Analysis of youth underemployment in Macedonia, Montenegro and Serbia

RESEARCH PROPOSAL

Presented to

Partnership for Economic Policy (PEP)

By

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&

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Macedonia

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SECTION I – RESEARCH

1.1. Abstract (100 to 250 words)

The abstract should state the main research question, the context and its relevance in terms of policy issues/needs in relation to PAGE thematic foci, complete with a brief description of the methodology(ies) and the data that will be used.

When a worker underuses his/her skills, training and experience, he/she is said to be underemployed. Youth are particularly prone to underemployment, especially on high-unemployment labor markets. The labor markets of Macedonia, Montenegro and Serbia are of this kind. Therein, between ½ and 2/3 of youth possess at least two out of five underemployment conditions: work less than 35 hours and want to work more, temporary contract, job insecurity, salary below the minimum, over-qualification. Still, underemployment is not a topic in the Youth Employment Plans of the three countries, because of lack of evidence and of the crowding-out focus on youth unemployment.

The objective of the proposal is to describe underemployment and investigate its effect on personal wellbeing in the three countries. Special reference to gender will be made. By so doing, it opts to bring the issue to policymakers’ agenda and formulate ideas for policies tackling underemployment.

Methodologically, we first set underemployment a function of personal and local-labor-market characteristics. We rely on Heckman models – binary- and ordered-outcome ones – to overcome the potential selectivity bias into underemployment. For the ordered case, we use a CMP estimator. We then regress personal welfare on underemployment and worker’s characteristics. As welfare is latent variable, we rely on MIMIC model. To overcome potential endogeneity of underemployment, we specify third regression in the model whereby observables and exogenous instrument determine underemployment. The average local/municipal wage at the time when the person became (under)employed is used as instrument.

The School to Work Transition Surveys (2014-2015) are used.

1.2. Main research questions and contributions

Explain the focus (or key questions) of your research and its policy relevance.

Explain why you think this is an interesting research question and what the potential value added of your work might be (knowledge gaps). You might want to explain whether or not this question has been addressed before in this context (including key references), and if so, what do you wish to achieve (in addition) by examining the question again?
Motivation

When a worker underuses his/her skills, training and experience, he/she is said to be underemployed (Bonnal, 2009). According to the ILO, a worker is considered underemployed when he/she works less than a threshold of 35 hours per week and is willing to work more. However, the literature (e.g. Reynolds, 2012) considers a broader definition of underemployment: workers who earn below what they believe could earn or earn the minimum wage; workers who face low benefits and job insecurity; workers who work less hours than they desire; and workers who are overqualified for the job position they have. In general, underemployment is considered employment which is less than adequate. As such, underemployment hides a large pool of unused potential, because these workers will likely respond to better job offers that better match their skills.

Especially prone to underemployment are, expectedly, youth. They are less experienced in job search, less powerful in wage negotiations, less financially secure and more exposed to psychological distress (Reynolds, 2012), hence more prone to accept jobs that do not match their skills and earning potential, hence driving low job satisfaction. Besides age, other reasons may be the cause of underemployment, including education, gender, marital status, household financial situation, as well some characteristics of the local labor market, like the local unemployment rate and the average area wage. In particular, youth females may be even further prone to underemployment, due to their increased inactivity on the labor market, mainly driven by the patriarchal mindset whereby females are those who need to take care of the household and children.

The issues of underemployment is aggravated on labor markets facing high unemployment rates and slow job creation. The labor markets of Macedonia, Montenegro and Serbia – three transition economies in the Western Balkan – are of this type. Table 1 shows that these three labor markets face large and persistent overall and, particularly, youth unemployment rates. Compared to the EU-28 average, these rates are quite higher, but they also have the feature of structural and not cyclical unemployment. On top, the share of youth who are not in employment, education or training (NEET) remains large.

Table 1 – Labor market indicators for youth (15-24)

<table>
<thead>
<tr>
<th></th>
<th>Macedonia</th>
<th>Montenegro</th>
<th>Serbia</th>
<th>EU-28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall unemployment rate</td>
<td>25%</td>
<td>18%</td>
<td>18%</td>
<td>10%</td>
</tr>
<tr>
<td>Youth unemployment rate</td>
<td>47%</td>
<td>38%</td>
<td>43%</td>
<td>25%</td>
</tr>
<tr>
<td>Youth NEET (share)</td>
<td>25%</td>
<td>17%</td>
<td>20%</td>
<td>16%*</td>
</tr>
</tbody>
</table>

Source: ILO. Data for 2015, except for the EU, 2014. * refers to age group 15-34.

Despite such general context, the issue of youth underemployment has not been studied nor tackled by policymakers. Prime reason may be sought in the unavailability of statistical information related to underemployment. Only ILO published an underemployment rate for the overall working-age population. Recently, though, with the collection of the School-to-Work-Transition (SWT) Surveys of the ILO, it has been made possible to understand the magnitude of youth underemployment, initiate research and hence policies that may tackle this issue. Table 2 suggests that underemployment is not a hot issue for the overall working-age population, at least not in Macedonia and Montenegro.
However, when these rates are calculated for youth, a source of concern emerges. According to the ILO definition, the youth underemployment rates appear twice to eight times higher than those of the overall working-age population, providing initial support to the claim that youth are more prone to underemployment.

Table 2 – Underemployment statistics

<table>
<thead>
<tr>
<th>Shares in total employment</th>
<th>Macedonia</th>
<th>Montenegro</th>
<th>Serbia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underemployment (15-64)</td>
<td>2%</td>
<td>1.8%</td>
<td>9%</td>
</tr>
<tr>
<td>Youth underemployment (15-29) – ILO definition</td>
<td>12.5%</td>
<td>14.3%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Female youth underemployment (15-29) – ILO definition</td>
<td>13.9%</td>
<td>15.2%</td>
<td>24.9%</td>
</tr>
<tr>
<td>Youth underemployment (15-29) – broader definition</td>
<td>57.1%</td>
<td>68.3%</td>
<td>60.9%</td>
</tr>
</tbody>
</table>

Source: ILO (first indicator); SWTS (the other three indicators). Figures represent shares in total employment.

However, the issue escalates when a broader definition of youth underemployment is considered. In the broader definition, we operate with five indicators, along the lines of Reynolds (2012): the person works less than 35 hours per week but wants to work more (ILO indicator); the person is overqualified, the person expressed insecurity on the job; persons’ salary is below the reservation wage; and the person is with temporary or no written contract. The broader definition enables incorporating the relation between labor productivity and underemployment: people become underemployed as they learn new skills (Bollinger et al. 2003). For the sake of illustration, we arbitrary take as underemployed those who have at least two of the five broader conditions prevailing. The last row in Table 2 gives their share. The figures are striking: between half and two thirds of employed youth in the analysed countries possess at least two out of five underemployment conditions.

Objectives

Given this background, the present proposal has the following primary objectives:

1. To investigate the interaction between underemployment and personal, household and community characteristics, in rigorous econometric manner by considering potential selectivity bias into underemployment;

2. To investigate the effect of underemployment on personal wellbeing, in rigorous econometric manner by considering their potential simultaneity and wellbeing way of measuring through self-perception;

As well the following secondary objectives:

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1 We use the words ‘wellbeing’ and ‘welfare’ interchangeably in this proposal, referring to personal satisfaction, happiness and contentment, including the standard of living in financial or material sense.
3. To portray the issue of youth underemployment in Macedonia, Montenegro and Serbia, through simple statistics and charts, as such information has been lacking so far;

4. To reveal the importance of gender differences in characterizing underemployment and its effect on worker’s welfare;

5. To devise credible recommendations to policymakers in the form of specific instruments to tackle underemployment.

Theoretical background and related studies

The issues we want to explore here do have eclectic theoretical roots.

The original theoretical conceptualization of underemployment has been the Labor Utilization Framework (Clogg, 1979, Sullivan, 1978). According to it, underemployment includes sub-employment, unemployment and economically inadequate employment, where the latter includes low-wage and low-hour employment, but also other subcategories like intermittent unemployment (adequate employment with recent history of unemployment, reflecting job insecurity), over-qualification, and the like. As such, the underemployment, actually, appears on a continuum between unemployment and having a decent job (Dooley and Prause, 2004). The Labor Utilization Framework offers theoretical grounds for analysing the gradients of underemployment on such employment continuum (Grzywacz and Dooley, 2003). As argued before, the definition of underemployment in this proposal is consistent with that used in economics: unused skills, education, and time; inadequate pay; and insecure workplace; all of which indicate an inefficient labour market.

Two main theories underlie the factors explaining underemployment. Firstly, the Human Capital Theory of Becker (1962) establishes that education and skills, as human-capital characteristics, may explain certain labor-market outcomes, including underemployment. Worker’s education is key in assessing the extent to which there is a mismatch between acquired skills and the skills required by particular jobs (Hersch, 1991); such mismatch may be a source of underemployment. However, Allen and van der Velden (2001) argue that experience – hence, skills learnt on the job – may be more important in predicting underemployment.

Secondly, the Theory of the ‘tied mover/tied stayer’ (Kain, 1962) may explain portions of underemployment, as some population cohorts, like females, may be prevented to commute due to family or other ties. This is important when the local labor market does not provide sufficient opportunities for better-skilled workers, hence forcing them to be underemployed if they refuse to commute. However, on the other hand, youth workers are considered more willing to commute, hence to overcome such spatial restrictions and mitigate underemployment.

Aside the lower likelihood to commute in order to avoid underemployment, women may be further prone to underemployment due to increased likelihood for labor-market non-participation. This is rooted in the home-economy literature (Becker, 1991), according to which household and child-raising tasks of females encourage labor-market deactivation, especially in patriarchal societies. The inability to fully participate on the labor market may make some females to consider themselves underemployed.
There are two competing theories which attempt to understand the relationship between underemployment and welfare (Reynolds, 2012). The first is the **Selection Hypothesis**, according to which impaired welfare (e.g. physical or psychological distress) may lead to underemployment. Hence, factors that influence welfare should be tackled to avoid underemployment. The second is the **Social Causation Hypothesis**, which claims that workers who are underemployed undergo stress and dissatisfaction, hence leading to impaired welfare. In such case, underemployment should be tackled directly through youth employment programs, re-training, or underemployment counseling. Both theories, however, create empirical difficulty in identification – something we would like to tackle in this proposal.

The **empirical evidence** on the determinants of underemployment primarily documents a set of personal and household characteristics to be related with underemployment. Due to space, we will just name few prominent studies, leaving their details for later stages in case the proposal is selected: Gong and Namara (2011); Wilkins (2006); Chan and Steven (2004); Koeber and Wright (2001); Ruiz-Quintanilla and Claes (1996); Wooden (1993); Leppel and Clain (1988). Some papers consider the local labor-market characteristics as important for underemployment (Bonnal et al. 2009; Wilkins, 2006; Prause and Dooley, 2011 offer a review). The empirical findings on the relationship and causation between underemployment and welfare have been also abundant (Prause and Dooley, 2011; Fryer, 1997, despite older reference, offers a neat review), but with no clear-cut conclusion on which theory – the Selection Hypothesis or the Social Causation Hypothesis – has been the true one (Catalano et al. 1993; Dooley et al. 1992). Patterson (1997) proposed that both theories should be used in conjunction to explain the relationship between underemployment and wellbeing.

As explained above, **there is no any empirical evidence about underemployment in the Western Balkans – this is the first study proposed on the topic.**

### 1.3. Methodology

Presentation of the specific techniques that will be used to answer the research questions and how exactly they will be used to do so. Explain whether you will use a particular technique normally used in other contexts or whether you intend to extend a particular method and how you will do so. Explain if these methods have already been used in the context you are interested in (including key references).

This proposal is composed of **three methodological parts**, corresponding to objectives 1, 2 and 3, accordingly. All methodological steps consider the gender dimension, hence answering objective 4.

The **first methodological part** is based on providing **descriptive statistics**, based on all available information pertinent to this proposal in the School-to-Work-Transition Surveys (as per the explanation in the following section). We will start by looking at the incidence of underemployment, as per the definition of ILO and the broader definition. As the broader definition consists of four factors in addition to the ILO definition, we will pay special attention to each of those. Each will be disaggregated by gender, to examine any early distinctions between youth males and females in terms of underemployment. In the descriptive part, other facets of the survey pertinent to this
The second methodological part aims to describe underemployment in more rigorous econometric terms. In this part, we will set the following model:

\[
\text{underemployment}_i = a + \sum b_{1j} \cdot \text{personal}_i + \sum b_{2j} \cdot \text{local} + e_i \quad (1)
\]

whereby the underemployment condition of person i is a function of individual (personal) and local-labor-market characteristics. We define underemployment in two forms mentioned above: ILO definition, according to which a person is considered underemployed if he/she works less than 35 hours a week and wants to work more, in which case the variable takes a value of 1, and 0 otherwise; the broader definition, encompassing 5 elements, hence being an ordered variable [0, 5]. Note that, zero in both cases means that the person is not underemployed, but still employed (i.e. the job may be considered adequate or decent), while those non-employed have a missing value. The personal characteristics included are coming from the Human Capital Theory: education, experience, age, marriage, gender and household financial condition. The local labor market characteristics come from the Theory of the ‘tied mover/tied stayer’ and include: log average wage of the region (or its ratio to the national average); and local unemployment rate (of the region or municipality, whatever available). \(e_i\) is the error which is assumed well-behaved.

The main econometric challenge in estimating (1) is that underemployment condition is observed only for employed. If employed are systematically different than non-employed, then we have a reason of concern of how selection may affect our estimates. To overcome this problem, we will employ a variant of the Heckman (1979) sample-selection two-stage model. In the first stage (selection equation), those in the active labor force establish identifying whether individuals are employed or not. Then, in the second stage, the probability of being underemployed is regressed on personal and labor-market characteristics only for employed individuals. The first stage needs an exclusion restriction, i.e. a variable which affects employment but not underemployment, except indirectly. In absence of clear guidance from previous studies, we revert here to the home-economy literature mentioned in the previous section (Becker, 1991): person’s inclination to seek job is related to family circumstances – number of children and elderly; larger the family obligations deter females from the labor market, while likely work in the opposite manner for males as main breadwinners in the household. Then, as the literature notes, the labor-market status (inactive or active job seeker) will impact underemployment, so that dependencies in the household affect underemployment only indirectly. Hence, in the selection equation, we will include the number of children in the household and the dependency ratio as exclusion restrictions. Finally, since the underemployment variable takes binary and ordered form, respectively, we will accordingly employ a bivariate and ordered probit model with sample selection via maximum-likelihood estimation. In the bivariate probit case, we follow de Ven and van Pragg (1981), utilizing the heckprob stata command, while in the ordered probit case, we will utilize Roodman’s (2011) conditional mixed process estimator, and run a system of two equations whereby the first stage is a binary probit, while the second, an ordered probit. In both cases, the critical correlation is the one of the error terms of the two equations, to be determined by a significant Wald test.

The third methodological part aims to disentangle the effect of underemployment on welfare, in the following manner:
welfare_i = c + d_1 * underemployment_i + \sum d_{2i} * personal_i + u_i \quad (2)

whereby welfare depends on a set of personal and household characteristics and on the underemployment condition. The personal and household characteristics are the same included in (1). Welfare could be measured only indirectly, through respondent’s perceptions. For that purpose, we have on disposal the following three questions: Q1: To what extent are you satisfied with your main job? Q2: How likely do you believe it is that you will be able to keep your main job if you want to? Q3: Do you have any difficulty in remembering or concentrating?. Q1 reflects welfare originating from job satisfaction; Q2 from perspectives about the future; Q3 from mental health\(^2\). All these are measured on a scale from 1 to 4, whereby growing indicator signifies a worsening welfare condition. Presently, these are the only questions in the surveys that could be associated to welfare.

We need, at this point, to delineate some lines of caution with the usage of such an indicator of welfare. First, we do not use a usual income or expenditure-based indicator, simply because such one is not included in the survey, as it surveys young persons and not their entire households. Second, however, it is not even the intention to use such a metric of welfare. We are more concerned about the welfare in the broader sense: what the young person feels (for the prospects, for the job and for the health), rather than what he/she earns or possesses. From that viewpoint, the indicator could be even differently-than-welfare labeled. The literature recognizes cases when alternative measures of welfare are used: e.g. Sahn and Stifel (2003). They propose an asset-based approach, deriving a welfare index with factor analysis, based on three groups of indicators: ownership of durable goods, housing quality and human capital. Hence, while in this analysis we label our dependent variable ‘welfare’, by no means we opt for it to compare with the standard expenditure-based welfare (as actually is the intention of Sahn and Stifel, 2003).

There are **two econometric challenges** in estimating (2): we ‘observe’ welfare only through respondent’s perceptions; and underemployment may be endogenous to welfare, as supported by the competing theories elaborated in the previous section. More precisely: i) welfare is not captured by a single indicator; ii) welfare is only a perception which is continuous latent variable rather than observed categorical variable, as are the available indicators; and iii) welfare can be both a cause and a consequence of underemployment.

**First**, as we opt to capture welfare through three perceptive variables: job satisfaction, future perceptions, mental health, we need a measure for the internal consistency or reliability of this set. The **Cronbach’s alpha** is one way of measuring the strength of that consistency (Cortina, 1993). We will estimate the alpha for our set and an estimate of above 0.7 will suffice to suggest that these items do indeed tap into an underlying construct of welfare among respondents. Otherwise, we may need to drop one of the three variables.

**After** we have verified the internal consistency of our set of measures for welfare, we propose that the two challenges are overcome by employing a non-structural exercise, using a **MIMIC (Multiple-Indicator Multiple-Cause) model** (Goldberger, 1972). First, in the MIMIC specification, we explicitly acknowledge that welfare is continuous rather than a discrete phenomenon, and it could only be observed with error due to respondents’ perceptions. The MIMIC methodology simultaneously links

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\(^2\) Other studies used additional aspects of welfare, like alcohol consumption and criminal behavior (e.g. Etter, 1997; Wadsworth, 2006). However, in this study we are bound by the available data from the SWTS, to define ‘welfare’ only through the above aspects.
the perceptive ‘indicators’ with the potential ‘causes’. Briefly, the model consists of two sets of equations:

\[ y_{ij} = \beta_j \xi_i + \nu_i \quad (3) \]
\[ \xi_i = \gamma_k x_{ik} + \zeta_i \quad (4) \]

where \( y_{ij} \) is an observation of indicators for welfare; \( x_{ik} \) is an observation for cause \( k \) of person \( i \); \( \xi_i \) is a latent variable representing welfare of person \( i \); \( \beta_j \) and \( \gamma_k \) are vectors of coefficients, and \( \nu_i \) and \( \zeta_i \) are well-behaved disturbances. Equation (3) links \( J \) consequences and manifestations of welfare to the unobservable measure of each of them. The second ‘structural’ equation models the ‘determination’ of welfare as a function of \( K \) causes.

By substituting (4) into (3), we can derive a model which is no longer a function of the latent variable \( \xi_i \). This MIMIC model is a system of \( J \) equations with right-hand-sides restricted to be proportional to each other. These proportionality restrictions constrain the structure to be a ‘one-factor’ model of the latent variable; with the addition of a normalization, they achieve identification of the parameters in (3) and (4). One of the features of the MIMIC model is that it explicitly incorporates measurement error about key variable – welfare – in a non-trivial and plausible way.

Therefore, we will have two equations in the MIMIC model: the first in which observables cause the welfare as latent variable, and the second in which the manifestations of the latent variable correlate with the unobservable measures. However, the remaining problem is that welfare and underemployment may be simultaneously determined (recall the two theories above). Hence, to the system, we will add a third equation whereby underemployment is a function of all observables in the first equation, plus a variable affecting only underemployment and not welfare (instrument). The literature provides little guidance at this point\(^3\). Variables that affect underemployment and not welfare could be hardly found. We propose to use the average regional/municipal wage when the person got employed (as underemployed). This is a historical condition of the labor market reflecting the conditions that prevailed at the time the person got underemployed, so it is expected to affect underemployment negatively (higher average wage, better local labor market conditions, lower chance for a person to become underemployed). On the other hand, the average regional wage at that time is not expected to affect the welfare today: welfare today depends on today’s personal wage, good health, opportunities to be promoted and change jobs and so on. Hence, we assume that any potential initial correlation between the local labor market conditions (average wage) and personal welfare in one single point of time (when the person got employment), fades out over time, i.e. that their link breaks as local conditions change, as the person matures in professional sense, as he/she acquires new skills and so on.

The usage of the MIMIC technique, however, creates a third problem: as the latent variable is dimensionless, the coefficient in front of the underemployment may not have economic meaning, even if found statistically significant. To alleviate this problem, we propose alternative method. First, we will define a welfare index calculated as a weighted average of the three indicators of welfare (job satisfaction, future perceptions, mental health). Similarly as in Sahn and Stifel (2003), we will

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\(^3\) Earlier studies acknowledged this problem and only tried to soften it by adding an indicator of initial welfare in the equation.
pursue factor analysis to obtain the weights of the different components of the index. Then, the index will be regressed on the same variables as in (2). Similarly as in the MIMIC case, to overcome underemployment potential endogeneity with regard to welfare, we will also employ an equation whereby underemployment is a function of the same variables and an excluded instrument (the average regional/municipal wage). We will estimate the system of two equations with ivreg2. In such methodological setting, we obtain two advantages over the usage of MIMIC, as follows.

1. The coefficient in front of underemployment will have economic meaning. Namely, as the welfare is measured on a scale from 1 to 4, it would be possible to comprehend the size of welfare change when underemployment condition – which is measured on a 0-5 scale – changes for a unit; and

2. By having used ivreg2, we will be able to produce the standard under- and weak identification tests, which are important for building a stronger case for the usage of the proposed instrument.

As both models (1) and (2) contain a variable on gender, we will be specifically interested in the magnitude, sign and significance of this coefficient. Moreover, the two models will be analysed country by country. In both cases (gender and country separation), we will employ the corresponding test (LR-test and Chow), whereby the null is that all coefficients of the model do not vary between disjointed subsets of the data (being analysing genders separately, and/or countries separately).

To our knowledge, such methodological approach has not been used to study underemployment, let alone underemployment in transition economies where the phenomenon has not been studied at all. Therefore, this study will be the first to examine underemployment in the proposed methodological framework, as well the first to examine underemployment in the Western Balkans.

1.4. Data requirements and sources

This is a critical part of the proposal. The key issue is to explain the reason for the use of the particular data. You must establish that they are ideal for the question you wish to address and that you have or will have access to these data before your project begins. Please consult the “Guide for designing a research project proposals” for more detail.

As established in the previous sections, the issue of underemployment has not been studied before in the Western Balkan region, let alone the issue of youth underemployment. There are a couple of reasons: i) the focus of analysis has been on unemployment, due to the persistently high structural unemployment, overall and of youth; ii) the issue of underemployment has not been approached neither in government documents; iii) data on LFS (containing questions on underemployment) are not freely available and require visit of SSO safe rooms; iv) even if they are, LFS will secure limited information on youth, given they are only a subsample of the overall LFS sample; in addition LFS does not contain variable which relates to youth specifically (e.g. whether the person pursued internship or worked during studies).
The problem of data scarcity and access has been recently mitigated with ILO’s initiative called “Work4Youth”. Within it, the School to Work Transition Surveys have been gathered for about 30 developing countries, out of which for the three ex-Yugoslav transition economies of Macedonia, Montenegro and Serbia (being the only of the Western Balkan region represented in this initiative). Youth 15-29 are surveyed. The surveys gather data on various aspects of youth and their path to employment, including: demographic variables, education, household status, employment status, inactivity status, perception on various aspects during the transition from school to work and so on.

These data have been gathered for two years for each country and are freely available. For the purpose of the proposed study, we will be utilizing the newer wave of the survey: 2014 for Macedonia and 2015 for Montenegro and Serbia. We drop all youth individuals who are still in education, to arrive at the sample we will work with. Table 3 gives the sample sizes available and the ones we operate with.

Table 3 – Total sample and the sample we propose to work with

<table>
<thead>
<tr>
<th></th>
<th>Macedonia</th>
<th>Montenegro</th>
<th>Serbia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td>2.544</td>
<td>2.988</td>
<td>3.508</td>
</tr>
<tr>
<td>Sample without those still in education</td>
<td>1.248</td>
<td>1.336</td>
<td>1.643</td>
</tr>
</tbody>
</table>

Source: SWT Surveys for Macedonia, Montenegro and Serbia.
SECTION II – CAPACITY BUILDING

2.1. List of team members

For all team members, please indicate the age sex, as well as relevant/prior training and experience in the issues and research techniques involved (start with team/project leader).

Note that PEP favors gender-balanced teams, composed of one senior (or experienced) researcher supervising a group of junior researchers, including at least 50% female researchers, all contributing substantively to the research project. PEP also seeks gender balance in team leaders and thus positively encourages female-led research teams. (Each listed member must post an up-to-date CV in their profile on the PEP website – refer to “How to submit a proposal”)

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Sex (M,F)</th>
<th>Training and experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blagica Petreski</td>
<td>32</td>
<td>F</td>
<td>Over 8 years of experience in research. Trained in econometric methods. Senior analyst of labor market phenomena. Project leader</td>
</tr>
<tr>
<td>Despina Tumanoska</td>
<td>30</td>
<td>F</td>
<td>Over 5 years of experience in research. Senior analyst of labor market phenomena. Intermediate experience in econometric applications.</td>
</tr>
<tr>
<td>Ivan Vchkov</td>
<td>27</td>
<td>M</td>
<td>One year of experience in research. Junior analyst of labor market phenomena. Some experience in econometrics.</td>
</tr>
<tr>
<td>Tereza Kochovska</td>
<td>26</td>
<td>F</td>
<td>Less than one year of experience in research. Junior economic analyst.</td>
</tr>
</tbody>
</table>

2.2. Expected capacity building

Describe the research capacities that team members (and potentially their affiliated institutions) are expected to build through their participation in this project.

This is an important aspect in the evaluation of proposals and should be presented with detail. What techniques, literature, theories, tools, etc. will the team and their institutions learn (acquire in practice) or deepen their knowledge of? How will these skills help team members in their career development? What are the current state of knowledge of each team members in regard to the project you are proposing?
<table>
<thead>
<tr>
<th>Name</th>
<th>Benchmark and expected capacity building</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blagica Petreski</td>
<td>• Heckman probit method</td>
<td>Blagica is senior researcher of issues involving labor market, active policies, remittances and migration. She has had many opportunities to practice her econometric skills. In particular, she applied Heckman method in previous research. The present proposal will build her capacities beyond the basic Heckman model, in the direction of Heckman method with binary outcomes. In addition, she will equip new knowledge on the application of the MIMIC model.</td>
</tr>
<tr>
<td></td>
<td>• MIMIC method</td>
<td></td>
</tr>
<tr>
<td>Despina Tumanoska</td>
<td>• Heckman probit method</td>
<td>Despina recently completed a project on active labor market policies in Macedonia and Bosnia-Herzegovina. However, she is expected to further build capacity in comprehending and critical review of the referent literature on underemployment. On top, she is expected to significantly build and improve econometric skills related to the models proposed herein, as her previous experience with Heckman and MIMIC is limited.</td>
</tr>
<tr>
<td></td>
<td>• MIMIC method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Literature on underemployment</td>
<td></td>
</tr>
<tr>
<td>Ivan Vchkov</td>
<td>• Econometric analysis in Stata</td>
<td>Ivan is with Finance Think for a year. He has been involved in the study of the gender wage gaps program. As such, he gathered econometric experience with Heckman. However, he has not been involved with the study of the labor market phenomena. We consider this project to be his entry into the analysis of labor markets, hence reading the literature on underemployment is expected to provide the maximal capacity building for him.</td>
</tr>
<tr>
<td></td>
<td>• Literature on underemployment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Literature on methodologies</td>
<td></td>
</tr>
<tr>
<td>Tereza Kochovska</td>
<td>• Descriptive analysis in Excel</td>
<td>Tereza has been involved in Finance Think as 50% economic analyst, 50% administrator. The project will be crucial for her load as economic analyst to increase. Tereza has been involved in data collection in previous projects, so the next natural phase for her is to involve in relatively simple descriptive statistics. She will also benefit from being trained on econometric skills and have the chance to read related literature. Tereza is expected to have the maximal capacity building on all issues related to this proposal.</td>
</tr>
<tr>
<td></td>
<td>• Econometric analysis in Stata</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Literature on underemployment</td>
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<tr>
<td></td>
<td>• Literature on methodologies</td>
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</tbody>
</table>

Add comments and describe institutional capacity building if applicable.
The proposed team members are full-time workers of Finance Think – the Economic Research & Policy Institute, Skopje (FT). Not only individuals will undergo capacity building, but also the institution as a whole. The institutional capacity building is expected to occur along the following lines:

1. FT is the only economic institute in Macedonia having explicitly embedded econometric techniques in its everyday work. Equipping with cutting-edge techniques as are the ones underlying this proposal will secure that other proposals for funding with various donors in the future become more sophisticated, hence increasing the winning probabilities.

2. Many think tanks are based on activism; FT is based on evidence and research. Being equipped with skills to know and understand various strands of literature will secure that subsequent outputs (journal papers, policy studies, commentaries, briefs, regular publications) are with higher quality and profoundly literature-based.

3. FT translates its complex findings and results in neat ways understandable for the stakeholders and the general public through info-graphs, GIFs, short videos, simple graphs, media statements, expert columns, blogs and so on, as well with specific formats addressed at policymakers: briefs, policy forums, round tables, policy council (new!) and so on. All these serve to drive policy and public engagement, which has been one very strong advantage of FT in the past. The current proposal is expected to provide new chance to be brilliant on this front.

Indicate which specific tasks each team member would carry out in executing the project.

- Note that one of the team members must be clearly identified as responsible for coordinating and reporting on the design/implementation of the projects’ policy engagement and communication strategy (see section III below). To achieve a more balanced task distribution, PEP advises to select a member other than the project leader.

<table>
<thead>
<tr>
<th>Name</th>
<th>Task and contribution to the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blagica Petreski</td>
<td>Overall leadership of the project. Involved in all phases as coordinator, motivator, know-how educator, as well working in specific tasks requiring higher skills. Engaged in the policy engagement and dissemination phase.</td>
</tr>
<tr>
<td>Despina Tumanoska</td>
<td>Deeply involved in the key phases of the project: developing of the literature review and the theoretical background; estimates and analysis of the results. Reading the associated literature on the topic, as well the econometric literature, so as to build capacity.</td>
</tr>
<tr>
<td>Ivan Vchkov</td>
<td>Involved in the estimation exercise in detail, as well in providing inputs to the descriptive part. Reading the associated literature on the topic, as well the econometric literature, so as to build capacity.</td>
</tr>
<tr>
<td>Tereza Kochovska</td>
<td>Conduct of descriptive statistics. Involved in other parts, so as to increase capacity in econometric applications, critical overview of the</td>
</tr>
</tbody>
</table>
literature and policy engagement. Physical conduct of the policy engagement (devising the policy brief and dissemination to stakeholders; organization of the policy conference and engaging participants and audience; other forms of disseminating findings).

2.3. **List of past, current or pending projects in related areas involving team members**

Name of funding institution, title of project, list of team members involved

<table>
<thead>
<tr>
<th>Name of funding institution</th>
<th>Title of project</th>
<th>Team members involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDEF (pending)</td>
<td>Empowering women in Macedonia: Tool, capacity building and a campaign for utilization of flexible working arrangements as a means for higher female participation on the labor market</td>
<td>All team members</td>
</tr>
<tr>
<td>Center for International Private enterprise (pending)</td>
<td>Skills-Links-Rights for Female Economic Empowerment in Macedonia</td>
<td>All team members</td>
</tr>
<tr>
<td>European Fund for the Balkans (2016)</td>
<td>Challenging unemployment in the Western Balkans: Enhancing active labor market policies in Albania, Bosnia and Herzegovina and Macedonia</td>
<td>Blagica Petreski and Despina Tumanoska</td>
</tr>
<tr>
<td>British Embassy, Skopje (2016)</td>
<td>FISCAST+: Fiscal transparency and accountability improves policies in quality of life, education and health</td>
<td>All team members</td>
</tr>
<tr>
<td>Central European Initiative – KEP Austria (2016)</td>
<td>“Heroes and she-roes”: Knowledge for analysis of and advocacy for equal pay for women and mothers in Macedonia (SHE-ROES)</td>
<td>All team members</td>
</tr>
<tr>
<td>Partnership for Economic Policy (2014)</td>
<td>Simulation of a voucher policy for improving the social condition of individual remittance receivers in Macedonia</td>
<td>Blagica Petreski, Despina Tumanoska</td>
</tr>
<tr>
<td>USAID Macedonia (2013)</td>
<td>Mind the gaps between the budget lines and the programs of the National strategy for poverty reduction</td>
<td>Blagica Petreski, Despina Tumanoska</td>
</tr>
</tbody>
</table>
SECTION III – POLICY ENGAGEMENT

3.1. Policy context and needs

Describe the specific policy issues or needs that your research aims to address; how your potential outcomes and findings may be used in policy making? Please be as precise as possible, indicating specific current or prospective policies and the specific contributions your research would make.

Also, justify timing of your research in terms of policy and socioeconomic needs and context – e.g. reference to existing, planned or potential policies at the national, regional or local level; specific political context; international examples of similar policy problem or solution, etc.

In terms of policy, the topic of this proposal falls under the National Employment Strategies in the three countries which are then translated in respective action plans: the Action Plan for Youth Employment 2016-2020 in Macedonia; the Action Plan for the Conduct of the National Youth Strategy 2015-2017 in Serbia; and the Action Plan of the National Strategy for Employment and Human Resources 2016-2020. The three action plans do have many similar operational objectives and specific steps, as they have been developed with the support of the International Labor Organization.

However, the three plans are specifically focused on the unemployed, i.e. how to generate jobs for the large number of unemployed youth. Hence, plans’ objectives, while with some variety, generally boil down to the following: improving the institutional system for cross-sectoral cooperation; promoting private-sector-led job generation (including with government-supported measures); easing school to work transition; and matching the supply and demand of skills of youth. Therefore, tackling problems related to underemployment is not an explicit objective of the plans. Only sporadically, plans touch upon the issue of the skill mismatch between the supply and demand, but do not explicitly address the problem of over-qualification once the young person is employed (being different than mismatch in general).

Therefore, the policy objective of this proposal is twofold:

1. To put the issues of underemployment of youth on the agenda of the policymakers in explicit and clearly-formulated manner;
2. To propose specific policy actions that may mitigate the problem of underemployment.

In particular, the research is expected to produce evidence on the characteristics of underemployed (whether these are prevalently secondary-education, or prevalently female youth), as well on underemployment effect for youth welfare. As such, findings will represent strong advocacy tool for achieving both policy objectives stated above. More directly, the findings are expected to feed policy objective 2, in terms of devising policy measures and active programs that will (at least temporarily) mitigate the negative consequences of underemployment for welfare, in the following veins:

- Provide career counselling for youth who expressed they were over-qualified on their workplace, with the purpose of overcoming mismatches or faster transition to another
workplace in the same or other company;

- Providing wage subsidies (e.g. reduction or exclusion of payment of the social security contributions) for youth in the first 1 or 2 years of employment, whereby the young person may consider underemployment. Subsidies may be higher for females, if these are found more prone to underemployment. If the employer got such subsidy, he/she will not be able to fire the worker for additional 1 or 2 years. This means that contract’s temporality will be mitigated;

- Devising multi-sector traineeship grant, according to which the company will enable that the newly employed young person will spend at least three months at three different jobs within the company related to his/her skills, and then make a suggestion of what best fits his/her skills. The preferred job will not be a ‘must’, but an objective for a reasonable time period of up to a year;

- Skill certification, probably established by state certification agencies. Certification may be offered for different level and type of skills, which may not be guaranteed by the diploma. Skill certification may be free of charge (covered by the government), while providing employers guidance of the specific skills the employee possesses;

- Devising (and/or extending the palette of) various very specific trainings (e.g. argon welder), which will provide opportunities for underemployed to acquaint related skill in case of underemployment;

- Fostering education completion, in particular, for disadvantaged groups (e.g. female youth in rural areas);

- The most at-risk categories groups (e.g. Roma women, or marginalized youth including former prisoners or drug addicts) should gain mentoring (by nonparent adult or work-related mentor, e.g. employees of the Centres for Social Work), subsidized by the government, to help them gain and retain decent employment.

Despite the National Youth Employment Strategies span over 5 years, still it is possible that action plans are amended anytime. In particular, the timing for such planning and action intervention is especially suitable for Macedonia and Montenegro, whose parliamentary elections will be held in December and October 2016, respectively. Hence, action plans may considerably change if new governments come into power, but in any case, any new promises before elections will need to be embedded in the government programs afterwards. In any case, at least the government of Macedonia, expressed will in previous instances to listen researchers and think of embedding policy recommendations in its actions. On the other hand, the new National Youth Strategy in Serbia will have to be adopted in 2017 (for the period 2018-2020, due to the planning cycle there), which is the exact timing when this-proposal results will come out.

### 3.2. Consultations to date

List all (past) consultations with potential research users (e.g. policy makers or stakeholders) that have helped define your research question, and/or informed you of the specific policy context described above. Include a list of names, institutions and email addresses (add rows when needed).
**3.3. Identify target audiences**

Identify potential users of your research findings, including policy makers, advisors and other key stakeholders. Provide a list of institutions and, whenever possible, specific individuals to be targeted for effective policy influence. Please also indicate whether you have already made contacts within the institutions (add rows when needed).

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emil Krstanovski</td>
<td>Country Manager</td>
<td>ILO, Macedonian Office</td>
<td><a href="mailto:krstanovski@ilo.org">krstanovski@ilo.org</a></td>
</tr>
<tr>
<td>Nikica Mojsoska-Blazevski</td>
<td>Prime Adviser to the Minister of Labor and Social Policy, Macedonia</td>
<td>Ministry of Labor and Social Policy, Macedonia</td>
<td><a href="mailto:nikica@uacs.edu.mk">nikica@uacs.edu.mk</a></td>
</tr>
<tr>
<td>Frosina Remenski</td>
<td>Minister of Labor and Social Policy</td>
<td>Ministry of Labor and Social Policy, Macedonia</td>
<td><a href="mailto:fremenski@mtsp.gov.mk">fremenski@mtsp.gov.mk</a></td>
</tr>
<tr>
<td>Mladen Frckovski</td>
<td>State Adviser</td>
<td>Ministry of Labor and Social Policy, Macedonia</td>
<td><a href="mailto:mfrckovski@mtsp.gov.mk">mfrckovski@mtsp.gov.mk</a></td>
</tr>
<tr>
<td>Aleksandar Vulin</td>
<td>Minister of Labor, Employment, Veterans and Social Issues</td>
<td>Ministry of Labor, Employment, Veterans and Social Issues, Serbia</td>
<td><a href="mailto:brziodgovori@minrzs.gov.rs">brziodgovori@minrzs.gov.rs</a></td>
</tr>
<tr>
<td>Ljiljana Džuver</td>
<td>Assistant Minister for Employment</td>
<td>Ministry of Labor, Employment, Veterans and Social Issues, Serbia</td>
<td></td>
</tr>
<tr>
<td>Boris Marić</td>
<td>Minister of Labor and Social Welfare</td>
<td>Ministry of Labor and Social Welfare, Montenegro</td>
<td><a href="mailto:kabinet@mrs.gov.me">kabinet@mrs.gov.me</a></td>
</tr>
<tr>
<td>Edina Dešić</td>
<td>Director of the Employment Department</td>
<td>Ministry of Labor and Social Welfare, Montenegro</td>
<td><a href="mailto:edina.desic@mrs.gov.me">edina.desic@mrs.gov.me</a></td>
</tr>
<tr>
<td>Goran Svilanovic</td>
<td>Secretary General</td>
<td>Regional Research Council, Bosnia-Herzegovina</td>
<td><a href="mailto:rcc@rcc.int">rcc@rcc.int</a></td>
</tr>
<tr>
<td>Vladimir Gligorov</td>
<td>Senior Economist</td>
<td>Vienna Institute for International Economic Studies</td>
<td><a href="mailto:Gligorov@wiwi.ac.at">Gligorov@wiwi.ac.at</a></td>
</tr>
</tbody>
</table>
3.4. Define outreach and engagement strategy

How, from proposal design to the dissemination of your research results, will you consult and communicate with these users to both gather their inputs and keep them informed of your project, in order to increase chances of research uptake? You can refer to PEP requirements in terms of policy engagement and research communication to have a better idea of what is expected in terms of grantees’ initiatives in this area.

The project is specific in the sense that it refers to three Western Balkan countries: Macedonia, Montenegro and Serbia. While direct communication with representatives of the respective ministries has been established, we propose some existing forums as venues for consultation, advocacy and dissemination. These existing forums include:

- **Regional Cooperation Council** (RCC) based in Sarajevo, Bosnia-Herzegovina, promoting cooperation within South East Europe in order to inspire development in the region to benefit its people;

- **The Secretariat of the Central European Free Trade Agreement** (CEFTA), based in Belgrade, Serbia, promoting CEFTA, but also serving a forum where member countries (including the three herein) seat on the same panel and discuss about policies;

- **The Central European Initiative** (CEI) with current presidency in Skopje, Macedonia, being regional intergovernmental forum committed to supporting European integration through cooperation among its members;

- **The Vienna Institute of International Economic Studies** (wiiw), a think tank based in Vienna, Austria, with which Finance Think currently conducts a project financed by CEI, whereby wiiw acts a know-how provider, while Finance Think, a know-how receiver. Wiiw has strong orientation toward the Western Balkan countries and regularly organizes high-level policy and operational meetings as forums for discussing policies and reforms; and

- **Informal networks which exist in the Western Balkan**, one prominent being that of the Regional Research Promotion Program (RRPP) which has been a donor in the Western Balkan countries in the previous decade or so. Informal networks are usually virtual, i.e. function through electronic platforms and regularly gather at conference venues.

The project lifecycle envisages three key discussions within the proposed forums:

- **Kick-off meeting** – Blagica Petreski will be visiting RCC in Sarajevo in October and wiiw in Vienna in December, for the purpose of ongoing projects. She will use that opportunity to inform policymakers about the idea behind this proposal. Over this period, another meeting
with the Macedonian Ministry of Labor and Social Policy will take place. Their consent for active participation in all stages of the research will be required (though implicitly already obtained), which essentially means them being informed (by written communication) of all steps and hurdles of the process. During this meeting, all possibilities for embedding research findings into the respective strategic documents will be thoroughly discussed. In particular, the potential update of the National Employment Strategies will be discussed, and in particular, the drafting of the Youth Employment Action Plans.

- **Midterm progress consultation** – All policy forums will be updated with the progress of the research by December 2017, with very specific recommendations about the lines in which the Youth Employment Action Plans are expected to be updated and amended. In the countries undergoing drafting of such plans for the next year, special attention will be paid for the underemployment to receive its own chapter. At that point, we will offer to policymakers devising of a joint policy briefs which should then feed into the strategic document as outlined before. The objective of the joint policy briefs would be to: i) declare the joint effort that the recommended policy actions see the light of the day; and ii) inform the wider regional public of the planned activities and the expected results that may bring. Policy briefs will be devised in Macedonian, Serbian and Montenegrin language.

- **Final meeting** – The final meeting is expected to happen within at least one of the above forums, at a session they otherwise organize for policy purposes. It will opt to present the findings and the policy actions to the wider regional public. Afterwards, the objective would be to ensure that policy recommendations as specific policy actions have taken place in respective government documents. The final meeting may be merged with the national policy conference, or may happen separately. In the latter case, after the final meeting, national policy conference will follow in Skopje, whereby findings and recommendations will be publicly debated with the policymakers, academia, media and the wider public.

### 3.5. Outline your preliminary dissemination strategy

Identify potential and relevant communication channels (e.g. direct stakeholder meetings, conferences, media/press, web platforms, etc.) through which you will be able, or attempt, to communicate and disseminate your research and research findings.

<table>
<thead>
<tr>
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<td>Vienna Institute for International Economic Studies</td>
<td><a href="mailto:Gligorov@wiiw.ac.at">Gligorov@wiiw.ac.at</a></td>
</tr>
<tr>
<td>TBA</td>
<td>Senior Professional</td>
<td>Central European Initiative</td>
<td><a href="mailto:cei@cei.int">cei@cei.int</a></td>
</tr>
</tbody>
</table>
Outline your preliminary dissemination strategy. Note that PEP expects grantees to disseminate information about their research work and (expected) outcomes throughout the project cycle, and not only after publication.

| Advocacy / dissemination documents expected to be produced in the lifetime of the project and disseminated to policymakers and the wider public include (these are regular publications of FT, used as vehicles to convey certain messages to policymakers and target groups):
| - **FT Comment**, a brief commentary will be prepared on the Youth Employment Action Plans, and disseminated to policymakers, in order to open the discussion that plans are missing actions about youth underemployment (first quarter of the project lifecycle);
| - **Graphometrix**, publication containing graphical presentations on pertinent issues, in this case the issue of youth underemployment (second quarter of the project lifecycle);
| - **2-3 Info-graphics**, containing illustrated and/or cartooned content about the youth underemployment (from second to the fourth quarter of the project);
| - **Blog post**, reflecting personal opinion on specific issues (last quarter of the project);
| - **Policy brief**, succinct document outlining the problem, the methodology, the main findings and, in particular, the policy advice (project’s end).

Despite dissemination through the regular publications, Finance Think has widely and deeply developed **channels for communication with the media and the wider public**. These include regular presence of the economists in the media (for statements, interviews and expert opinions). This communication will be ongoing. Note that special attention will be paid to regional media, primarily **Al Jazeera Balkans** with which Finance Think has regular cooperation (they have a representative office in Skopje), but also others. Our team members will be required to write expert opinion column on the subject and communicate a repute medium in each country for being published (like Dnevnik in Macedonia, Politika in Serbia and Blic Montenegro).

Regional dissemination will certainly be boosted by **participation at the policy forums** organized by the institutions mentioned in Section 3.4, throughout project lifetime.
SECTION IV – OTHER CONSIDERATIONS

4.1. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.

The proposal does not touch upon to any of these risks. Research ethics has been fully adhered to in its preparation. Data will be used from secondary sources, so as there is no data collection, there are no ethical issues related to it. Gender issues have been embedded in the proposed analysis, as one of the key issues to be examined. Environmental issues are outside the scope of the proposal.

4.2. References and plagiarism:

Applicants should be very careful to avoid any appearance of plagiarism. Any text of three or more consecutive words that is borrowed from another source should be carefully contained between quotation marks with a reference to the source (including page number) immediately following the quotation. It is essential that we be able to distinguish what you have written yourself from what you have borrowed from elsewhere.

Note also that copying large extracts (such as several paragraphs) from other texts is not a good practice, and is usually unacceptable. For a fuller description of plagiarism, please refer, for example, to the following website:

- [http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism](http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism)

PEP will be using a software program to detect cases of plagiarism.


