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2017

Online at <https://mpra.ub.uni-muenchen.de/75512/>

MPRA Paper No. 75512, posted 10 December 2016 09:46 UTC

The size and effects of emigration and remittances in the Western-Balkans: Forecasting based on a Delphi process

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Abstract

The objective of this paper is to forecast the size and effects of remittances and emigration in four Western-Balkan countries: Macedonia, Albania, Serbia and Kosovo, through application of a qualitative forecasting method: a Delphi questionnaire. We solicited consensus building within and between two groups of respondents: 10 experts and 20 receivers were consulted per country in three subsequent rounds - two on the same group, and a third cross-round whereby average answers of receivers were given to experts, and vice versa. Consensual results suggest that remittances in the projected five-year period will increase in Macedonia and Serbia, and will reduce in Albania and Kosovo. With lower consensus, results forecast that emigration will decelerate in Macedonia, Albania and Kosovo, and will accelerate in Serbia by 2021. Emigration effects for the society have been forecasted to be predominantly negative due to skilled labour emigration, while remittances were forecasted to maintain their effect on poverty in Macedonia and Serbia, and weaken it in Albania. In all four countries, expert and receivers were in agreement that remittances will continue to support current consumption only. On the other hand, Macedonians lacked consensus on remittances' effect on the labour market, whereby experts agreed that remittances will support inactivity, while receivers – employment. On the other hand, there has been a consensus achieved in the other three countries that remittances will support labour-market activity.

Keywords: remittances, emigration, forecasting, Delphi

JEL classification: O15, F22, F24

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1. Introduction

The Western Balkans⁶ have been always known by facing large emigration rates and hence having large diaspora. At the end of 2013, 5.7 million persons originating from the Western Balkans live abroad, bringing the emigration rate at 31.2% (World Bank), ranging from 18.2% of total population in Serbia to a rampant 45.3% in Montenegro. Only after the dissolution of Yugoslavia, 3.5 million individuals left the region. Hence, the emigration rate has been at 19.4%, and ranging from 9.1% in Serbia to 38.5% in Albania. As a consequence, remittance flows have been sizable: the entire region received 8.6 billion USD in 2015, ranging from 3.1% of GDP in Macedonia to 16.7% in Kosovo. These figures still considerably exceed the inflows from foreign direct investment and official development assistance, 5 and 2.4 billion USD, respectively, hence reflecting the massive dependence of region's economies on the money the diaspora sends back.

The micro- and macroeconomic impact of remittances has been widely documented in the literature. At the macro-level, remittances stabilize the balance of payment, hence contributing to closing the large and persistent trade gaps in many countries, and preserving macroeconomic stability (World Bank, 2005; Ratha, 2005; 2007; Bugamelli and Paterno, 2009; Chami et al. 2009; Gupta et al. 2009). At the micro-level, development effects of remittances, with certain extent of variety, have been documented for poverty alleviation, improving education and health outcomes, improving income distribution, stirring entrepreneurial spirit and the like (Adams and Page 2005; Hildebrandt and McKenzie 2005; Fajnzylber and Lopez 2007; Valero-Gil 2009; Amuedo-Dorantes et al. 2011). Our previous research showed large social and development effects of remittances in the Western Balkans (see Petreski and Jovanovic, eds. 2013; and Petreski and Petreski, eds. 2016, for comparative overviews).

The Great economic crisis (2007-2011), followed by the European debt crisis (2012-2013) created concerns that external resource flows to developing countries may undergo precipitous declines, which could then adversely affect the basic development indicators and potentially reverse some achievements over the preceding decade (World Bank, 2009). After the crisis hit the region in 2008, the average annual decline of remittances received in the

⁶ The institutions of the European Union and its member states have defined the "Western Balkans" as the south-east European area that includes countries that are not members of the European Union, while others refer to the geographical aspects. We herewith count with the following countries: Albania, Bosnia-Herzegovina, Kosovo, Macedonia, Montenegro and Serbia. Until assuming EU membership, Croatia was also a part of the Western Balkans.

Western Balkans has been 1.8%, yet with distinct patterns across countries. Hence, while remittances inflow in the Western Balkans preserved relative stability, they showed not to be counter-cyclical, as the literature usually asserts (Avendano et al. 2011; Ratha, 2010). In addition, with the economic crisis and the fall of the Schengen wall in part of the Western Balkans, these countries faced acceleration of emigration. Entire families, including more educated individuals and families leave for better life. These notions open the question if the magnitude of remittances sent could be maintained for a long time, hence potentially undermining their social and developmental effects onto origin countries. Therefore, policymakers in the region may benefit a forward-looking analysis about emigration rates and remittances.

The paper aims to forecast the size and effects of remittances and emigration in four Western-Balkan countries: Macedonia, Albania, Serbia and Kosovo, through application of qualitative method: a Delphi questionnaire. To our knowledge, qualitative method in migration and remittances' forecasting has not been applied in the literature and, hence, represents the main novelty this paper brings to the literature. In addition, we apply the Delphi method by consensus building *within* and *between* two groups of respondents: experts and remittances, which has not been done before either.

The paper is organized as follows. Section 2 briefly reviews the existing literature on forecasting migration and remittances flows. Section 3 elaborates the underlying methodology. Section 4 presents the results and offers a discussion. Section 5 concludes.

2. Background literature

Remittances have been rarely forecasted, even in the global literature. When forecasted, it has been usually done at the macro-level using relatively simple quantitative models (e.g. Mohapatra and Ratha, 2010; Adedokun, 2013; Gherbovet, 2014; Schmidt and Fertig, 2000). Factors like the stock of migrants, income levels at destination and origin, costs for remitting, exchange rates, interest rate differentials, but also duration of emigration, frequency of family visits and others, have been accounted for in the literature, when attempting to predict the future developments with remittances and migration. However, as Mohapatra and Ratha (2010: 205) note: "While remittances are influenced by all of the above factors, their use in a forecasting exercise is constrained by the lack of reliable forecasts of the future evolution of these explanatory variables." Mohapatra and Ratha (2010) model remittances in a gravity-like

model, whereby the main determinants are incomes at origin and destination, assuming the stock of migrants remains unchanged. Their model correctly predicted the modest decline of remittances following the global crisis. Thanasi (2013) and Adedokun (2013), on the other hand, used a set of time-series methods to forecast the trend of remittances in Albania and Nigeria, respectively. While the effort is worth contemplating about, it may be too naïve by not considering other factors that determine remittances flows, primarily the income of the emigrants and the needs of the household at origin.

Migration has been forecasted more frequently, nevertheless. This has been done in a similar context – either through following past deterministic trends or through devising a form of a gravity model (Kupiszewski, 1998). For example, Layard et al. (1992) is forecasting the East-West migration in Europe after the EU enlargement, by extrapolating earlier findings on the South-North Europe and Mexico-US migration that happened earlier. Similarly, Franzmeyer and Brücker (1997), based on a gravity equation of net migration between Central and Eastern Europe and the then EU-15, forecasted a 0.08 to 0.16% emigration caused by 10% income gap in favor of EU-15. This study predicted a population outflow from Central and Eastern Europe to the EU-15 ranging between 590 and 1,180 thousand persons a year, depending on the pace of income convergence. Other studies widely used econometric gravity-like regressions in forecasting migration; some include: Alvarez-Plata *et al.* (2003); Sinn *et al.* (2001); Schmidt and Fertig (2000); Dustmann *et al.* (2003); Brücker and Siliverstovs (2006); Boeri and Brücker (2001) and many others. An overview of the economic model and econometric tools utilized in the migration forecasting could be found in Bijan (2006).

Despite the general trend to forecast migration flows in quantitative frameworks, few studies attempted to predict migration size based on surveys. For example, Drbohlav (1996) used a two-round Delphi method on a sample of 70 experts in the first round and 39 in the second one, and obtained rough estimates of the magnitude and timing of the expected East-West migration flows in Europe. Fassmann and Hintermann (1997) and IOM (1998) use large surveys of individuals whereby they were asked about their intentions to leave the country and, based on their responses, a probability is derived on emigration patterns.

3. Data and methodology

This study is based on the application of the Delphi method. It originated in a series of studies that the RAND Corporation conducted in the 1950s, with the objective to develop a technique to obtain the most reliable consensus of a group of experts (Dalkey and Helmer, 1963). The method structures a group communication, allowing the group of experts to deal with a complex problem, by arriving at a consensus through several rounds of provided feedback and subsequent revision (Linstone and Turoff, 1975). As Rowe et al. (1991) point out, typically, the method is used in cases where judgmental information is indispensable, through a series of questionnaires interspersed with controlled opinion feedback.

The design of the Delphi questionnaire follows a similar pattern as the standard survey. It is usually composed of few questions, asking either a quantification of certain phenomenon, or delineating of several options in multiple-answer context. Alternatives in the latter case may be either set by the researcher, or derived from a pre-survey among a larger group of field specialists. Then, the appropriate group of respondents is selected; these usually represent field experts, sufficiently qualified to answer the questions. After the first round of surveying is conducted, a second-round questionnaire is designed, based on the first-round one, but also including the aggregate responses (results) of the first round. A questionnaire/survey is designed in a similar manner in each subsequent round, offering the aggregate result of the previous round. In each subsequent round, respondents have the opportunity to revise their answer, based on the new set of information provided. The process is reiterated until satisfactory degree of consensus is reached. The respondents are kept anonymous to each other (though not to the researcher) throughout the process. The final output is formed from the aggregation of all individual opinions. A more detailed technical execution of the Delphi method is presented in Okoli and Pawlowski (2004), while a neat literature review on the revived interest in the application of the Delphi method could be found in Landeta (2006).

Devised in this way, the Delphi method is considered to have the consensus measurement as its key component. However, Dajani et al. (1979) argue that group stability has to be achieved beforehand, i.e. that consensus may be meaningless without group stability. They define group stability as “the consistency of responses between successive rounds of a study” (p.84).

For the purpose of this study, we devise the conduct of the Delphi method as follows. In each of the four countries, we devise two groups of respondents: i) about ten field experts; and ii)

about 20 remittance-receivers per country. The experts are chosen by following their field expertise, i.e. persons who research and/or are professionally investigating the dynamics of migration and remittances in each country. These include researchers at universities/institutes, professionals/researchers at the central banks and ministries of finance; professionals within agencies on migration/diaspora, bankers of foreign payments divisions and the like. This group is in the core of the Delphi design. The other group is composed of about 20 remittance-receivers. While this group is not composed of experts per se, we believe each remittance receiver who, hence, has a migrant abroad, may also provide a reliable judgment on the direction, size and effects of migration and remittances.

Each group passed through two rounds of surveying. There is a third, bridging round. Namely, round two provided the aggregate result of the previous round conducted on the same group and potential revision of the opinions was solicited. The third round provided the aggregate result of the second round on the other group; experts were provided with the aggregate results of the receivers' group, and vice versa, and potential revision invited. Hence, we are tracking the extent of consensus within groups, but also between groups.

There has been much variety in the literature on the methods used to measure consensus and group stability; for neat overview see Von der Gracht (2012). In addition, standards for consensus measurement have never been rigorously set (Mitchell, 1991), supporting the uncontrolled growth in the ways to measure consensus (Meyrick, 2003). For the purpose of this study, we rely on the coefficient of variation to measure consensus level and change. Buck et al. (1993) argue that a consistent decrease of this coefficient between rounds would signify an increase in the consensus, while Zinn et al. (2001) and English and Keran (1976) argue a coefficient of variation at or below 50% to signify that a reasonably good internal agreement has been reached. We set slightly lower cut-off rate of 40%, suggesting that the consensus of 60% (calculated as $1 - \text{coefficient of variation}$) would be considered satisfactory for this study and a stop point after at least two rounds for the same group (hence, not counting the cross round) have been conducted.

To measure groups' stability, we rely on three measures. The first one is a standard t-test, which has been widely used in the literature (e.g. Hakim and Weinblatt, 1993; Buck et al. 1993). We use two variants of the test: for paired samples between round one and two, since we follow the answers' evolution of the same sample; and for independent samples between round two and three, since we compare experts with receivers. The second test is the Wilcoxon signed-rank test whose null is that the two samples follow the same distribution.

Finally, we count the share of individual responses which were maintained between rounds in the total number of answers. For the questions with continuous underlying variable, we consider an answer to be maintained when the subsequent round answer belongs to +/- one standard deviation of the previous round, while for the categorical-variable questions we require that the same answer is obtained again.

4. Results and discussion

4.1. Consensus forecasts

We start analysing the results of the Delphi exercise by presenting some results about the achieved consensus. In all cases, the consensus within groups exceeded 60% even in the first round, then ascending to over 70%, or even close to or above 80% in the second round. These were considered quite satisfactory levels of consensus, adding robustness to the consensual forecasts, as well providing grounds for terminating the within-group number of rounds.

As the third round was between-group one (experts were given the second-round answers of remittances, and vice versa), we were also interested in the between-group consensus, which is given in Table 1. Not surprisingly, in the majority of cases, the consensus further increase, when compared with own-group consensus of the previous round, but also compared with other-group consensus of the previous round. Still, in terms of the latter, there are some notable exceptions. Firstly, the largest consensus drops are observed in two cases: in the case of emigration-size forecasting, and of remittances effect onto the labour market. Second, it is evident that experts' consensus was predominantly reduced when they were given the results of receivers, i.e. they were considerably reluctant to change their opinion which was different than receivers' one, but this information inflicted noise/variability in experts' opinions. On the other hand, receivers tended to more easily approximate/agree with experts' opinion. Slight exception is Serbia, where both groups were noised with the answer of the other group, i.e. refused to change their mind easily.

Table 1 – Between-group consensus

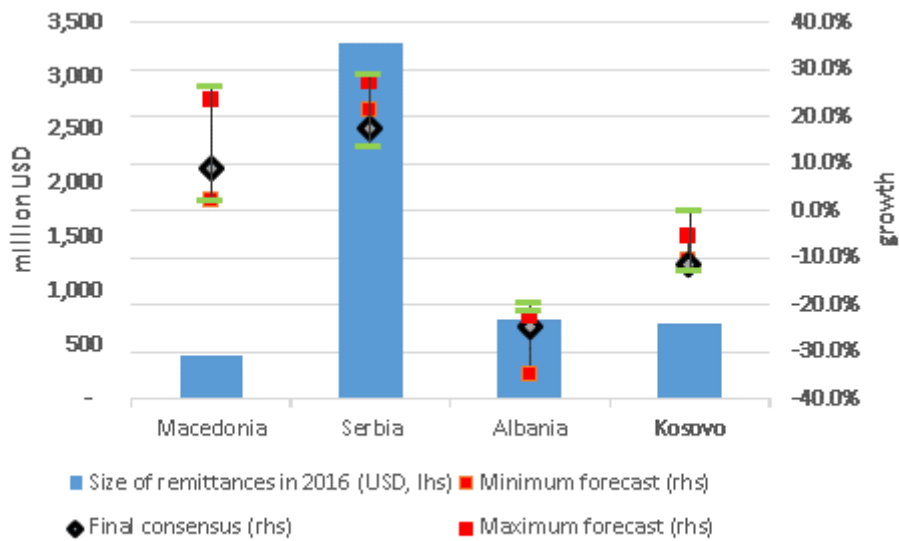
Country	Cross-rounds	Delphi questions					
		Amount of remittances	Size of emigration	The emigration effects	The remittances' effect on poverty	Remittances' usage	Remittances' effect on labor market
Macedonia	Round II, receivers	66.70%	90.80%	93.90%	82.10%	93.90%	86.50%
	Round III, experts	86.30%	64.60%	100.00%	89.50%	100.00%	68.40%
	Round II, experts	76.50%	65.00%	84.20%	84.20%	100.00%	84.20%
	Round III, receivers	86.20%	89.30%	93.90%	88.80%	100.00%	84.30%
Serbia	Round II, receivers	75.80%	67.90%	88.80%	75.30%	88.80%	81.70%
	Round III, experts	88.20%	68.90%	84.20%	79.30%	89.50%	61.30%
	Round II, experts	84.90%	78.20%	84.20%	79.30%	89.50%	68.40%
	Round III, receivers	80.90%	69.90%	88.80%	77.60%	90.60%	79.80%
Albania	Round II, receivers	56.52%	72.31%	77.64%	85.36%	79.77%	77.64%
	Round III, experts	81.24%	79.53%	79.30%	79.30%	74.18%	61.27%
	Round II, experts	76.31%	52.21%	79.30%	74.18%	74.18%	68.38%
	Round III, receivers	80.92%	67.45%	75.28%	79.77%	77.64%	75.28%
Kosovo	Round II, receivers	80.80%	57.60%	80.40%	84.40%	80.40%	78.20%
	Round III, experts	83.30%	60.60%	68.40%	61.30%	84.20%	68.40%
	Round II, experts	86.00%	41.10%	68.40%	84.20%	84.20%	68.40%
	Round III, receivers	86.00%	76.90%	75.80%	86.30%	84.40%	86.30%

Source: Authors' calculations based on Delphi survey.

We turn to observing the consensual forecasts now. Figure 1 presents the consensual forecasts for the remittances' flows in the next five years in the four investigated countries. The graph offers a set of information: the size of remittances in 2016; the variation in the responses of both groups (presented through the minimal and maximal forecast across rounds); and the achieved consensus after the final third cross-round. We first note that forecasts are positive for Macedonia and Serbia; and negative for Albania and Kosovo. In all cases except Albania, experts had lower forecast variation; and in the same cases, the final consensus has been geared toward the lower bounds of experts' and remittances' opinion. In Albania, receivers were more convinced in their forecasts than in the other three countries, and hence experts finally agreed closed to receivers' range of forecasts and close to experts' upper bound forecast. Overall, it is forecast that remittances flowing in Macedonia and Serbia will rise in the next five-year period for 9% and 17.4%, respectively, implying an annual

increase of 1.8% and 3.3%, respectively. On the other hand, the consensual forecast for Albania and Kosovo suggest annual remittances' decline of 4.5% and 2.2%, respectively.

Figure 1 – Remittances' forecasts

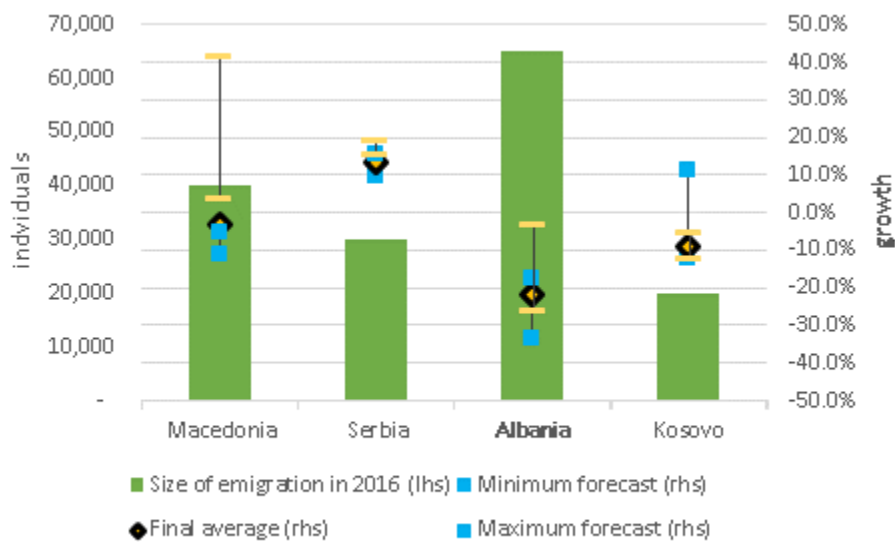


Red squares refer to experts; green lines refer to receivers.

Source: Authors' calculations based on Delphi survey.

Similarly, Figure 2 presents the same set of information on the emigration forecasts. The consensual forecast is that emigration will subside in Macedonia, Albania and Kosovo, but will increase in Serbia, in the next five-year period. Noticeably, these results have been characterized by more variability, hence with lower level of consensus among the respondents. For instance, in the case of Macedonia, the lack of consensus is visible by the non-overlapping ranges of experts and receivers (also reflected in consensus deterioration in Table 1), although by the end of the exercise, consensus improved and the final forecast is slight reduction of emigration of 3% in 2021. With smaller variation yet feeble consensus, the forecast for Albania suggested a decrease of emigration of 22% in the same year. The variation and consensus appeared better in Kosovo and Serbia, where respondents were finally in agreement that emigration will decelerate by 9% and accelerate by 13.5% in 2021, respectively.

Figure 2 – Emigration forecasts



Blue squares refer to experts; yellow lines refer to receivers.

Source: Authors' calculations based on Delphi survey.

Table 2 provides the consensual forecasts on the remaining questions of our Delphi survey, which refer to the effects of emigration and remittances. Both groups achieved consensus in most of the cases. For instance, emigration effects for the society have been forecasted to be negative due to skilled labour emigration. However, there is no consensus on this aspect in Kosovo, where experts continued to consider the effect positive due to the sheer size of remittances the economy receives (see Figure 1). Similarly, it is only in Kosovo where experts and receivers were not in agreement on the effect of remittances for poverty: the former agreed it would become weaker, while the former it would remain as is. Still, we need to note here that the agreed answer of Kosovar experts is not in agreement with their consensual result about emigration effect. While in the other three countries, experts and receivers ended up with consensus, it is notable that they agreed about maintaining remittances' effect on poverty in Macedonia and Serbia, while about reduction in Albania.

Table 2 – Consensus forecasts on emigration and remittances effects

		The emigration effects	Remittances' effect on poverty	Remittances' usage	Remittances' effect on labor market
Macedonia	Experts	Negative, educated depart	As is	Current consumption	Inactivity
	Receivers	Negative, educated depart	As is	Current consumption	Employment
Serbia	Experts	Negative, educated depart	As is	Current consumption	Employment / Self-employment
	Receivers	Negative, educated depart	As is	Current consumption	Employment
Albania	Experts	Negative, educated depart	Weaker	Current consumption	Employment / Self-employment
	Receivers	Negative, educated depart	Weaker	Current consumption	Employment / Self-employment
Kosovo	Experts	Positive, because of remittances	Weaker	Current consumption	Employment
	Receivers	Negative, educated depart	As is	Current consumption	Employment

Source: Delphi survey.

In all four countries, expert and receivers were in agreement that remittances will continue to support current consumption only; this is the question with the largest consensus achieved even as of the earlier rounds. On the other hand, Macedonia and Serbia see a disagreement on the remittances' effect on the labour market, the consensus being especially absent in Macedonia. Namely, experts agreed that remittances will support inactivity, while receivers – employment. In Serbia, on the other hand, both groups agreed remittances will support activity, albeit experts – employment, while receivers – self-employment. Finally, there has been a consensus achieved in Albania and Kosovo, that remittances will support activity. The last question exhibited the lowest consensus within the entire Delphi process.

4.2. Results stability

This section presents forecasts' stability, by question, by country (Table 2). In the case of the t-test for paired samples, we test the null that sample means/proportions are the same between the two first and the second round; with the Wilcoxon signed-rank test, we test the null that responses' distribution was maintained between rounds, and this test is feasible only for the continuous-variable questions, i.e. those on the amount of remittances and the size of emigration; and finally observe the share of responses that were maintained between rounds.

Table 2 – Results stability

Country	Group	Test	Delphi questions					
			Amount of remittances	Size of emigration	The emigration effects	The remittances' effect on poverty	Remittances' usage	Remittances' effect on labor market
Macedonia	Experts	T-test	0.148	0.702	1.000	0.323	1.000	0.323
		Wilcoxon test	0.097	0.721				
		Maintained shares	70%	40%	70%	40%	90%	50%
	Receivers	T-test	0.698	0.103	0.001	0.398	0.033	0.742
		Wilcoxon test	0.476	0.168				
		Maintained shares	82%	76%	53%	47%	65%	59%
Serbia	Experts	T-test	1.000	0.503	1.000	0.591	1.000	0.555
		Wilcoxon test	1.000	0.831				
		Maintained shares	80%	90%	80%	70%	100%	80%
	Receivers	T-test	0.442	0.891	0.425	0.776	0.577	0.853
		Wilcoxon test	0.55	1.000				
		Maintained shares	45%	85%	80%	75%	95%	55%
Albania	Experts	T-test	0.09	0.85	0.26	0.72	0.79	0.59
		Wilcoxon test	0.08	0.72				
		Maintained shares	60%	80%	70%	50%	60%	80%
	Receivers	T-test	0.87	0.76	0.58	0.82	0.92	1.000
		Wilcoxon test	0.14	0.49				
		Maintained shares	85%	80%	75%	70%	80%	85%
Kosovo	Experts	T-test	0.861	0.923	0.678	0.726	0.84	0.811
		Wilcoxon test	0.838	0.919				
		Maintained shares	60%	80%	50%	60%	60%	40%
	Receivers	T-test	0.067	0.675	0.111	0.031	0.096	1.000
		Wilcoxon test	0.049	0.975				
		Maintained shares	79%	90%	63%	68%	74%	79%

Source: Authors' calculations.

Note: The share of individual responses between the rounds is calculated as follows: i) for the continuous variable, by considering a maintained result to be if it falls within +/- one standard deviation of the mean in the previous round; ii) for the categorical variables, if the respondent answered the same option.

The three tests have the following description:

- T-test of paired samples (H0: Sample means are the same / Sample proportions are the same)
- Wilcoxon signed-rank test / Two-tailed test (H0: The two samples follow the same distribution)
- Share of individual responses maintained between rounds

The table suggests that results between rounds have been quite stable, concomitant to the improving consensus between rounds discussed at the beginning of Section 4.1. In Table 1 there are few exceptions – cases where the null hypothesis has been rejected, or the share of

maintained responses between rounds has been less than arbitrary half – however we cannot determine any systematic pattern. This suggests that one could be satisfied with the achieved stability of responses in the overall exercises, in all four countries.

5. Conclusions and recommendations

The objective of this paper is to forecast the size and effects of remittances and emigration in four Western-Balkan countries: Macedonia, Albania, Serbia and Kosovo, through application of a qualitative forecasting method: a Delphi questionnaire. We challenged consensus for two groups of respondents: experts and remittance receivers. By so doing, we were able to track consensus building and arrive at forecasts both, within and between the two groups. In each of the four countries, 10 experts and about 20 remittance-receivers were consulted in three subsequent rounds, out of which the first two were on the same group, while the third round was a cross-round whereby average answers of receivers were given to experts, and vice versa.

In general, consensus on almost all investigated issue was built even as of the first round, which then increased in the second round, and even further in the third round. However, it was notable that, in the third cross-round, experts were on average more reluctant to change and approximate their average answer to that of receivers, hence inflicting some noise in the results and reducing their consensus. In general, this did not happen with receivers in the third round.

Results suggest that remittances in the projected five-year period will increase in Macedonia and Serbia, and will reduce in Albania and Kosovo, by 9%, 17.4%, -1.8% and -3.3%, respectively. With lower consensus, results forecast that emigration will decelerate in Macedonia, Albania and Kosovo, and will accelerate in Serbia, by -3%, -22%, -9% and 13.5%, in 2021. Emigration effects for the society have been forecasted to be negative due to skilled labour emigration, despite consensus on this issue is lacking in Kosovo. Similarly, it is only in Kosovo where experts and receivers were not in agreement on the effect of remittances for poverty: the former agreed it would become weaker, while the former it would remain as is. While in the other three countries, experts and receivers consensually forecasted maintaining remittances' effect on poverty in Macedonia and Serbia, while weakening in Albania. In all four countries, expert and receivers were in agreement that remittances will continue to support current consumption only. On the other hand,

Macedonians lacked consensus on remittances' effect on the labour market, whereby experts agreed that remittances will support inactivity, while receivers – employment. On the other hand, there has been a consensus achieved in the other three countries that remittances will support labour-market activity.

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