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Happy moves?
Assessing the impact of subjective well-being on the emigration decision

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Happy moves?
Assessing the impact of life satisfaction on emigration intentions

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Abstract

Recent literature suggests that higher levels of subjective well-being lead to greater work productivity, better physical health and enhanced social skills. Because of these positive externalities, policymakers across the world should be interested in attracting and retaining happy and life-satisfied migrants. This paper studies whether higher levels of life satisfaction contribute to one's desire to move abroad. Using survey data from 30 countries of Eastern Europe and Central Asia in instrumental variable analysis, I find that higher levels of life satisfaction have a positive effect on the probability of reporting intentions and willingness to migrate. This finding raises concerns about possible "happiness drain" in migrant-sending countries and questions the usefulness of happiness-enhancing policies.

Keywords: Subjective well-being, life satisfaction, emigration, transition economies.

JEL: F22, O15, P2

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"At the heart of every man there is an instinct of prosperity and greater happiness. Our [Slovenian] emigrants, who are leaving for larger cities, either in Germany or America, are not pale, draining, hungry and desperate, but are strong, blooming, young men who are full of life and strength; and there are the most vigorous women. On the sad road out of their homeland they are not accompanied so much by despair but rather by expectations and the awareness of their own forces and strength."[2]

I. INTRODUCTION

The effects of migration on the well-being of receiving populations, migrants themselves and their family members back home have for a long time been a question of primary interest for academics and policy makers. A large and well-established literature has concentrated on the monetary and other clearly quantifiable impacts of migration, seeking to answer, for example, whether migration reduces wages of native workers. A more recent strand in migration literature has started to explore the links between migration and subjective well-being.[3] Migrant has been at its centre-stage, and the main question asked has been whether migration experience makes people happier (Bartram, 2011; Bartram, 2013; De Jong et al., 2002; Senik, 2011; Stillman et al., in press). Closely related to this question has been an interrogation of whether, in a source country, it is the happier people who are more likely to migrate, i.e. whether migrants positively or negatively select on the basis of subjective well-being (Cai et al., 2014; Chindarkar 2014; Otrashchenko and Popova, 2014; Bartram, 2013; Graham and Markowitz, 2011).

There are several reasons why it is important to understand the interplay between migration and subjective well-being. First, local and national governments across the world have been increasingly considering and adopting happiness and life satisfaction as key policy variables capturing individual welfare and societal progress (OECD, 2013; Office for National Statistics, 2013; Helliwell et al., 2013; Diener et al., 2009). In this regard, policymakers in receiving countries may be willing to know not only how migration affects natives' wages and employment prospects, but also whether migration makes local people less (or more)

[2] A description of migration from Slovenia in the beginning of 20th century, provided in 1906 by a Slovenian politician Anton Korošec (Drnovsec, 2009: 61).
[3] See Simpson (2013) and International Organisation for Migration (2013) for an overview of this literature.

happy. Similarly, governments of migrant-sending countries may want to know how emigration and remittances affect those left behind.[4]

Second, it has been shown that higher levels of individual subjective well-being result in greater productivity (Oswald et al., 2012), creativity (Amabile et al., 2005; George and Zhou, 2007), income (De Neve and Oswald, 2012), physical health (Diener and Chan, 2011), sociability, quality of social relationships, social capital, and social behaviour (De Neve et al., 2013; Guven, 2011).[5] Therefore, if a country receives immigrants, it should be interested in getting a high proportion of happy people among them. Happier and, hence, more productive, healthy and sociable migrants will, arguably, put less pressure on the welfare state and integrate more successfully into the host society. However, the flip side of any "happiness gain" for the migrant-receiving countries is "happiness drain" for the migrant-sending countries. The policymakers of the latter should be concerned about the outflow of happy people, as this may deprive them of the many positive externalities that happiness is associated with. Thus, similarly to human capital, happiness is a valuable resource that both migrant-receiving and sending countries may wish to acquire or retain, and a central question that policymakers may wish to ask is whether it is the most or the least happy people who are more prone to migration.

A burgeoning empirical literature has started to address this question. Several micro-level studies suggest that there is a negative *association* between subjective well-being and intentions/ willingness to migrate. Otrashchenko and Popova (2014) use the Eurobarometer data to show that, in Central and Eastern Europe, people less satisfied with life are more likely to report intentions to migrate – both internationally and domestically. Graham and Markowitz (2011) and Chindarkar (2014) find that, in Latin America, subjective well-being and intentions to migrate are negatively correlated. Cai et al. (2014), using Gallup World Survey data for 116 countries, uncover a negative association between life satisfaction and desire to migrate internationally. A more mixed picture is obtained by Polgreen and Simpson (2011), who study the life satisfaction-emigration relationship at country level and find that in relatively unhappy countries emigration rates fall as average country happiness increases,

[4] The effects of migration of the subjective well-being of people in receiving and sending countries are studied by Akay et al. (2014), Betz and Simpson (2013) and Borraz et al. (2008).
[5] See De Neve et al. (2013) for an overview of the effects of subjective well-being on objective outcomes.

while the opposite is true for the relatively happy countries; the highest emigration rates are, thus, observed in the most and the least happy countries.

While the above mentioned studies provide useful insights on the emigration intentions - subjective well-being nexus, they remain correlational studies and tell us little about causal effects of happiness on emigration decision. In particular, endogeneity problems may arise if preparation for migration temporarily renders people more or less happy relative to the underlying, long-term levels of happiness (reverse causality) or if unobserved individual characteristics drive both happiness and intentions to migrate. For example, Nowok et al. (2013) study the evolution of the UK internal migrants' happiness before and after migration and find that migrants experience a significant fall in happiness just before the move; happiness, however, returns to initial levels when the move takes place and remains at these levels thereafter. Such migration-induced temporary drop in happiness supports the set-point theory of subjective well-being, which posits that people have stable underlying levels (set-points) of happiness, transitory deviations from which occur in the face of major life events (marriage, unemployment, illness).[6] While both internal and international migration can well be events which have a temporary effect on migrants' underlying happiness, the question still remains whether it is the happier people (as measured by the stable long-term subjective well-being levels) who are more prone to migration, and how policy-driven increases in individual happiness would affect the propensity to migrate.

At a theoretical level, one could provide arguments in favour of both a negative and positive selection into migration on the basis of subjective well-being. First, one can easily integrate happiness into the (economists' preferred) Neoclassical approach to emigration decision. Assuming that 1) utility is represented by happiness rather than income or consumption and 2) people believe that the attainable happiness levels abroad are on average higher than those at home,[7] the Neoclassical model would predict that it is the least happy who will be more likely to migrate because they have the most to get from migration. However, as a certain amount of income is necessary to overcome migration costs meaning that migrants are not always drawn from the bottom of the income distribution, we can hypothesise that a certain

[6] See Headey (2010) for an overview of the literature on the set-point theory of subjective well-being.
[7] It should be noted that this assumption is in conflict with the set-point theory of subjective well-being, which posits that individual happiness remains unchanged in the long-run. There is no guarantee, however, that prospective migrants are familiar with the set-point theory or that the theory holds in all life situations (Headey, 2010); prospective migrants may therefore continue to believe, rightly or wrongly, that migration would result in happier lives.

degree of happiness is required to overcome the psychological barriers to migration. One has to be open-minded, optimistic and risk-loving in order to cross borders and live abroad; many of these qualities will be positively correlated with subjective well-being. This argument is supported by Ek et al. (2008) who find that rural-to-urban migrants in Finland are more optimistic and satisfied with life than the non-migrants. Polgreen and Simpson (2011) also argue that international migrants tend to be more optimistic, which could explain their finding that, in relatively happy countries, emigration rates increase with average happiness. Thus, it is not unreasonable to expect migrants to be positively selected on the basis of subjective well-being – contrary to the prediction of the happiness-enhanced Neoclassical model. Which of the alternative lines of reasoning fits the reality better is an empirical question, which has not yet been fully answered in the literature.

To fill this gap, I undertake an empirical analysis of the subjective well-being and emigration decision nexus. The data come from the "Life in Transition 2" survey (LITS-2), administered by the EBRD and the World Bank in autumn 2010 in twenty nine post-socialist economies of Central and Eastern Europe and Central Asia. First, I explore the relationship between life satisfaction and emigration intentions in a 'naïve' regression analysis, paying particular attention to possible non-linearities in that relationship, and find a strong evidence for a U-shaped *association* between the two phenomena: the greatest intentions and willingness to move abroad are reported by people who (at the moment of the interview) are the most *and* the least satisfied with their lives. However, the substantive significance of this relationship is low and such result may suffer from endogeneity due to reverse causality or unobserved variables. Therefore, the second, and principal, objective of this study is to determine the causal effects of subjective well-being on emigration decision. This is important as many governments across the world are explicitly aiming at increasing their citizens' levels of subjective well-being. If it turns out that greater happiness leads to a greater desire to emigrate, the usefulness of the happiness-enhancing policies may be questionable.

To identify the causal effects of subjective well-being on emigration intentions, I employ instrumental variable analysis. Ideally, I want the instruments to predict long-term, underlying component of one's subjective well-being and have no independent effect on the desire to emigrate. I hypothesise that such long-tern trends in happiness can be traced back to respondents' childhood environments and instrument subjective well-being with (1) parental education and (2) the fact that someone in the respondent's family was injured or killed

during the World War II. The instruments appear appropriate, and the instrumental variable analysis suggests that life satisfaction has a positive effect on both willingness and intentions to migrate. Uncovering causal effects of subjective well-being on the desire to emigrate is the main contribution of this study to the existing literature, which so far has concentrated on (conditional) correlations between the two phenomena.

The empirical analysis of this paper is based on the use of life satisfaction to capture subjective well-being, and emigration intentions to capture emigration decision. Both measures can be subject to criticism. First, unlike the objective, clearly quantifiable metrics of most variables used in economics, life satisfaction and happiness are self-reported and subjective constructs. They can be understood differently by similar people within and between countries, which makes it potentially difficult to interpret interpersonal comparisons of happiness indices (Di Tella and MacCulloch, 2006). However, the subjective measures of well-being have been extensively validated via psychological and brain-scan research, and shown to be reliable, consistent (across time and space) and comparable measures of individual well-being (Frey and Stutzer, 2002; Layard, 2005; Easterlin, 2001; Polgreen and Simpson, 2011; Diener et al., 2012). Given the increasing importance of happiness for policy, there has recently been an explosion in research on subjective well-being among the economists (see, e.g., MacKerron (2012) for an overview), who have been more willing to accept happiness as a manifestation of utility and well-being.

A final note of caution concerns the use of emigration intentions data as a proxy for actual emigration. Although it is not without criticism – there is no guarantee that intentions will be followed by an actual move – longitudinal studies have shown that emigration intentions are a good predictor of actual future emigration.[8] Creighton (2013) showed that, in Mexico, aspirations to move internally and internationally explain the subsequent moves. Van Dalen and Henkens (2013) found that one-third of native Dutch residents who had stated an intention to move abroad actually emigrated within the following five years. Böheim and Taylor (2002) showed that the propensity to move internally in the UK is three times higher for those who earlier expressed a preference to move than those who did not. At a theoretical level, De Jong (1999, 2000) argues that the intentions to move are the primary determinant of the migration behaviour and Burda et al. (1998) posit that intentions are a monotonic function

[8] See, e.g., Friebel et al. (2013), Ivlevs (2013), Ivlevs and King (2012), and references therein, for recent empirical studies using emigration intentions data to determine the profile of future migrants.

of the variables which motivate migration. A specific advantage of using migration intentions data is that it avoids the sample selection issues that arise from the use of the data on actual immigrants collected by host countries, for instance, when immigration policies are designed to attract more (or less) skilled migrants (Liebig and Sousa-Poza, 2004).[9] It should also be remembered that the migrant – once migrated – can no longer be observed in the source country. Tracking down each migrant after the arrival in the host country and obtaining large representative samples of immigrants would be very costly; at the same time, interviewing large numbers of prospective migrants in home countries is more cost-effective.

The paper proceeds as follows. Section two presents data. Section three discusses the variables used in the analysis. Section four describes the estimation strategy. Section five presents and discusses empirical results, followed by conclusion.

II. DATA

Data for this study come from the "Life in Transition 2" survey (LITS-2), conducted by the European Bank for Reconstruction and Development (EBRD) and the World Bank in autumn 2010. Twenty eight post-socialist economies of Central and Eastern Europe and Central Asia, Mongolia, Turkey, as well as five Western European countries (France, Germany, Italy, Sweden and the UK), participated in the survey. The nationally representative samples consist of 1,000 respondents, aged 18 and above, per country (1,500 respondents in the case of Russia, Ukraine, Uzbekistan, Serbia, Poland and the UK).

In each country, the households were selected according to a two-stage clustered stratified sampling procedure. In the first stage, the frame of primary sampling units was established using information on local electoral territorial units. In the second stage, a random walk fieldwork procedure was used to select households within primary sampling units. Steves (2011) provides the survey summary, including detailed information on survey design and implementation methodology.

[9] However, the population of the origin country is also a selected one, as it excludes people who have already emigrated.

I exclude from our analysis the five Western European countries,[10] as people there tend to have lower emigration propensities than in Eastern Europe and Central Asia. Excluding Western Europe allows concentrating on a set of Eastern European and Central Asian countries which share similar historical, economic and institutional backgrounds. Many of these countries witnessed important emigration following the break-down of the socialist block and, as a group, they are known to have relatively low life satisfaction levels (Easterlin, 2009; Guriev and Zhuravskaya, 2009).

III. VARIABLES

1. Dependent variable: emigration intentions

I use two questions to create two dichotomous variables capturing individual likelihood of migration. The first variable, *emigration intentions,* draws on the question "Do you intend to move abroad in the next 12 months?" (possible answers 'yes' or 'no'). The second variable, *willingness to migrate,* draws on the question "Would you be willing to move abroad for employment reasons?" (possible answers 'yes' or 'no').

A preferred dependent variable is *emigration intentions*, as the question used to construct it is unambiguous, and the specified time frame (12 months) provides respondents an additional focus. In contrast, the question used to construct the *willingness to migrate* variable is more vague and can be interpreted in different ways: some respondents might think of their general predisposition to migration, while others might think it is a hypothetical question and report their likelihood of moving abroad is *if* a specific need to do so arises.

Out of all respondents, 27% said they would be willing to move abroad, and only 5% said they intended to move abroad in the following 12 months. While one would expect emigration intentions to be a subset of willingness to migrate, it does not have to be case: 26% of respondents intending to migrate provided a negative answer to the willingness

[10] The final dataset consists of Albania, Armenia, Azerbaijan, Belarus, Bosnia, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, former Yugoslavian Republic of Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Turkey, Ukraine and Uzbekistan. Turkey and Mongolia – two countries which are typically not associated with the post-socialist world – are also kept in the sample; the results do not change if Turkey and Mongolia are excluded.

question, i.e., said they would not be willing to migrate for employment purposes. This could be because *willingness to migrate* refers specifically to work migration, while *emigration intentions* captures, more broadly, all types of migration – work, family reunification, student etc. It should also be noted that the two questions were asked in different sections of the survey, which excludes the possibility of a cognitive bias, where the answers to one question condition the answers to the other.

2. *Main regressor: life satisfaction*

Respondents' life satisfaction is captured by the question, "All things considered, how satisfied or dissatisfied are you with your life as a whole these days? Please answer on a scale from 1 to 10, where 1 means completely dissatisfied and 10 means completely satisfied". This question, standard in interview surveys, provides a subjective measure of respondents' well-being.[11] However, as such, it may present several challenges for our analysis. First, the rankings of life satisfaction are likely to be conditioned by country-wide cultural and linguistic factors and may not be comparable across countries. To ensure that the results draw on within- rather than between-country variation in life satisfaction, I include country-fixed effects, which will capture all country-wide differences in life satisfaction.

The second concern is the question's loosely defined time frame. A typical rationale for including "these days" in the question is to discount any spontaneous deviations in subjective well-being at the day of the interview and to make respondents take a longer term perspective on their life satisfaction. However, it is not clear how a potential change in life satisfaction due to the prospect of migration would fit into "these days" time frame. As mentioned before, respondents who have taken a decision to move abroad may be temporarily off their 'normal', longer-term life satisfaction levels. To capture respondents' underlying life satisfaction, I will use instrumental variables - factors correlated with individual life satisfaction but having no independent effect on emigration decision - to predict life satisfaction.

[11] The *Life in Transition-2* survey does not contain a question on happiness - another standard measure of subjective well-being. This is unfortunate, as happiness could have been used to check the robustness of our econometric results. Note, however, that there is no obvious reason to prefer one measure of wellbeing to the other; where available, happiness and life satisfaction are highly correlated and tend to produce almost identical results (Simpson, 2013).

3. *Control variables*

To isolate the effect of life satisfaction on emigration intentions, one must control for potential confounders – variables potentially affecting subjective well-being, emigration decision, or both. Previous literature has shown that factors such as gender, age, family composition, ethnic/linguistic minority status, education, income and employment status are important determinants of both subjective well-being and emigration decision. Therefore, I include dummy variables for gender (female), five age groups, five marital status groups (single, married/ living with a partner, divorced/separated, widow), having children, three education levels (primary, secondary, tertiary) and being employed. The minority status is captured by the information on the respondent's mother tongue – the linguistic minority dummy is equal to 1 if it is different from the respondent's country of residence state/official language(s). Dummy variables for three types of settlement (rural, urban, metropolitan) are also included.

Income is a crucial control variable potentially affecting both the decision to migrate and life satisfaction. Unfortunately, the survey does not contain information on respondent or household actual income.[12] Therefore, I consider different proxies for household income. First, I used information on household assets (car, secondary residence, bank account, debit card, credit card, mobile phone, computer and internet access at home) to create a wealth index using principal components. Second, I used information on where respondents thought they were on a ten-step income ladder, where the first (tenth) step captures the poorest (richest) 10% of the country. While this variable may suffer from subjectivity bias (there is no guarantee that everyone imagines the ten-step income ladder in the same way), it is important to recognise that a *perception* of own income, especially relative to one's reference group which can well be a country, may be an important determinant of both migration (Stark and Taylor, 1991) and life satisfaction (Clark et al., 2008). Third, I include a variable *financial satisfaction*, constructed from the question, "All things considered, I am satisfied with my financial situation as a whole" (five possible answers ranging from "strongly disagree" (1) to "strongly agree" (5)). Financial satisfaction has been shown to be a strong predictor of life satisfaction, especially in poorer countries (Oishi et al., 1999), and, as a

[12] The survey contains information on household monthly expenditure on different goods (food, utilities, transport, education, health, clothing and durable goods), as well as information on household monthly savings. I use this information to create a total expenditure and savings adult equivalence variable. Closer inspection of this variable revealed a 'don't know'/ non-response rate of 46% and it was decided not to use it because of the huge loss in information this would cause.

manifestation of individual income and/or wealth, could also matter for shaping emigration intentions. The three proxies of income are positively, but less than perfectly,[13] correlated, and will be jointly included in our model.[14]

A particular challenge is presented by finding a proxy for migrant networks – a crucial driver of emigration decision. Unfortunately, only those respondents who said they intended to emigrate in the following 12 months were asked whether they had friends or relatives in the place they planned to move to. This information cannot be used to construct a networks dummy, as it would be conditioned by the dependent variable. Instead, I use all the information which can indicate indirectly that a respondent might have family or friends connections abroad. First, in the section on the impacts of the global economic crisis, the respondents were asked whether, in the two years prior to the interview, they had experienced a fall in remittances and a household member had returned from working abroad. Second, the respondents who said they had worked in the previous 12 months were asked about where the work was primarily done, with 'abroad' being one of the possible answers. I construct a *migrant networks* dummy which is equal to 1 if at least one of the following is true: 1) respondent's household experienced a crisis-related fall in remittances; 2) a household member returned from abroad due to the crisis; 3) the respondent worked abroad in the last 12 months, and 0 otherwise. With the average of 0.15, this variable represents a lower bound of the intensity of migrant networks.

I also want to control for the respondents' health status, as previous literature suggests that good health has a strong positive association with subjective well-being (MacKerron, 2012; Diener and Chan, 2011); in addition, it could be argued that good health matters for migration. The respondents were asked, "How would you assess your health?" Possible answers "very good" and "good" are coded into a *good health* dummy, "very bad" and "bad" into a *bad health* dummy, with *"medium" health* remaining the reference category.

Finally, to control for all possible country-wide influences on emigration decision and life satisfaction, I include country dummies. This will also ensure that the analysis captures within-country individual-level relationships between the variables of interest.

[13] The correlation between wealth index and perceived income decile is equal to 0.30, between wealth index and financial satisfaction, 0.14, and between perceived income decile and financial satisfaction, 0.44.
[14] As a robustness check, to control for possible non-linearities in the emigration intentions-income relationship, I have replaced continuous perceived relative income and financial satisfaction variables with a set of dummies capturing their different values. This did not affect the results of the life satisfaction variable.

IV. IDENTIFICATION OF CAUSAL EFFECTS

The principal objective of this study is to establish causal effects of life satisfaction on emigration intentions. To identify causality, I use instrumental variable analysis. The method relies on the availability of instruments which are relevant (highly correlated with the life satisfaction) and exogenous (affecting emigration intentions only through life satisfaction). Ideally, I also want the instruments to predict the long-term, underlying component of one's life satisfaction. Arguably, such long-term trends in subjective well-being can be traced back to respondents' childhood environments. As the LITS-2 survey contains some information on respondents' parents and other family members, I explore this information to construct the instruments.

The first instrument is parental years of education. I argue that, other things equal, more educated parents are more responsive to the emotional needs of their children, which, in turn, has a positive long-term effect on the subjective well-being of the children. Therefore, I expect parental schooling to be positively correlated with respondents' current life satisfaction. In practical terms, respondents were asked about the level of schooling (completed years of education) of their mother and father. I choose father's years of education, as it has higher predictive power in the first stage regression than mother's schooling.[15]

The second instrument captures the fact that a respondent's family member was a victim of World War II (WWII) and is based on the question "Were you, your parents or any of your grandparents physically injured or killed during the Second World War?" Frey (2012) discusses various channels through which wars can affect the well-being of soldiers, their family members and other civilians. On the one hand, one would naturally expect wars to reduce happiness; there is ample evidence that soldiers returning from wars are more likely to suffer from post-traumatic stress disorder, depression, and alcohol and drug abuse, as well as to commit crime, violence and suicide.[16] However, Frey (2012) also argues that wars can increase happiness of soldiers and their family members. In retrospect, soldiers and victims of

[15] The F test of excluded instrument for father's schooling is 24.22 and for mother's schooling 18.50. If both are jointly included as instruments, mother's schooling becomes statistically insignificant, while father's remains highly significant, and the F test statistic reduces to 12.13.
[16] See Frey (2012) for an overview of this literature.

war may reconsider their war experience in a positive light because they are happy to have survived (the 'afterglow' effect). Fighting in wars may result in feelings of shared purpose, solidarity, trust, friendship and national pride, all of which could enhance happiness. Many wars, including WWII, were proclaimed as serving a desirable goal, and family members may not mourn and actually be proud that someone in their family died as a 'martyr' or was fighting for a 'good' or 'holy' cause. It is, thus, possible that people fighting for, and affected by, such 'ennobling' wars "convert the costs of war into psychic benefits" (Frey, 2012, p.369).

In soviet times, WWII played, and in some countries continues to play, a major role in political discourse and ideology, and the formation of national identities. The victims of WWII,[17] surviving soldiers and civilians who suffered during the war were officially venerated as the heroes of the 'Great Patriotic War'. WWII occupied a prominent place in the minds of ordinary citizens: it was a major life event for people who were engaged in it, and the war memories were – and continue to be – passed through generations. Thus, the children and grandchildren of people who were killed, injured or suffered during WWII had all the reasons to be proud about the heroic past of their family members. They enjoyed different forms of societal and institutional respect and attention, and were exposed to (often 'ennobled') family stories of war hardships, survivals and deaths. All these factors may have had a positive effect on the psychological development and well-being of the WWII victims' descendants, and one can expect that, today, these people report higher levels of subjective well-being relative to people in similar circumstances but without the presence of WWII 'heroes' in the family.[18]

To test whether the instrument are relevant, the F test of the joint significance of excluded instruments will be conducted after the first stage regression. A value higher than a commonly accepted threshold of 10 would indicate that instruments are relevant (sufficiently strong predictors of life satisfaction). In addition, it is important that each instrument is individually statistically significant in the first stage equation.

Proving instrument exogenity is the most challenging part of the instrumental variable analysis. Strictly speaking, the exogeneity of instruments cannot be technically proven, and

[17] For the Soviet Union alone, the WWII death toll exceeded 20 million people (Ellmann and Maksudov, 1994).
[18] Frey (2011, 2012) also discusses the phenomenon of 'combat flow' – energising and addictive combat experience which may increase soldiers' subjective well-being during the war. It is, however, unlikely that this particular happiness gain would persist after the war or would be transmitted across generations.

one has to *believe* that instrument(s) affect the outcome of interest only through the endogenous regressor. The instrument over-identification test, which is widely used to test instrument exogeneity, rests on the *assumption* that at least one instrument is valid.

In this regard, the WWII instrument would seem a more convincing option: apart from the proposed life satisfaction channel, it is difficult to come up with explanations of why the fact that someone was killed or injured during WWII would affect emigration intentions of his/her descendants more than sixty years later, especially if one controls for the respondent's standard socio-demographic characteristics, such as income, education etc. The exogeneity of the parental education instrument is more questionable. More educated parents might have explicit strategies of preparing their children for emigration, such as investing in their foreign language skills. Also, children of more educated parents might have more experience of travelling and higher (unobserved) innate ability, both of which might affect emigration propensity. Another indirect channel is related to the fact that, during communist times, highly educated people were more likely to be members of the Communist party. If the political capital was transferred after the regime change, the descendants of the party members might currently be benefitting from wider resources which would help either to emigrate or find employment at home. The communist party channel may also be an issue for the WWII instrument, if the party members were more likely to fight in the war or if the party explicitly targeted the WWII veterans to become its members.

Given these concerns, both first and second stage regressions of the instrumental variable analysis will control for the parental and familial links to the Communist party (the respondents were asked whether they themselves, their parents or other family members were members of the party before the dissolution of the socialist block). The standard overidentification test of instrument exogeneity will then be performed; a statistically insignificant test statistics would support the hypothesis that the instruments are exogenous.

Finally, to check whether endogeneity is present in the model in the first place, the regressor endogeneity test will be conducted. It tests whether residuals from the first-stage regression are correlated with the residuals of the structural model. A coefficient statistically different from zero would indicate that endogeneity is present and the instrumental variable estimation should be used; if the correlation is insignificant, the endogenous regressor can be treated as exogenous and a naïve model is sufficient.

Despite the binary nature of the dependent variable (intentions to migrate/ willingness to work abroad), the instrumental variable models will be estimated with the two stage least squares and the corresponding naïve models (which do not account for the endogeneity of life satisfaction) with OLS. The linear IV model is preferred to the IV probit estimation, as the latter does not produce all the instrument validity tests[19] and the results of the linear model are easier to interpret. As a robustness check, the naïve and IV probit models have also been estimated; the probit results are qualitatively similar to the results of the corresponding linear models and are available on request.

Individuals older than 64 are excluded from the analysis, as, generally, they have very low propensities to migrate. All estimations use robust standard errors, clustered at the locality (village/ town/ city) level, and apply within-country population weights available from the survey dataset.

V. RESULTS

Column 1 of Table 1 reports the results of a naïve linear probability model explaining the intentions to move abroad with life satisfaction, socio-demographic controls and country-fixed effects. The regressor of interest, life satisfaction, is a negative, significant at 10% and, in terms of magnitude, very modest covariate of emigration intentions. Keeping other factors constant, one step on the 1 to 10 life satisfaction scale is associated with a 0.0018 decrease in the dependent variable. A naïve regression, thus, would suggest that it is the unhappier people who are more likely to report intentions to migrate, although the difference in the probability of reporting emigration intentions between people who are the least and the most satisfied with their lives is only 1.8 percentage points. This relationship is represented by a relatively flat dashed line on the left panel of Figure 1.

A different picture emerges if the squared term of the life satisfaction variable is also included in the regression (column 2). Now both life satisfaction and its square are strongly significant. The negative coefficient of the former and the positive coefficient of the latter imply a U-shaped relationship between life satisfaction and the probability of reporting

[19] For example, the ivprobit command in Stata does not include the instrument overidentification test. See also Ivlevs and King (2012) for a discussion of testing instrument exogeneity in non-linear models.

emigration intentions, with the turning point corresponding to 6.20 units of life satisfaction. For relatively low levels of life satisfaction (lower than 6.20/10), the likelihood of reporting intentions to migrate falls with the reported life satisfaction; for relatively high levels of life satisfaction (higher than 6.20/10), the likelihood of reporting intentions to migrate increases with reported life satisfaction. This said, the substantive significance of the life satisfaction variables is low. As can be assessed from the solid line on the left panel of Figure 1, a movement on the life satisfaction scale from 1 to 6.20 (the inflection point) is associated with an approximately 4 percentage points lower probability of reporting emigration intentions, while a movement from 6.20 to 10 is associated with a 2.2 percentage points higher probability of reporting emigration intentions.

Similar results are obtained if the dependent variable is willingness to migrate. When the life satisfaction variable is included without its square (column 3 of Table 1), its coefficient is negative but statistically insignificant. A joint inclusion of the two life satisfaction variables (column 4) again suggests a statistically significant U-shaped relationship between willingness to migrate and the main regressor, with the implied turning point occurring when the value of the life satisfaction variable is equal to 5.61 (which is close to the mean value of the life satisfaction variable, 5.37). In terms of the actual impact on the dependent variable, a movement from 1 to 5.61 (5.61 to 10) in life satisfaction is associated with a decrease (increase) in the probability of reporting willingness to migrate of 5.5 (4.1) percentage points (right panel of Figure 1). Thus, the naïve regression results suggests that, as life satisfaction increases, both intentions and willingness to migrate first decrease and then increase with it, and the substantive significance of the life satisfaction variable is low.

Before proceeding to the instrumental variable results, I would like to comment on the coefficients of the socio-demographic controls. They are largely in line with what one would expect: women, older people, those satisfied with their financial situation are less likely express desire to migrate, while the single and those with migrant networks are more likely to do so. Wealth index has a positive association with both dependent variables, which could be explained by the necessity to have initial capital to cover migration costs. Linguistic minorities also appear more prone to migration, which can be explained by the various types of disadvantages that minorities face in source countries and is consistent with previous literature (see, e.g., Ivlevs, 2013). Higher levels of education, living in urban areas and having familial Communist party connections before fall of the socialist block are associated

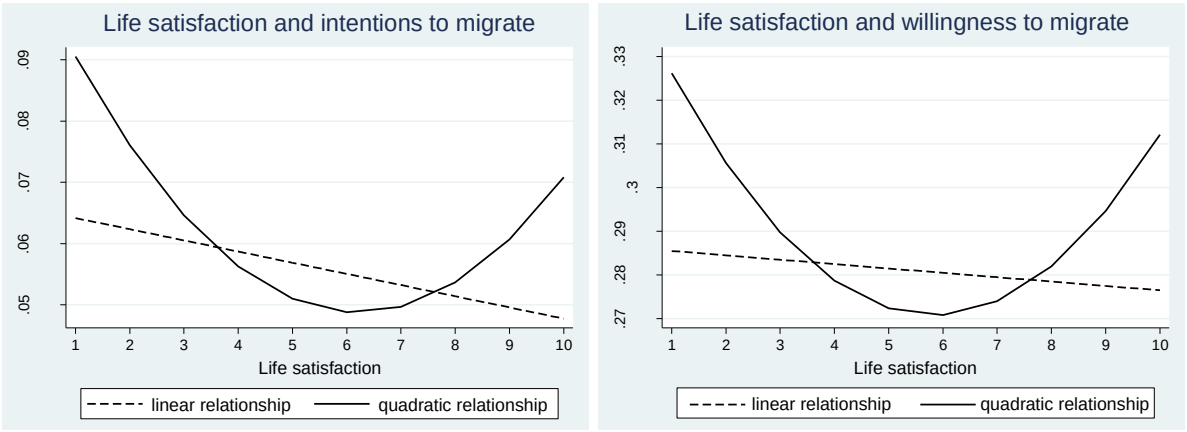
with a higher willingness (but not intentions) to migrate. These respondent groups could be characterised by particular aspirations for superior quality of life (amenities, health care, education, well-functioning institutions), as well as access to specific information or networks which may facilitate migration.

Table 1. Life satisfaction and intentions/willingness to move abroad, linear probability model (OLS) results.

	Intentions to move abroad (0/1)		Willingness to work abroad (0/1)	
	[1]	[2]	[3]	[4]
Life satisfaction (1 – low, … 10 – high)	-0.0018*	-0.0191***	-0.0010	-0.0277***
Life satisfaction squared/100	-	0.154***	-	0.247***
Female	-0.028***	-0.027***	-0.065***	-0.064***
Age group				
18-24	0.019***	0.019***	0.106***	0.106***
25-34	0.011**	0.011**	0.045***	0.045***
35-44	Ref.	Ref.	Ref.	Ref.
45-54	-0.016***	-0.016***	-0.062***	-0.062***
55-64	-0.021***	-0.021***	-0.137***	-0.136***
Marital status				
Single	0.034***	0.034***	0.104***	0.103***
Married/ relationship	Ref.	Ref.	Ref.	Ref.
Divorced/ separated	0.020***	0.019***	0.049***	0.048***
Widow	0.007	0.006	-0.016	-0.018*
Has children	-0.003	-0.004	-0.013*	-0.013*
Linguistic minority	0.022***	0.022***	0.033**	0.032**
Education				
Primary	-0.003	-0.004	-0.031***	-0.031***
Secondary	Ref.	Ref.	Ref.	Ref.
Tertiary	-0.001	-0.001	0.038***	0.038***
Wealth index	0.005***	0.005***	0.023***	0.023***
Perceived income decile (1 – low.. 10 – high)	-0.001	-0.000	-0.009***	-0.008***
Satisfied with financial situation (1 – low.. 5 – high)	-0.003*	-0.003*	-0.028***	-0.027***
Employed	-0.002	-0.001	0.029***	0.030***
Type of settlement				
Rural	-0.002	-0.002	-0.033***	-0.032***
Urban	Ref.	Ref.	Ref.	Ref.
Metropolitan	-0.007	-0.008	0.003	0.003
Health				
Bad	-0.006	-0.009*	0.006	0.002
Medium	Ref.	Ref.	Ref.	Ref.
Good	0.001	0.001	0.006	0.006
Migrant networks	0.032***	0.031***	0.031***	0.031***
Family member in communist party before 1991	0.001	0.001	0.026***	0.027***
Country fixed effects	Yes	Yes	Yes	Yes
Observations	26358	26358	26358	26358
R^2	0.064	0.065	0.114	0.114
F tests (p > F)	0.000	0.000	0.000	0.000

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors, clustered at locality level, used to calculate regressors' statistical significance.

Figure 1. Life satisfaction and predicted intentions/ willingness to migrate.



Note: In reference to Table 1, the dashed line represents specifications 1 and 3, and the solid line represents specifications 2 and 4.

Next, I turn to the results of the instrumental variable estimation (Table 2). First, the regressor endogeneity test strongly rejects the hypothesis that the error terms from the first-stage equation are uncorrelated with those of the structural model, meaning that endogeneity is present and instrumental variable estimation should be used. The first-stage results (column 1) suggest that the instruments are individually statistically significant and have expected signs: other things equal, both father's schooling and having a relative who was either killed or injured in the WWII are positively and significantly correlated with life satisfaction. The relevance of the instruments is confirmed by the F test value of 12.52, which is higher than the threshold value of 10. The insignificant statistic of the overidentification test (0.51 for the intentions and 0.91 for the willingness model) suggests that the instruments are exogenous i.e., they influence intentions to migrate only through life satisfaction. The tests, thus, support the appropriateness of the chosen instruments.

The instrumental variable estimation (columns 2 and 3) shows that life satisfaction exerts a positive and statistically significant effect on the probability of reporting intentions and willingness to migrate. Moving up one step on the life satisfaction scale increases the probability of reporting intentions and willingness to migrate by 14.6 and 31.7 percentage points, respectively. These relatively large, in terms of magnitude, effects counter the correlational evidence of this and other studies, which point at a negative association between

Table 2. Life satisfaction and intentions/willingness to move abroad, 2SLS results.

	Instrumental variable probit estimation		
	First stage Dependent variable: Life satisfaction	Second stage: Intentions to move abroad (0/1)	Second stage: Willingness to work abroad (0/1)
	[1]	[2]	[3]
Life satisfaction (1 – low, … 10 – high)	-	0.146***	0.317***
Female	0.062**	-0.042***	-0.097***
Age group			
18-24	0.259***	-0.021	0.021
25-34	0.042	0.003	0.029*
35-44	Ref.	Ref.	Ref.
45-54	0.059	-0.022***	-0.070***
55-64	0.235***	-0.053***	-0.215***
Marital status			
Single	-0.047	0.038***	0.110***
Married/ relationship	Ref.	Ref.	Ref.
Divorced/ separated	-0.251***	0.055***	0.119***
Widow	-0.226***	0.044***	0.058**
Has children	0.075**	-0.013*	-0.034**
Linguistic minority	-0.126**	0.047***	0.082***
Education			
Primary	-0.104***	0.018*	0.014
Secondary	Ref.	Ref.	Ref.
Tertiary	0.163***	-0.028***	-0.022
Wealth index	0.132***	-0.015**	-0.022*
Perceived income decile (1 – low.. 10 – high)	0.348***	-0.052***	-0.119***
Satisf. with financ. situation (1 – low.. 5 – high)	0.403***	-0.063***	-0.158***
Employed	0.018	-0.009	0.024*
Type of settlement			
Rural	0.005	-0.001	-0.035*
Urban	Ref.	Ref.	Ref.
Metropolitan	0.044	-0.010	-0.017
Health			
Bad	-0.313***	0.045***	0.112***
Medium	Ref.	Ref.	Ref.
Good	0.234***	-0.033***	-0.071***
Migrant networks	-0.078*	0.046***	0.050***
Family member in communist party before 1991	-0.094***	0.011	0.057***
Country fixed effects	Yes	Yes	Yes
Instruments:			
Father's years of education	0.019***		
Family member killed or injured in WWII	0.088***		
Regressor endogeneity test (p-value)		0.000	0.000
F test of excluded instruments	12.516***		
Overidentification test (Hansen J stat p-value)		0.510	0.910
Observations	20605	20605	20605
F tests (p > F)	0.000	0.000	0.000

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors used to calculate regressors' statistical significance.

the subjective well-being and desire to emigrate.[20] This discrepancy could be explained by reverse causality, whereby preparation for migration temporarily reduces subjective well-being. It is also possible that the bias is due to unobserved variables: for example, sudden problems with one's job or a deterioration of relationships in one's family – factors which are generally not taken into account in naïve cross-sectional studies – would both reduce subjective well-being and increase the desire to migrate.

Dealing with missing values for parental education

A closer look at Tables 1 and 2 reveals that the sample size in the instrumental variable estimations is about four fifths of the sample size for naïve regressions. This is because 23 percent of the respondents did not provide an answer to the question on father's education and therefore had to be excluded from the instrumental variable estimations. Such a high non-response rate could bias the instrumental variable results. In this subsection, I comment on several checks conducted to find out whether such bias is present.

First, I check whether selection bias is present in the naïve estimations which exclude respondents who did not provide an answer on their father's education. Using a Heckman correction model, where the non-response on mother's education serves as identification variable for providing an answer on father's education, no evidence is found that selection bias is present; in other words, estimating the model on a restricted sample does not produce biased estimates.[21] This is confirmed by virtually the same results of the estimations which exclude respondents who did not report the education of their father and the corresponding full-sample estimations presented in Table 1.

Second, I recode the years of father's education variable into a binary variable *father with higher education*, which take the value of 1 if father had at least 15 years of schooling (which

[20] I have also checked whether the instrumental variable estimation supports a curvilinear relationship between life satisfaction and intentions/ willingness to migrate. The F test of excluded instruments supports the hypothesis that the instruments are valid (which is not surprising given that the two endogenous regressors are related); however, the overidentification test cannot be performed as the two endogenous regressors (life satisfaction and its square) are now predicted by two instruments. The IV results are statistically insignificant and do not support a curvilinear relationship between life satisfaction and intentions/ willingness to migrate.

[21] The Wald test of independent equations rejects the hypothesis that a sample selection bias is present – the Rho coefficient is statistically insignificant both in the model explaining intentions to move (p=0.31) and in the model explaining willingness to move (p=0.48). For a formal treatment of Heckman correction model, see, e.g., Wooldridge (2010).

would correspond to completed university-level education) and 0 if father had less than 15 years of schooling (primary, secondary and secondary vocational education) or when the information of father's education is missing; effectively, I am assuming that the education level of the non-respondents' fathers is less than completed university-level education.[22] Replacing father's years of education with father's higher education dummy in the instrumental variable estimations suggests that moving up one unit on the 1 to 10 life satisfaction scale results in a 15.2 percentage points higher probability of reporting intentions to migrate and a 30 percentage points higher probability of reporting willingness to migrate. These results are in line with those obtained using a restricted sample.

VI. CONCLUSION

This paper has studied how people select into migration on the basis of subjective well-being in 30 countries of Eastern Europe and Central Asia. It aimed explicitly at determining the causal effects of life satisfaction on the desire to emigrate – a question of particular importance for an increasing number of policymakers across the world, who aim at increasing people's subjective well-being. The analysis of causal effects, where life satisfaction was instrumented with parental education and the fact that someone in the family was injured or killed during WWII, revealed that higher levels of life satisfaction contribute to a higher probability of reporting emigration intentions and willingness to migrate.

This result should be disturbing news for policymakers in migrant-sending countries. Recent evidence suggests that higher levels of subjective well-being make people more productive, creative, healthy and sociable. The outflow of happy people – 'happiness drain' – would deprive migrants-sending countries of these positive externalities of happiness. More generally, the positive effect of subjective well-being on the desire to emigrate puts under question the worthwhileness of happiness-enhancing initiatives: why increase people's happiness if happier people are more likely to migrate? On the other hand, the positive selection of migrants on the basis of subjective well-being should be good news in migrant-

[22] Regressing the non-responses to the parental education question on the socio-demographic controls in a binary probit model reveals that respondents with lower levels of education are particularly likely to provide a non-response. Given that parents' and children's education levels tend to be highly correlated (intergenerational transmission of education), one may expect the non-responses to be positively correlated with lower levels of parental education.

receiving countries. Happier, hence more productive, healthy and sociable migrants, are likely to put less pressure on the welfare state and integrate easier into host societies, compared to the situation where migrants were negatively selected on subjective well-being.

Several notes of caution, however, have to be made. First, the desire to emigrate does not always need to translate into an actual move.[23] 'Dreaming' about emigration – expressing a desire to migrate which is never followed by actual migration – may well be a characteristic of a happy person. Second, even if it is the happiest people who are more prone to emigration in sending countries, their level of subjective well-being may still remain below that of people in the host society. Under such circumstances, the benefits of high subjective well-being in terms of greater productivity, health and sociability may not fully materialise. Third, it is possible that migration experience makes people less happy.[24] If this is the case, the happiness capital that migrants bring with them into the host society, and the associated long-term benefits, may erode.

Taken together, a well-informed policy advice will need to draw on the answers to several questions: 1) how actual migrants select on subjective well-being in sending countries; 2) whether experience of living in a host country makes people more or less happy; and 3) whether, after a period of adaptation in the host country, migrants are more or less happy than natives. While this and other studies have already shed some light on these questions, no study has yet addressed all three questions *jointly* in relation to the *same* migrants. An ambitious data collection effort, which, for a particular migration episode, would involve both origin and destination countries and follow migrants over time, is key in providing a complete picture on the migration - subjective well-being nexus.

[23] The existing evidence on the link between willingness/ intentions to migrate and the actual move is available for the UK (Boheim and Taylor, 2002), the Netherlands (van Dalen and Henkens, 2013) and Mexico (Creighton, 2013). It is unclear how strong this link is in the post-socialist countries of Eastern Europe and Central Asia.

[24] Bartram (2010) summarises various channels through which migration experience might reduce one's subjective well-being. They include: a fall in relative position when migrants change their reference groups from the origin to destination country populations; exposure to new consumption patterns and higher levels of affluence which change migrants' aspirations but do not necessarily lead to their fulfilment; developing a mental illness, such as depression, as rates of mental illness are higher in wealthier than poorer countries. These factors are related to the migrants' adaptation to the new environment in the host country and are not necessarily taken into account when the decision to migrate is being made.

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Appendix.

Summary statistics.

	Obs.	Mean	St.dev.	Min	Max
Intentions to emigrate	27862	0.054	0.226	0	1
Willingness to work abroad	27862	0.272	0.445	0	1
Life satisfaction (1 – low, … 10 – high)	27856	5.369	2.039	1	10
Female	27821	0.604	0.489	0	1
Age group					
18-24	27862	0.152	0.359	0	1
25-34	27862	0.243	0.429	0	1
35-44	27862	0.221	0.415	0	1
45-54	27862	0.206	0.404	0	1
55-64	27862	0.178	0.382	0	1
Marital status					
Single	27675	0.216	0.412	0	1
Married/ relationship	27675	0.637	0.481	0	1
Divorced/ separated	27675	0.089	0.285	0	1
Widow	27675	0.058	0.233	0	1
Has children	27862	0.442	0.497	0	1
Linguistic minority	27862	0.131	0.337	0	1
Education					
Primary	27860	0.256	0.437	0	1
Secondary	27860	0.538	0.499	0	1
Tertiary	27860	0.206	0.405	0	1
Wealth index	27862	-0.071	1.678	-2.711	3.328
Perceived income decile (1 – low.. 10 – high)	27400	4.437	1.658	1	10
Satisf. with financ. situation (1 – low.. 5 – high)	27064	2.723	1.110	1	5
Employed	27862	0.558	0.497	0	1
Type of settlement					
Rural	27862	0.414	0.493	0	1
Urban	27862	0.469	0.499	0	1
Metropolitan	27862	0.116	0.321	0	1
Health					
Bad	27722	0.091	0.287	0	1
Medium	27722	0.330	0.470	0	1
Good	27722	0.580	0.494	0	1
Migrant networks	27862	0.154	0.361	0	1
Father's years of education	21509	9.705	4.097	0	50
Family member killed or injured in WWII	27862	0.246	0.431	0	1
Family member in communist party before 1991	27862	0.365	0.481	0	1

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