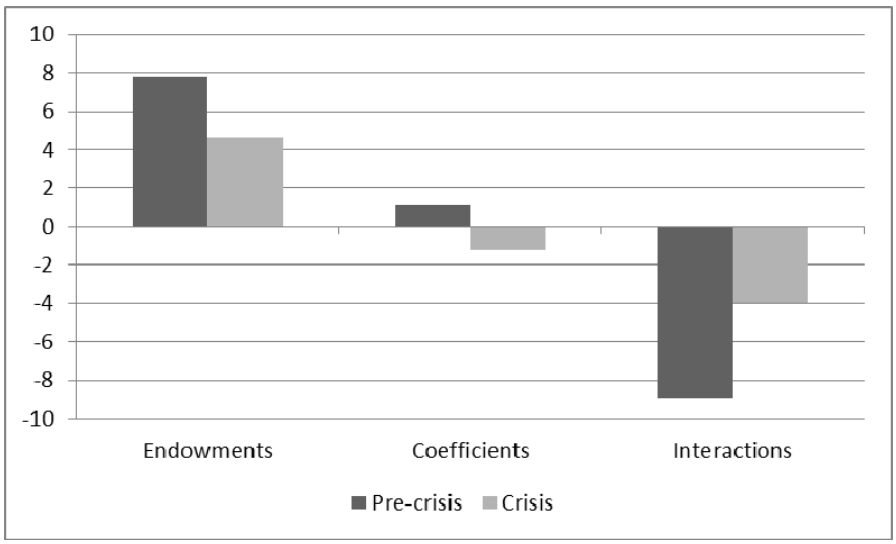
As already shown by the preliminary analysis, in both analysed periods it is more likely that older persons will choose self-employment as a way out of unemployment, which means that the gap between the young and the old is actually negative. Even though the percentage of necessity switchers has decreased in times of crisis for both population groups, the gap has actually increased, which suggests that necessity self-employment has decreased even more for the youths. The variables considered as predictors explain almost 67 percentage of the gap in the pre-crisis period. The largest positive contribution to the explanation of the existing gap comes from family status variables. It seems that it is highly important whether the person is married or if the share of children in the household is higher to explain the differences in switching from unemployment to self-employment. Also, an important contribution comes from the share of other working adults in the household. The results reveal that if the old and the young had the same share of other working adults in the household (i.e. if the structure of the sample were the same in that respect), the gap in necessity self-employment would be smaller.

The results for the crisis period are even more interesting. First, it can be noticed that variables that were able to explain a large proportion of the gap in the pre-crisis sample, have lost their explanatory power. This is probably due to the fact that factors outside the personal and household sphere predominantly influenced starting one's own business in the crisis. Furthermore, if the old and young had the same structure in terms of analysed variables, the gap would be even larger. We will not discuss the contribution of each variable to the explanation of the gap, but notice instead that not only has rank of contributions changed, but also the sign of the estimated coefficients has changed in the crisis period. The results clearly indicate that there are important changes in the gap formation during the crisis period that cannot be explained by the variables considered in the analysis.

We turn next to the Blinder-Oaxaca decomposition results. Figure 3 summarizes the main results, i.e., the decomposition of the gap into endowment, coefficient and interaction effect.[13] For ease of the discussion, the estimates are presented as percentages. First, it is important to notice that Blinder-Oaxaca decomposition for the pre-crisis period identifies a negative overall gap of 0.71 percent which is not significant. The gap in the crisis period of 0.75 percent is significant. Both decompositions (Fairlie and Blinder-Oaxaca) have identified the same size of the gap, but the additional information confirms that the difference between older and younger population in necessity self-employment becomes significant in the crisis period.

[13] As already mentioned, the full set of estimates is presented in the Appendix, Table A3.

**Figure 3:** Blinder-Oaxaca decomposition of necessity self-employment




Source: Authors' estimates based on EU LFS.

Decomposition in Figure 3 shows the size of all three segments in the pre-crisis and crisis period, but the results in Table A3 reveal that the coefficient effect is not significant in the pre-crisis period, while it becomes significant (at the level of 10 percent) and negative during the crisis. This would indicate that the labour market returns to possessing characteristics that we have included in our model are greater in the case of the old in the period after 2008. On the other hand, if the old had the same endowments as the young, the necessity self-employment of the young would increase by 7.8 percent in the pre-crisis period and by 4.6 percent in the crisis period. We can notice that the largest contribution to this result is related to the variable depicting the share of working adults in the household. Underlying probit estimates for Blinder-Oaxaca decomposition show that the higher the share of working adults in the household, the higher the probability of necessity self-employment in both population subgroups. This would imply that the motive is not really related to necessity push, but rather that other household members probably provide a positive role model.

### *4.2 Opportunity self-employment*

We now turn to the opportunity self-employed, i.e., to those who transition to self-employment from previous employment status. The same procedure has been applied and the results of the Fairlie decomposition are presented in Table 3.

**Table 3:** Contributions to the gap in opportunity self-employment between young and old

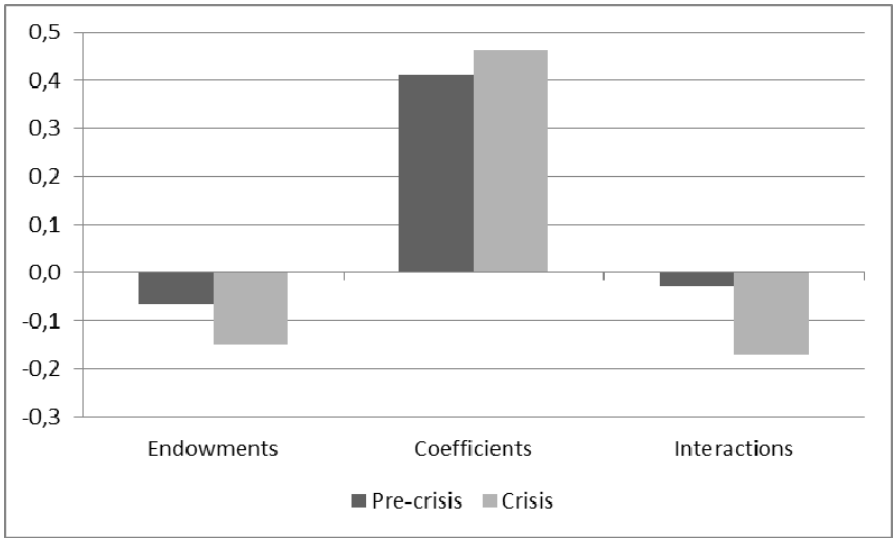
| | Pre-crisis period | Crisis period |
|---|---|---|
| Prediction young | 1.05 | 0.80 |
| Prediction old | 0.74 | 0.66 |
| Total estimated gap | 0.31 | 0.14 |
| Total explained (in % of gap) | 48.68 | -5.81 |
| Contributions to the gap (in % of total explained gap) | | |
| Male | -18.20*** | 19.59 |
| Widow | -5.94 | -194.10** |
| Married | 59.04 | -225.39 |
| Child_share | 62.33*** | -357.26** |
| Work_share | -7.07 | 120.76* |
| Spurb | - | -9.65 |
| Densurb | 8.36 | -593.65*** |
| Edu_medium | -96.84** | 3,046.34*** |
| Edu_high | 98.30*** | -1,706.64*** |

Note: *** denotes significance at 1 percent, ** at 5 percent and * at 10 percent level.
Source: Authors' estimates based on EU LFS.

The results display a decrease in opportunity self-employment for both population groups as well as a reduction in the gap between groups (whereas the necessity gap has increased). In this case, the gap is positive, i.e., youths exhibit larger opportunity self-employment. The variables used in the analysis explain almost 49 percent of the gap in the pre-crisis period. The largest contribution comes from the education variables. It seems that the differences in education between young and old population can explain why younger individuals are more likely to turn to self-employment out of opportunity. The analysis of the contributions to the gap in the crisis period again reveals that if the young and old had more similar characteristics, the gap would even be larger. Once more, the sign as well as the significance of explanatory variables change in the crisis period.

Blinder-Oaxaca decomposition shows a positive significant gap of 0.31 percent in the pre-crisis period that decreases to 0.14 percent in the crisis period and turns insignificant. So, in addition to the decrease of the opportunity gap between young and old during the crisis, the difference is no longer significant. Furthermore, the results in Table A3 show that only differences in coefficients in the crisis period turned out to be significant, while all other decomposition sections were relatively small and insignificant. Apparently, the returns to possessing the characteristics included in our model seem to be the most important in explaining the rather small (and insignificant) gap during the crisis period.

**Figure 4:** Blinder-Oaxaca decomposition of opportunity self-employment




Source: Authors' estimates based on EU LFS.

### *4.3 Differences between employment and self-employment predictors for the young during the crisis*

Previous analysis has confirmed our initial expectations that the crisis period entails important changes in employment and self-employment patterns. To further shed light on this period, we additionally investigate young persons who were unemployed a year ago and analyse which characteristics contribute to their decision whether to become self-employed or employees. We focus on the young since the initial data show that their unemployment rates are higher and employment rates lower than comparable indicators for the older population. Additionally, older unemployed persons have the chance to reach retirement age relatively sooner and withdraw themselves from the labour market. Furthermore, from the policy perspective, it is relatively unimportant whether the person is self-employed (unless she creates additional jobs with her entrepreneurial activity) or employed. The probit model using the same predictors is applied (additionally, age of the respondent was considered), and only marginal effects are shown in Table 4.

Although the self-employment model has a higher prediction rate, the sensitivity of the estimated model is zero percent. This is the result of the low share of self-employed in the sample, which is consequently highly unbalanced. In the case of predicting whether a young person will find a job, the sample is more balanced. So, even though the overall prediction rate is low, the estimated model is able to correctly classify at least some of the persons into both considered states, based on the analysed characteristics. Having in mind these sample characteristics, it comes as no surprise that more characteristics turn out to be significant in the case of predicting employee status.[14]

[14] One could also argue that there exists a problem of selection bias in this case, i.e., that young persons participating in the labour market have already been self-selected based on some (un)observed characteristics. However, we do not consider it to be an issue here since we focus on the differences between transition to employment and self-employment and already control for both individual and household characteristics.

**Table 4:** Predictors for young unemployed to become employees or self-employed after one year, crisis period

| Variables | Marginal effects at x-bar (robust standard error) | |
|---|---|---|
| | Self-employed | Employees |
| Male | 0.011 (0.003)*** | 0.010 (0.013) |
| Age | -0.000 (0.001) | -0.004 (0.002)** |
| Widow | 0.012 (0.019) | -0.123 (0.036)** |
| Married | 0.005 (0.006) | -0.072 (0.016)*** |
| Child_share | 0.044 (0.012)*** | 0.415 (0.046)*** |
| Work_share | 0.053 (0.006)*** | 0.956 (0.026)*** |
| Spurb | 0.005 (0.005) | -0.033 (0.015)** |
| Densurb | 0.008 (0.004)** | -0.039 (0.012)*** |
| Edu_medium | -0.010 (0.006)** | 0.077 (0.167)*** |
| Edu_high | -0.004 (0.005) | 0.216 (0.035)*** |
| Diagnostics | | |
| Number of observations | 5640 | 5640 |
| Log likelihood | -547.48 | -2325.06 |
| Prediction rate | 97.78 | 81.12 |
| Wald statistics | 96.10*** | 1496.97*** |
| Pseudo R2 | 0.09 | 0.28 |
| Hosmer-Lemeshow chi2(8) | 32.06*** | 61.55*** |

Note: *** denotes significance at 1 percent, ** at 5 percent and * at 10 percent level.
Source: Authors' estimates based on EU LFS.

It is interesting to note that even though male unemployed youths are not more likely to find employment, they are more likely to become self-employed. This result is in line with the argument that females are less prone to undertaking activities associated with higher risks. However, other studies suggest that the crisis might have had important effects on gender roles. By comparing TEA in 2012 and 2015, Singer et al. (2016) show that both for the age cohorts 18-24 and 25-34 this indicator has decreased for males, while for females it has actually increased for the age cohort 18-24. This issue certainly deserves additional research efforts, particularly so as the authors also report a significant increase in female TEA for the age cohort 35-44 and somewhat less in the age cohort 45-54 and 55-64.

It is also interesting that having high education (in comparison to lower secondary education or less) does not increase the likelihood that a person will become self-employed. At the same time, having upper secondary education actually decreases the probability of becoming self-employed. Both education variables are significant positive predictors for finding a job. It might be the case that employers consider education as a signal variable (related to the workers' potential productivity), while the decision of becoming self-employed is made based on personality traits. The share of working adults within a household, as a potential proxy for having access to higher family income, positively affects both the probability of employment and self-employment, with a stronger effect on the former. Similar applies to the variable indicating the share of children in the household.

An additional point of divergence is the area of living. It seems that persons living in densely populated areas are more likely to become self-employed. This is probably related to the foreseen business opportunities and also potentially to the access to necessary information (on funding

possibilities, for example). Persons are less likely to find employment both in sparsely populated areas as well as in densely populated areas (in comparison to intermediately populated ones). The reason for the former is probably related to the lack of demand, while the explanation for the latter could be found in increased competition due to high numbers of unemployed peers.

## 5 Conclusion

The analysis in this paper focuses on the differences in self-employment between young and old population in Croatia, in both the pre-crisis (2002-2007) and crisis (2008-2013) period. We have found that the type of self-employment influences these differences. A larger share of older population turns to self-employment as a necessity, while a larger share of younger population turns to self-employment out of opportunity. However, self-employment out of necessity is more common for both age-groups.

Crisis seems to have had adverse effects on both types of self-employment. In the case of necessity self-employment the gap between the young and the old has increased, while in the case of opportunity self-employment the gap has decreased. However, the percentage of population switching to self-employment has decreased in all cases in the crisis period. This evolution seems rational, since self-employment might be perceived as more risky than in the economic upsurge. Nevertheless, some theoretical predictions indicate the opposite, i.e., that becoming self-employed in a period of crisis is a way of escaping unemployment. Apparently, all those constraints that supressed “regular” employment in Croatia during the crisis affected self-employment as well.

Analysis of the underlying contributions to the youth-old self-employment gap formation depended on the basic set of predictors frequently used in the labour market outcomes analysis – demographic variables, elementary household information, and educational attainment. The results suggest that the main variables in explaining the gap in the pre-crisis period are family status variables for necessity self-employment and educational variables for opportunity self-employment. In the crisis period, differences in coefficients or the returns to possessing the characteristics included in our model seem to be the most important in explaining the gap, especially so in the case of opportunity self-employment.

As Caliendo and Kritikos (2012) summarize, in an ideal world researchers would have access to data that include personality characteristics and psychological traits, motivational factors and cognitive skills. So one possible future extension of the analysis is also to address, using additional data sources, the issue of differences in personal traits guiding the self-employment decisions in crisis versus economic boom, or between the young and the old. Comparison of Croatia with some other EU member-states in this respect would also provide further insights into the portrayal of Croatia as a relatively non-entrepreneurial country.

Nonetheless, a relatively more pressing need for such analysis is related to the policy issue. Croatia follows EU guidelines in promoting self-employment and employment of young persons, but also in prolonging the working life of the older generations. The guidelines have been transformed into specific policy measures and instruments. Yet, the data have shown that the unemployment rate of

the young has increased and the self-employment rate has decreased in the crisis period, which brings up the question of the effectiveness of policy measures in place. The ongoing quest for an appropriate policy mix provides a lucrative venue for future research endeavours.

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**Appendix**

**Table A1:** Data definitions

| Variable | Description |
|---|---|
| Male | =1, if respondent is male |
| Widow | =1, if respondent is widowed, divorced or legally separated |
| Single | =1, if respondent is single |
| Married | =1, if respondent is married |
| Densurb | =1, if respondent resides in densely populated area |
| Inturb | =1, if respondent resides in intermediately populated area |
| Spurb | =1, if respondent resides in sparsely populated area |
| Self | =1, if respondent is self-employed (regardless of whether having employees or not) |
| Child_share | =share of children in the household |
| Work_share | =share of employed persons in the household |
| Edu_low | =1, if respondent achieved lower secondary education |
| Edu_medium | =1, if respondent achieved upper secondary education |
| Edu_high | =1, if respondent achieved third-level education |

**Table A2:** Probit estimates for Fairlie decomposition

| Variables | Estimated coefficients (standard errors) | | | |
|---|---|---|---|---|
| | Necessity | | Opportunity | |
| | Pre-crisis | Crisis | Pre-crisis | Crisis |
| Constant | -2.38*** (0.11) | -3.11*** (0.12) | -2.61*** (0.12) | -2.41*** (0.11) |
| Male | 0.21*** (0.07) | 0.37*** (0.06) | 0.18*** (0.06) | 0.20*** (0.05) |
| Widow | 0.57*** (0.15) | 0.50*** (0.12) | 0.04 (0.11) | -0.24* (0.13) |
| Married | 0.28*** (0.07) | 0.23*** (0.06) | -0.07 (0.06) | -0.02 (0.05) |
| Child_share | -0.52*** (0.15) | 0.89*** (0.24) | 0.55*** (0.16) | 0.49** (0.21) |
| Work_share | 1.84*** (0.12) | 2.03*** (0.12) | 0.49*** (0.11) | 0.34*** (0.10) |
| Spurb | -0.43 (0.49) | 0.08 (0.08) | - | 0.03 (0.07) |
| Densurb | -0.13* (0.07) | -0.04 (0.07) | -0.04 (0.06) | -0.25*** (0.06) |
| Edu_medium | -0.25*** (0.08) | -0.26*** (0.07) | -0.19*** (0.07) | -0.39*** (0.06) |
| Edu_high | -0.59*** (0.16) | -0.17 (0.11) | -0.36*** (0.10) | -0.41*** (0.08) |
| Diagnostics | | | | |
| N | 7406 | 10122 | 22098 | 33843 |
| LogL | -875.86 | -999.83 | -1094.18 | -1371.79 |
| LR chi2 (9) | 318.76*** | 403.18*** | 54.15*** | 120.03*** |
| Pseudo R2 | 0.15 | 0.17 | 0.02 | 0.04 |

Note: *** denotes significance at 1 percent, ** at 5 percent and * at 10 percent level.

Source: Authors' estimates based on EU LFS.

**Table A3:** Blinder-Oaxaca decomposition

| Variables | Exponentiated coefficients in percentage (standard errors) | | | |
|---|---|---|---|---|
| | Necessity | | Opportunity | |
| | Pre-crisis | Crisis | Pre-crisis | Crisis |
| Endowments | | | | |
| Male | -0.153*** (0.001) | -0.045 (0.000) | -0.009* (0.000) | 0.018** (0.000) |
| Single | 1.875*** (0.006) | 0.884** (0.004) | -0.114 (0.002) | -0.017 (0.001) |
| Widow | -0.109 (0.001) | -0.154** (0.001) | -0.022 (0.000) | 0.010 (0.000) |
| Married | 2.200*** (0.004) | 1.463*** (0.002) | 0.032 (0.001) | -0.081 (0.001) |
| Child_share | 0.282 (0.003) | -0.191 (0.002) | 0.122** (0.001) | 0.012 (0.000) |
| Work_share | 3.489*** (0.003) | 2.753*** (0.002) | -0.017*** (0.000) | -0.004* (0.000) |
| Spurb | 0.003 (0.000) | -0.017 (0.000) | -0.000 (0.000) | -0.001 (0.000) |
| Inturb | 0.006 (0.001) | 0.015 (0.000) | 0.061 (0.001) | 0.024*** (0.000) |
| Densurb | 0.127 (0.001) | 0.022 (0.000) | -0.019 (0.001) | 0.030*** (0.000) |
| Edu_low | -0.174 (0.001) | -0.070 (0.001) | -0.064*** (0.000) | -0.087*** (0.000) |
| Edu_medium | 0.069 (0.001) | -0.092 (0.001) | -0.070** (0.000) | -0.081*** (0.000) |
| Edu_high | 0.006 (0.000) | 0.005 (0.000) | 0.035* (0.000) | 0.026*** (0.000) |
| Total | 7.809*** (0.011) | 4.626*** (0.007) | -0.068 (0.002) | -0.150 (0.002) |
| Coefficients | | | | |
| Constant | 0.340 (0.023) | 0.957 (0.010) | 0.822 (0.009) | 0.243 (0.004) |
| Male | -0.559 (0.005) | -0.746** (0.004) | -0.090 (0.002) | 0.010 (0.001) |
| Single | -0.423*** (0.001) | -0.216** (0.001) | -0.005 (0.000) | 0.010 (0.000) |
| Widow | 0.100 (0.002) | -0.056 (0.002) | 0.019 (0.001) | -0.051 (0.001) |
| Married | 3.379*** (0.009) | 1.774*** (0.006) | -0.067 (0.003) | 0.271 (0.003) |
| Child_share | -0.326** (0.001) | 0.258*** (0.001) | -0.042 (0.003) | 0.019 (0.000) |
| Work_share | -3.793*** (0.004) | -3.284*** (0.003) | -0.430 (0.003) | 0.095 (0.003) |
| Spurb | -0.021 (0.000) | -0.192* (0.001) | -0.000 (0.000) | 0.038 (0.000) |
| Inturb | 0.675 (0.009) | -0.402** (0.002) | -0.084 (0.003) | -0.110** (0.001) |
| Densurb | 1.684 (0.012) | 0.728*** (0.002) | 0.198 (0.005) | -0.001 (0.001) |
| Edu_low | 0.656** (0.003) | 0.090 (0.002) | -0.013 (0.001) | 0.143*** (0.001) |
| Edu_medium | -0.356 (0.004) | -0.009 (0.003) | 0.185* (0.001) | -0.173* (0.001) |
| Edu_high | -0.092 (0.001) | -0.021 (0.001) | -0.080 (0.001) | -0.121** (0.001) |
| Total | 1.117 (0.007) | -1.193* (0.006) | 0.410 (0.003) | 0.462** (0.002) |
| Interactions | | | | |
| Male | 0.070 (0.001) | 0.023 (0.000) | 0.003 (0.000) | 0.011 (0.000) |
| Single | -3.369*** (0.008) | -1.343** (0.006) | -0.063 (0.003) | 0.121 (0.002) |
| Widow | -0.092(0.002) | 0.052 (0.002) | -0.017 (0.001) | 0.045 (0.001) |
| Married | -2.365*** (0.006) | -1.352*** (0.005) | 0.043 (0.002) | -0.204 (0.002) |
| Child_share | -0.761** (0.003) | 0.459*** (0.002) | -0.087 (0.001) | 0.022 (0.000) |
| Work_share | -2.110*** (0.002) | -1.771*** (0.002) | 0.008 (0.000) | -0.001 (0.000) |
| Spurb | -0.008 (0.000) | 0.016 (0.000) | -0.000 (0.000) | -0.002 (0.000) |
| Inturb | 0.111 (0.001) | -0.032* (0.000) | -0.027 (0.001) | -0.029** (0.000) |
| Densurb | -0.217 (0.002) | -0.030 (0.000) | -0.036 (0.001) | 0.000 (0.000) |
| Edu_low | -0.363** (0.002) | -0.052 (0.001) | 0.008 (0.000) | -0.108*** (0.000) |
| Edu_medium | -0.137 (0.001) | -0.002 (0.001) | 0.098* (0.001) | -0.071* (0.000) |
| Edu_high | 0.005 (0.000) | -0.007 (0.000) | 0.043 (0.000) | 0.045** (0.000) |
| Total | -8.925*** (0.011) | -3.992*** (0.008) | -0.027 (0.003) | -0.171 (0.003) |

Note: *** denotes significance at 1 percent, ** at 5 percent and * at 10 percent level.

Source: Authors' estimates based on EU LFS.

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