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EU-Mediterranean youths in the crisis: substitution vs. income effect

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ABSTRACT

The economic crisis that erupted in 2008 has had particularly adverse effects on the youth labour market outcomes in the European Union Mediterranean economies. So far little evidence is available on the reaction of the young to the adverse conditions their household members faced due to the crisis. Youths could have decided to prolong or stay in education instead of participating on the labour market (substitution effect) or they could have decided to increase their participation (income effect). By using the EU Labour Force Survey data, we explore the probability of young adults changing their labour market status from (i) inactivity to employment, (ii) inactivity to unemployment, (iii) employment to education, and (iv) unemployment to education in response to labour market outcome changes in their households: (i) both parents losing the job; (ii) one of the parents losing the job, (iii) both parents becoming inactive, (iv) one of the parents becoming inactive, and (v) both parents remaining unemployed. Estimated probit models include seven EU Mediterranean countries during the 2006–2015 period. Results support both income and substitution effect, without clear identification of the dominance of one effect over the other.

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Introduction

The literature foresees different effects of economic crisis on individuals' labour market effort. The countercyclical added-worker effect represents increased labour supply in response to household member's (partner's) earnings decrease. The procyclical discouraged-worker effect represents decreased labour supply as a consequence of previous unsuccessful job search efforts. Both effects are well researched and documented on individual and partner level (see, e.g. Stephens [2002]; Starr [2014] for added-worker effect and Kodrzycki [2000]; Benati [2001] for discouraged worker effect). However, little evidence is available on the reaction of the young to the adverse conditions their households' members (parents) have faced due to recession.

Recent crisis has had strong adverse effects on the European youth labour market outcomes and prospects (Chung, Bekker, and Houwing 2012; O'Higgins 2012; Eichhorst, Hinte, and Rinne 2013; Bruno, Marelli, and Signorelli 2014; Caporale and Gil-Alana 2014; Tomić

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2017). This is especially true for the South-European, i.e. Mediterranean countries, where youth unemployment skyrocketed after 2009 (Madsen et al. 2013; Eichhorst and Neder 2014; Boot, Wilson, and Wolff 2016; Dietrich and Möller 2016). Hence, the main aim of this paper is to explore how youth reacted to negative effects in the Mediterranean economies of the EU. Besides high youth unemployment, these countries share many institutional, sociological and cultural features, which translate into their specific welfare systems (Rhodes 1996; Walther 2006; Gal 2010; Madsen et al. 2013; Chevalier 2016) that could affect young individual's decision making process. As Ayllón (2015) points out, welfare regime theory is a useful framework for analysis of transitions to adulthood in Europe, as they differ with respect to associated educational systems, regulation of the labour market, level of social protection (Lundahl and Olofsson 2014). Chevalier (2016) further explains that the welfare state regimes differ in the way they prepare young persons for labour market entry – either education system aims at providing some skills to every young person ('skills for all – learn first' strategy) or provides skills only to part of the youth population ('skills for the best – work first' strategy).

Building on this perspective, we assume that there are two possible reactions of youths to adverse labour market conditions:

- (1) they could have decided to prolong or stay in education instead of participating on the labour market and thus increase their chances for future employment (when the economy recovers) or
- (2) they could have decided to increase their participation on the labour market because the recession affected their household income when other (older) household members were left without their job.

In the first case we have the substitution effect, i.e. young people are substituting labour market participation (and potential unemployment) for education. The main assumption here is that the education may be more attractive when the youth labour market is weak (Clark 2011). This can also be called the human capital effect since by staying in education youths are actually increasing their knowledge and skills. In a way, this also represents the discouraged worker effect as young people abstain from labour market participation in harsh economic conditions. The second case represents the so-called income effect: due to lower income in the household more youths decide to search for a job, i.e. participate on the labour market. This effect is usually known as the added-worker effect.

The main contribution of the paper should be found in the analysis of youths' responses to negative effects the crisis had on their families. To the best of our knowledge, this is the first attempt to analyse these effects in the case of the recent crisis. Since all of the countries in the analysis – Croatia, Cyprus, France, Greece, Italy, Portugal and Spain – have above EU-average youth unemployment rate, seeking deeper insight into youth labour market transitions is also important from a policy perspective.

The paper adopts the following structure. Next section provides brief literature review on the subject, focusing on the response of youths to tough labour market conditions. In Section 3 we describe data used, sampling strategy and the methodology for the empirical assessment. Section 4 presents the main results of the analysis together with a discussion, while the final section provides concluding remarks.

Literature review

Some of the recent literature suggests that the recession could have brought to a decline in the participation rate on the labour market (e.g. Verick [2011]; Dagsvik, Kornstad, and Skjerpen [2013]).

Barakat et al. (2010), for example, discuss the influence of the recent crisis on European labour market perspectives and educational attainment decisions and indicate that the demand for education has increased. It appears that as individuals tried to circumvent the tight labour market, the supply of education has decreased because of the increased pressures on federal budgets in most European countries (Barakat et al. 2010). Further, by assessing the impact of the youth labour market on enrolment in post-compulsory education in the UK Clark (2011) concludes that local youth labour market has a large impact on enrolment rates and is capable of explaining why enrolment has been broadly flat since the mid-1990s.

Bergin, Kelly, and McGuinness (2015) demonstrate that education has become an increasingly important factor in supporting unemployment exits for youths and reducing the risk of unemployment since the recession. Conefrey (2011) has previously found that the majority of young people who exited the labour force after the recession in 2008, and who remained in Ireland, returned to education.

Another option the youth could have considered-added-worker effect-is present in labour economics literature for a long time (see Humphrey [1940]; Woytinsky [1940]; Lundberg [1985]; Maloney [1991]; Stephens [2002]). It usually refers to an increase in the labour supply of (married) women when their husbands become unemployed. In this way women are identified as secondary workers within the household. In the present paper youths are considered as 'secondary' workers who decide to participate on the labour market when the household income decreases due to job loss of another (primary worker) household member. That is, they substitute their leisure/education/inactivity for work because of the drop in the household income. The added-worker effect results when the income effect dominates the substitution effect in an individual's decision whether or not to participate in the labour market. Hence, although the prospects of earnings (and employment) are decreasing in the time of the recession, the negative income effect is stronger than 'the relative decline in the expected wage rate of the secondary worker'. Also, this would mean that the expected welfare benefits of the household are smaller than the potential earnings of the secondary worker.

Earlier studies show that most of the burden of the adjustment, in terms of increased labour force participation, falls on wives rather than children (Skoufias and Parker 2006). Additionally, Bentolila and Ichino (2008) find no evidence of a reaction of children's labour supply to male head of the household's job loss. On the other hand, Becker et al. (2010), on a panel of 13 EU countries from 1983 to 2004, show that higher youth job insecurity lowers the probability of moving out of parental home, whereas higher parental job insecurity raises it.

Other studies argue that there is no significant added-worker effect. Cho and Newhouse (2013), for instance, examine the impact of the Great Recession on different types of workers in 17 middle-income countries and show that there is little indication of strong added-worker effects, suggesting that the informal sector played a relatively small role as a buffer for the shock. However, they do show that youths 'generally suffered the

largest adverse impacts on employment, unemployment, and sector and status of employment, particularly relative to older adults' (Cho and Newhouse 2013, 32). They also show that there is little evidence of large earnings reductions for youths; suggesting that adjustments for youths mainly took the form of employment reductions. Additionally, they indicate that less access to labour market information might have led youths to postpone adjusting their reservation wages, and that they have most likely used their parents' supported during the crisis (Cho and Newhouse 2013).

However, not only individual factors are at play here. Institutional factors affect labour market efficiency, while individuals' decision making process is under influence of alternative possibilities within different institutional settings. Namely, institutions can enable certain types of young persons' transitions and discourage other. Similarly, welfare system is related to the consequences of parent's transition to unemployment or inactivity. Welfare system regimes, together with cultural features like 'shock-absorbing family relations' (Moreno and Mari-Klose 2013), have been segregated on many occasions as specific for the Southern part of Europe or, more precisely, Mediterranean countries (Rhodes 1996; Bonoli 1997; Gal 2010).

According to Gal (2010), these countries¹ are characterised by fewer resources, relatively low levels of social expenditure, weak state support for the poor, a major role for the family and religious organisations in the provision of welfare, relatively low levels of labour market participation (particularly among women), and overall limited success in alleviating poverty and overcoming social and economic gaps. O'Higgins (2012), additionally, while arguing that temporary contracts have become the dominant contract type for new employment of young people, emphasises the problem of segmented labour markets in Mediterranean countries. To provide additional perspective, we focus our analysis seven EU Mediterranean countries that share common geographical, cultural, economic and institutional characteristics, into our analysis.

Data and methodology

Sampling strategy and definition of variables

In order to ensure data comparability across the countries, empirical analysis relies on the EU Labour Force Survey (LFS) yearly data. The following countries have been analysed: Croatia, Cyprus, France, Greece, Italy, Portugal, and Spain.² These countries share geographical position in the Mediterranean, important sociological features,³ and have experienced more than (EU) average youth unemployment rate.⁴

In this paper, we analyse the decade between 2006 and 2015, encompassing the economic crisis as well as periods of economic growth. The duration and depth of the crisis varies: in France negative GDP growth rates have been recorded only for the year 2009, while Croatia experienced continuous 6-year period (2009–2014) of negative growth (see Table A1 in Annex).

It is important to mention that in this paper we rely on anonymised individual harmonised EU-LFS data. Since there is no panel or longitudinal component in the data, we use self-reported labour market status in the previous year to define transitions (for both parents and youths).⁵ The labour market statuses are mutually exclusive, which means that, for example, a person cannot be both employed and a student at the same time. Additionally, the dataset enables identification of persons belonging to the same

household which means it is possible to match the youth with their parents, as long as they live in the same household.

In order to analyse the response of youths to different changes in parents' labour market status, we specify following transitions for parents:

- both parents losing the job (sample1),
- one of the parents losing the job (sample2),
- both parents becoming inactive (sample3),
- one of the parents becoming inactive (sample4),
- both parents remaining unemployed (sample5).

Figure 1 shows the defined transitions of parents living in the same household with a young person⁶ aged 15–29 in seven EU Mediterranean countries in the period 2006–2015. Besides the increase of the sample where both parents stay unemployed as of the start of the crisis, only the transitions where one of the parents became unemployed / inactive seem relevant for further analysis as the frequency of cases when both of the parents became unemployed / inactive seems negligible.

Young person is the one aged 15–29 and we specify their transitions as follows:

- (1) Substitution effect has occurred if a person substitutes labour market participation for education. We specify two dummy variables which take value 1 if a young person has made the transition:
 - from employment to education (youth1),
 - from unemployment to education (youth2).
- (2) Income effect has occurred if a person has increased labour market participation. To explore this effect, we specify two additional dummy variables which take value 1 if a young person has made the transition:
 - from inactivity to employment (youth3),
 - from inactivity to unemployment (youth4).

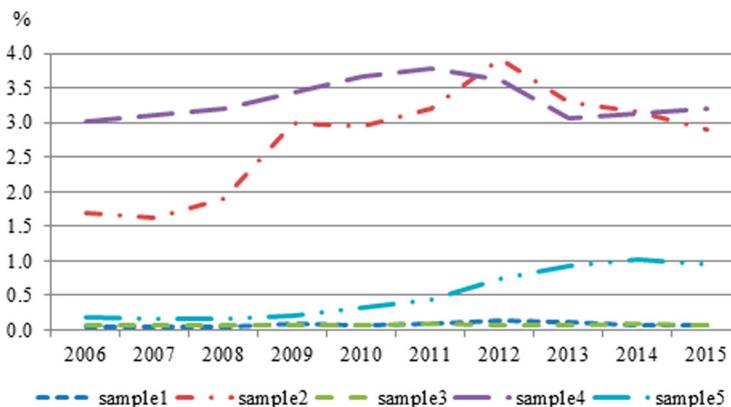


Figure 1. Transitions of parents in EU Mediterranean countries. Source: Authors' calculations based on EU-LFS data.

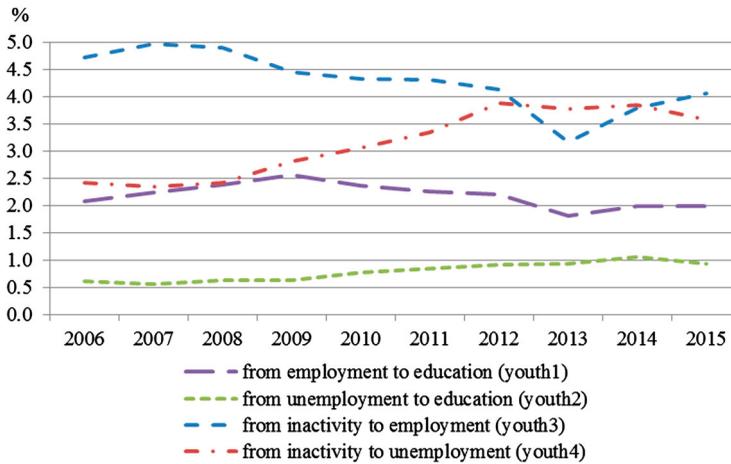


Figure 2. Transitions of youths (15–29) in EU Mediterranean countries. Source: Authors' calculations based on EU-LFS data.

Hence, we have taken into account job search behaviour of youth individuals, both in relation to the external shock (crisis) and regarding the households' income level changes. The transitions of youth (15–29), identified as living with their parents,⁷ are presented in Figure 2. On the one hand we look at the composition of youth population at a point in time and, on the other, at changes of their labour market status over time.

The frequency of youth transitions from activity to education (substitution or discouraged worker effect) seems to be lower than the frequency of transitions from inactivity to activity (income or added-worker effect). As of the start of the crisis, there is a noteworthy increase of transitions from inactivity to unemployment, but also a decrease of transitions from inactivity to employment, thus it is hard to determine if an added-worker effect has also increased. Similarly, it is not straightforward to establish presence of the discouraged worker effect since a slight increase of the transitions from unemployment to education has been levelled-off by the decrease of the transitions from employment to education during the crisis.

Estimation strategy and data description

Estimation strategy is split in two segments. First we estimate the probability of observing a transition with respect to those remaining in the initial state for each young individual on the basis of a series of individual and household characteristics (X), and depending on the change of labour market status of their parents (*sample* _{i}):

$$\Pr(y = 1) = \Phi(X'\beta + \text{sample}'_i\gamma) \quad (1)$$

This type of estimates resembles traditional approach in added-worker effect in gender-related literature (e.g. Stephens [2002]). Predictors contributing to the transition of the young person (vector X variables) are the following:⁸

- Age of the young person. Three dummy variables for the following 5-year age cohorts are included: 15–19, 20–24, and 25–29.
- Gender: a dummy variable which equals 1 if a person is male.
- Marital status.
- Education: three dummy variables specifying whether a person has low, medium or high level of education.
- Nationality: a dummy variable which equals 1 if a person belongs to the major nationality in a country.
- Degree of urbanisation.
- Share of dependent (<15 & >64) persons in the household.
- Share of (adult) persons in working relationship in the household.
- Country and year dummies.

The second segment of the empirical strategy looks closely into the characteristics of the youths who have made transitions, in cases when their parents have changed their labour market status. Thus, we again estimate probit models with dependent variable representing youth transitions, the same list of independent variables (without dummy variable for parents' transition), but on a restricted sample based on the specific transition of parents we are interested in. So, in this segment of the analysis we are interested to find out what are the significant predictors for a person to make a specific transition within a group of families where parents share similar labour market outcomes. Specifically, we estimate the following equation:

$$\Pr(y = 1 | \text{sample}_i) = \Phi(X' \beta) \quad (2)$$

Results and discussion

As previously explained, estimation strategy consists of two segments, which are presented and discussed in this section.

In the first segment, we utilise the whole sample of youth population (15–29). The dependent variable is a specific transition of youths (youth1, youth2, youth3 or youth4), the independent list of variables has been previously described and amended with additional dummy variable representing observed transition of the parents (sample1, ... , sample5). We consider estimates for each type of youth transitions in focus, depending on the included additional dummy for the transition of the parents. This yields 20 different probit specifications. Since in this segment of the analysis we are only interested whether there is a relationship between the likelihood that a young person will make transition in response to their parents' transition, in [Table 1](#) we present only the estimated marginal effects of *sample_i* variable.⁹

Results in [Table 1](#) show that in all cases we have identified positive (and significant) relationship between the parents' transition towards unemployment / inactivity and youth transition from employment to education (substitution effect). The effect is the strongest when both parents lose a job. In a similar way, we have also identified significant income effect, also the strongest when both parents lose a job.¹⁰ Thus, it seems that when both of the parents in a household loose a job, youths are compelled either to react by finding a job if previously being inactive (a short-term reaction), or

Table 1. Marginal effects of parents' transitions on youth transitions in Mediterranean countries, 2006–2015.

Parents' transition	Youth transition			
	Employment to education (Y1)	Unemployment to education (Y2)	Inactivity to employment (Y3)	Inactivity to unemployment (Y4)
Both parents lose job (S1)	0.024*** (0.007)	−0.001 (0.004)	0.031*** (0.011)	−0.001 (0.008)
One parent loses job (S2)	0.010*** (0.001)	0.001 (0.001)	0.027*** (0.002)	0.004*** (0.001)
Both become inactive (S3)	0.017*** (0.005)	−0.006*** (0.002)	0.032*** (0.005)	−0.021*** (0.008)
One becomes inactive (S4)	0.013*** (0.001)	−1.77e−06 (0.001)	0.026*** (0.001)	−0.009*** (0.001)
Both remain unemployed (S5)	0.012*** (0.003)	0.0011 (0.0011)	0.029*** (0.003)	−0.004 (0.003)

Note: Robust standard errors in parentheses.

Source: Authors' calculations based on EU-LFS data.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

by returning to education from work (in order to enhance long-term labour market prospects).

The transition to unemployment from inactivity should reveal increased search efforts, i.e. income effect, but at the time of interview not rewarded with job placement. However, this pattern has been found only in the case when one of the parents loses a job. Actually, when one of the parents loses a job, the probability that a child will turn to labour market (and successfully find a job or become unemployed) is always positive – indicating a clear added-worker effect. However, when both parents become inactive (which could also indicate discouraged worker effect), their children are less likely to (unsuccessfully) participate on the labour market or to return to education if they were unemployed. This might indicate a selection effect as well, since for the same type of transitions of parents we observe similar effects in the case of both income and substitution effects: positive effect on youth transitions from inactivity to employment and from employment to education, and a negative one on transitions from inactivity to unemployment and unemployment to education. This is precisely what we want to investigate further.

The second estimation strategy is concerned with identifying significant predictors for youth transitions, if we know that the parents have already made transition. For each previously identified type of parents' transition, four estimates related to the transition of youths have been considered. The results presented below are focused only on the two cases of parents' transition: when one of the parents loses a job (Table 2) and when one of the parents becomes inactive (Table 3), given the rather low frequency of other transitions of parents observed in our data (see Figure 1). Both tables present marginal effects of the estimates.¹¹

The age cohorts have clear distinction between substitution and income effect when one of the parents becomes unemployed/inactive. While older age cohorts (with respect to those aged 15–19 years) are more likely to make the transition from unemployment to education, they are less likely to become active on the labour market.

In the first case (substitution effect) it seems reasonable that older age cohorts have already participated on the labour market and if unemployed at the time of worsening economic conditions they return to education in order to improve their human capital.

Table 2. Marginal effects of youth transition estimates if one of their parents lost a job (Sample 2).

Variable	Youth transition			
	Employment to education (Y1)	Unemployment to education (Y2)	Inactivity to employment (Y3)	Inactivity to unemployment (Y4)
Age 20–24	0.005* (0.003)	0.016*** (0.002)	–0.009*** (0.003)	–0.011* (0.006)
Age 25–29	0.006 (0.004)	0.018*** (0.003)	–0.039*** (0.004)	–0.061*** (0.009)
Male	0.004* (0.002)	–0.002 (0.002)	–0.004* (0.002)	0.004 (0.005)
Married	0.008 (0.015)	n/a	–0.009 (0.008)	–0.007 (0.027)
Nation	–0.001 (0.005)	0.001 (0.003)	0.010** (0.005)	–0.006 (0.009)
Educ. medium	0.016*** (0.003)	–0.007*** (0.002)	0.026*** (0.003)	0.046*** (0.006)
Educ. high	0.017*** (0.004)	–0.004 (0.003)	0.038*** (0.004)	0.090*** (0.008)
Share dep. HH	–0.003 (0.007)	–0.017** (0.007)	0.021*** (0.007)	–0.045** (0.018)
Share work HH	0.054*** (0.007)	–0.016*** (0.004)	0.117*** (0.007)	–0.120*** (0.012)
Urb. intermed.	–0.002 (0.002)	0.001 (0.002)	–0.001 (0.002)	–0.002 (0.005)

Note: Robust standard errors in parentheses.

Source: Authors' calculations based on EU-LFS data.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

For those who are already in employment, returning to education makes less sense, since there is additional need for the income they earn. The results also indicate that if they were inactive (with one of the possible stages being still in education), they are less likely to become active – either unemployed or employed. Since this is significant for older age cohorts – even those aged 25–29 – we believe that it indicates deliberate longer attachment to education in times of adverse conditions on the labour markets.

Higher levels of education are positive predictors for the income effect in both cases – when one of the parents loses a job (Table 2) or becomes inactive (Table 3). It seems that highly-educated children are more willing to exert additional effort and seek employment if one of the parents becomes unemployed/inactive, whether this results in successful transition from inactivity to employment or unsuccessful to unemployment. In both cases, there seems to be pronounced income or added-worker effect.

When considering returning to education, the effect of higher education level is different. It is interesting to note that higher education attainment is positively associated with return to education from previous work experience, but negatively associated with previous unemployment. In the first case, it seems that those with higher education are more likely to see long-term benefits of additional education, when one of the parents becomes unemployed or inactive. However, an unemployed youth whose parent loses

Table 3. Marginal effects of youth transition estimates if one of the parents became inactive (Sample 4).

Variable	Youth transition			
	Employment to education (Y1)	Unemployment to education (Y2)	Inactivity to employment (Y3)	Inactivity to unemployment (Y4)
Age 20–24	0.018*** (0.004)	0.013*** (0.003)	–0.018*** (0.003)	–0.005 (0.004)
Age 25–29	0.017*** (0.004)	0.013*** (0.003)	–0.053*** (0.004)	–0.020*** (0.004)
Male	–0.003 (0.003)	–0.003* (0.001)	0.0008 (0.002)	0.004* (0.002)
Married	–0.027** (0.011)	–0.007 (0.009)	–0.032*** (0.011)	0.003 (0.020)
Nation	0.003 (0.011)	–0.001 (0.004)	0.015* (0.008)	–0.002 (0.008)
Educ. medium	0.016*** (0.004)	–0.003 (0.003)	0.035*** (0.003)	0.029*** (0.003)
Educ. high	0.019*** (0.004)	–0.002 (0.003)	0.066*** (0.004)	0.056*** (0.004)
Share dep. HH	0.010 (0.008)	–0.006 (0.006)	0.041*** (0.008)	–0.020** (0.008)
Share work HH	0.054*** (0.0071)	–0.020*** (0.005)	0.147*** (0.006)	–0.092*** (0.005)
Urb. intermed.	–0.002 (0.003)	–0.002 (0.002)	–0.005** (0.002)	0.004* (0.002)

Note: Robust standard errors in parentheses.

Source: Authors' calculations based on EU-LFS data.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

a job (or becomes inactive) is less likely to participate in further education, the higher the educational attainment achieved, thus questioning the work of the substitution effect.

Higher share of working household members is significant for both substitution and income effects. In the first case, it is a positive predictor for returning to education from previous work and a negative for making transition from unemployment to education. In the second case, it is a positive predictor for making transition from inactivity to employment, but a negative one when the transition is to unemployment. The results are very similar for families when one of the parents loses a job or when one of the parents becomes inactive.

It could be argued that even when one of the parents loses a job, higher share of other working household members provides a certain safety net enabling youths to return to education or that higher share of other working household members can either provide a role model (capturing a certain demonstration effect) or enable easier job placement through the network of working colleagues. Negative link between the share of working household members with youth transition from unemployment to education and from inactivity to unemployment could be attributed to the safety net explanation, since it seems that other household members are expected to contribute to either keeping the unemployment or inactivity status of the youth.

Added-worker (income) effect seems to be present also when there is higher share of dependent household members. However, it is significantly positive for transition to employment and significantly negative for transition to unemployment. So, there seems to be a clear earning pressure related to job placement and not simply by increasing the job-search effort. In the case of transition to education it has a negative effect thus indicating relative pressure from household members to contribute to family income. However, this is significant only in the case of transition of youths from unemployment to education when one of the parents loses a job.

As for the nationality, degree of urbanisation of their living area or their marital status there are no identified important differences in children behaviour in the case one of the parents loses a job (Table 2). However, when one of the parents becomes inactive, it seems that if a child is already married it will have a lower probability to transition from employment to education (substitution effect) and from inactivity to employment (income effect). In the first case, this could be explained by the pressure from household members to contribute to family income, as in the case of the share of dependants in the household. The second case is potentially more interesting as it would suggest either relative wealth of these families or alternative coping strategies. Unfortunately, LFS dataset does not enable deeper discussion of this case.

Home nationality seems to positively affect only youth transition from inactivity to employment when one of the parents transitions into inactivity, while lower degree of urbanisation appears to lower probability of transitioning from inactivity to employment and increase the probability of changing labour market status from inactivity to unemployment, conditioned that one of the parents becomes inactive. The latter could be attributed to more job offers in more densely populated areas.

While in the case when one of the parents loses a job, males have higher probability to transition both from employment to education and from inactivity to employment, in the case when one of the parents becomes inactive, same variable is significant and negative in youth transition from unemployment to education and significant and positive in youth

transition from inactivity to unemployment. This means that in families where one of the parents becomes unemployed female children will have higher probability of becoming employed (income effect), while male children will more likely return from employment to education (substitution effect). However, if one of the parents becomes inactive, female children will more likely return to education from the labour market, i.e. unemployment (substitution effect), while male children will have higher probability of participating in the labour market by searching for a job (income effect).

Looking at all presented results, similarities in youth transitions from employment to education or from inactivity to employment can be observed across individuals in different countries, i.e. have many common characteristics, irrespective of the change of labour market status of their parents. Hence, it is hard to determine whether income or substitution effect dominate in the EU Mediterranean countries.

Conclusions

Recent economic crisis has had profoundly adverse effects on the youth in Southern Europe. At the same time, sociological studies report that traditional Mediterranean familism is disappearing, implying certain loss in traditional safety net. In that context this paper explored whether the labour market transitions of youth during the latest crisis were related to the transitions of their parents.

Empirical results have confirmed that for the group of seven EU Mediterranean countries the labour market outcomes of parents exert influence on the labour market transitions of youth. We were able to establish this relationship due to the fact that there are still youths in their late 20-ies living in the same households as their parents. This Southern trait presents certain coping strategy that enables redistributing the costs of the economic crisis within the extended families. Specifically, we have identified positive relationship between the parents' transition towards unemployment/inactivity and youth transition from employment to education. The effect is the strongest when both parents lose a job. In a similar way, we have also identified significant income effect or increased labour market participation, also the strongest when both parents lose their jobs. In terms of potential policy actions, it should be taken into account that welfare systems in analysed countries are frequently not considering youth living with their parents as eligible for social benefits and actually support skill-acquiring strategies as measures to increase job finding prospects.

Focusing on families where one of the parents either loses a job or becomes inactive, we have found that the share of other working household members is the most important predictor of youths' transitions. This indicates a common coping strategies and share of responsibilities within this type of households. Also, our study indicates that traditional gender roles have not disappeared completely.

For example, in families where one of the parents becomes unemployed female children will have higher probability of becoming employed (income effect), while male children will more likely return from employment to education (substitution effect). This implies that the choice for the better longer terms prospects and investing in human capital is still more likely reserved for male offspring. However, if one of the parents becomes inactive, female children will more likely return to education from the labour market, i.e. unemployment (substitution effect), while male children will have higher

probability of participating in the labour market by searching for a job (income effect). Regarding possible future policy actions, these results imply that there is a place for considering gender-specific active labour market policy measures as well as gender-specific skills-upgrading educational programmes. Our results imply that highly educated youths exhibit different behaviour patterns when faced with adverse labour market situation. Thus, general policy recommendation would be to additionally focus on the educational system support in the analysed countries. However, specific recommendations should also encompass analysis of the demand side of the labour market as well as specific educational system constraints in each country.

Evidently, there is still room for additional research on this topic. One of the possible venues can be related to the in depth analysis of the differences in the social systems of the analysed countries, which could have followed different paths as a result of fiscal constraints during the crisis. The richer context, encompassing not only family conditions but also social responses, could lead to more specific policy recommendations.

Notes

1. Eight Mediterranean countries (those examined here plus Israel, Malta and Turkey and minus Croatia and France).
2. Malta has been left out of the analysis due to specificities of its labour market, including youth labour market. Although youth unemployment increased during the crisis, the size of the youth unemployment rate in 2015 was half the size of the lowest youth unemployment rate in the analysed sample. This could be attributed to the relative resilience of Maltese labour market (Central Bank of Malta 2013). Also, the availability of the EU-LFS data for Malta goes back only to 2009, which means that we could not take into account the same period as for other (Mediterranean) countries.
3. Gal (2010), for example, states that religion, the centrality of the family, and the existence of various forms of clientelistic relationships in the political arena have much influence on the contemporary features of the welfare states in (eight) Mediterranean countries. Other contributions argue that Mediterranean is not as distinctive as it used to be (Andreotti et al. 2001; Moreno and Mari-Klose 2013).
4. See data in Table A1 in Annex. Cyprus is the exception here since the average youth (15–29) unemployment rate in the period 2006–2015 is somewhat lower than the EU28 average; however, since 2012 even in Cyprus youth unemployment rate is well above EU average.
5. This approach has been used in a number of other works that use the EU-LFS microdata, e.g. Madsen et al. (2013) or Ward-Warmedinger and Macchiarelli (2014).
6. Andreotti et al. (2001) emphasise the Southern Europe distinguishing feature - young adults in full time working relationship still living with their parents.
7. This means that both Figures 1 and 2 show a subpopulation (those who have made a specific transition within a year) of the same population, i.e. households with parents living with their children aged 15–29.
8. Details on the used data can be found in Table A2 in Annex.
9. Full set of estimates is available in supplemental online material.
10. However, one has to remember that the number of cases when both of the parents loose a job within a year is relatively small (Figure 1).
11. Full set of estimates is available in supplemental online material. Additionally, all the previously presented estimations assume that all youths live in the same household as their parents; however this might not be the case. This would mean that youths we are analysing here might be self-selected which would indicate that our results might be biased. In order to check if this might be the case, we have estimated our models on both the restricted (with defined households of youths living with their parents) and unrestricted samples. The

obtained results suggest that there are no significant differences between the two samples, thus confirming the robustness of our results (see supplemental online material).

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Annex

Table A1. Average GDP and unemployment in EU Mediterranean countries (2006–2015).

Country	GDP growth rate (%)	Youth (15–29) unemployment rate (%)	Adult (25–64) unemployment rate (%)
Croatia	0.0	25.3	11.1
Cyprus	0.4	15.6	7.9
France	0.9	16.7	7.5
Greece	–2.1	30.8	15.4
Italy	–0.5	22.1	7.7
Portugal	–0.1	20.1	10.7
Spain	0.5	29.9	16.6
EU28	1.0	15.8	8.0

Source: Eurostat.

Table A2. Descriptive statistics.

Sample Variable	15–29 total		sample1		sample2		sample3		sample4		sample5	
	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.
youth1	0.03	0.16	0.03	0.18	0.03	0.16	0.03	0.18	0.04	0.18	0.02	0.13
youth2	0.01	0.09	0.01	0.11	0.01	0.12	0.01	0.08	0.01	0.11	0.02	0.15
youth3	0.05	0.21	0.02	0.15	0.04	0.21	0.04	0.19	0.05	0.22	0.02	0.13
youth4	0.04	0.19	0.08	0.27	0.06	0.25	0.03	0.18	0.04	0.19	0.08	0.27
Age 15–19	0.42	0.49	0.56	0.50	0.49	0.50	0.28	0.45	0.33	0.47	0.46	0.50
Age 20–24	0.34	0.48	0.30	0.46	0.34	0.47	0.34	0.47	0.35	0.48	0.34	0.48
Age 25–29	0.23	0.42	0.13	0.34	0.16	0.37	0.38	0.49	0.32	0.47	0.20	0.40
Male	0.54	0.50	0.58	0.49	0.54	0.50	0.55	0.50	0.54	0.50	0.53	0.50
Married	0.01	0.09	0.01	0.11	0.01	0.10	0.03	0.17	0.01	0.10	0.01	0.11
Nation	0.95	0.21	0.75	0.43	0.86	0.35	0.90	0.31	0.95	0.22	0.85	0.36
Educ. low	0.43	0.50	0.61	0.49	0.54	0.50	0.36	0.48	0.39	0.49	0.58	0.49
Educ. med.	0.40	0.49	0.28	0.45	0.32	0.47	0.38	0.49	0.41	0.49	0.29	0.45
Educ. high	0.15	0.36	0.06	0.24	0.10	0.30	0.24	0.43	0.19	0.39	0.09	0.28
Dep. share	0.09	0.15	0.12	0.17	0.10	0.15	0.07	0.14	0.08	0.14	0.10	0.15

(Continued)

Table A2. Continued.

Sample Variable	15–29 total		sample1		sample2		sample3		sample4		sample5	
	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.	Mean	St.Dv.
Work share	0.47	0.25	0.09	0.15	0.26	0.21	0.18	0.19	0.31	0.21	0.08	0.14
Urb. dens.	0.43	0.49	0.43	0.50	0.44	0.50	0.42	0.49	0.42	0.49	0.40	0.49
Urb. inter.	0.57	0.49	0.57	0.50	0.56	0.50	0.58	0.49	0.58	0.49	0.60	0.49
Cyprus	0.01	0.08	0.01	0.08	0.01	0.09	0.01	0.08	0.01	0.07	0.00	0.06
Spain	0.26	0.44	0.58	0.49	0.46	0.50	0.29	0.46	0.27	0.44	0.61	0.49
Greece	0.07	0.25	0.09	0.28	0.06	0.24	0.07	0.25	0.06	0.23	0.12	0.33
Croatia	0.03	0.17	0.03	0.16	0.03	0.17	0.02	0.13	0.02	0.16	0.03	0.18
Italy	0.35	0.48	0.11	0.31	0.18	0.38	0.38	0.49	0.39	0.49	0.12	0.33
Portugal	0.06	0.24	0.09	0.28	0.08	0.27	0.04	0.19	0.04	0.20	0.05	0.22
France	0.22	0.42	0.11	0.31	0.19	0.39	0.19	0.40	0.21	0.41	0.05	0.22
yr2006	0.11	0.31	0.05	0.21	0.06	0.23	0.08	0.27	0.09	0.29	0.02	0.14
yr2007	0.11	0.31	0.04	0.19	0.05	0.23	0.14	0.35	0.10	0.30	0.02	0.15
yr2008	0.10	0.31	0.08	0.27	0.08	0.27	0.13	0.34	0.11	0.31	0.02	0.15
yr2009	0.10	0.30	0.21	0.40	0.14	0.34	0.07	0.25	0.11	0.31	0.06	0.23
yr2010	0.10	0.30	0.11	0.31	0.12	0.32	0.10	0.30	0.11	0.31	0.09	0.29
yr2011	0.10	0.30	0.12	0.32	0.11	0.32	0.08	0.28	0.11	0.31	0.09	0.29
yr2012	0.10	0.30	0.15	0.36	0.13	0.33	0.11	0.31	0.10	0.30	0.16	0.36
yr2013	0.10	0.29	0.13	0.34	0.12	0.33	0.09	0.29	0.10	0.30	0.17	0.38
yr2014	0.10	0.29	0.06	0.24	0.11	0.31	0.09	0.29	0.08	0.28	0.20	0.40
yr2015	0.10	0.29	0.06	0.24	0.09	0.28	0.10	0.30	0.09	0.28	0.17	0.37
sample1	0.001	0.03										
sample2	0.03	0.17										
sample3	0.001	0.03										
sample4	0.03	0.18										
sample5	0.01	0.08										
No. of observations	1403444		924		32725		1113		46488		7964	

Source: Authors' calculations based on EU-LFS data.