

Job Tenure and Structural Change in the Transition Economies of Europe

Maurizio Bussolo
Michael M. Lokshin
Nicolás Oviedo
Iván Torre



WORLD BANK GROUP

Europe and Central Asia Region
Office of the Chief Economist
October 2022

Abstract

This paper uses labor force survey data for 1995–2020 to analyze the dynamics of job tenure in seven transition economies of Europe and a comparator country (Türkiye). The country-specific age-period-cohort decomposition demonstrates that, except in Albania, the job tenure of the cohort of workers entering the labor market in the 2000s is four to nine years shorter than that of workers who started working in the 1970s. This difference is at least twice as large as the difference in job tenure observed among workers from the

same cohorts in European Union countries. These trends in tenure persist after accounting for changes in cohort composition, but they are significantly attenuated by controlling for differences in individual worker characteristics. These results suggest that the evolution of tenure in the transition economies of Europe is still driven mainly by the transition-induced structural change processes in the labor market.

This paper is a product of the Office of the Chief Economist, Europe and Central Asia Region. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://www.worldbank.org/prwp>. The authors may be contacted at mbussolo@worldbank.org, mlokshin@worldbank.org, and itorre@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

Job Tenure and Structural Change in the Transition Economies of Europe

*Maurizio Bussolo, Michael M. Lokshin, Nicolás Oviedo, and Iván Torre**

Keywords: Job tenure, employment, labor market, transition

JEL: J44, J60, O33

* The authors are at the World Bank. This paper's findings, interpretations, and conclusions are entirely those of the authors and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent.

1. Introduction

This paper investigates the long-term evolution of job tenure for six transition economies – Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, the Russian Federation, and Serbia – and, a comparator, the non-transition country in the region – Türkiye. Some partial (due to data limitations) evidence on the job tenure dynamics in Moldova is also discussed. Except for Türkiye, all these countries transitioned from planned to market economies during the early 1990s. In countries of the Western Balkans, the transition also coincided with armed conflict and the displacement of a large number of refugees.

These post-communist countries that transitioned to the market economy in the 1990s endured massive economic restructuring and labor reallocation across occupations and industries. To survive in the new environment and raise productivity, state and private enterprises had to modernize their production processes and become more efficient in their use of labor resources. The experiences and skills accumulated before the transition became obsolete, exposing many workers to greater risks of job loss. The dramatic depreciation of firm-specific human capital resulted in separations, resignations, and layoffs that had a much stronger effect on workers with long job tenure than on workers with similar tenure duration from Western economies ([Lehman and Wadsworth 2000](#)). Societies that, for decades, had relied on state provision of basic services and government-guaranteed jobs-for-life faced a dramatic drop in real wages, a sharp decline in living standards, and heightened income and job insecurity.

Thirty years later, despite broad and costly adjustment efforts, labor productivity, wages, and returns to work experience and education in these countries still lag those of Western Europe ([Orlovski and Riphahn 2008](#); [Watchtel 2021](#)). State-owned enterprises dominate these economies, and their private sectors are much less dynamic than private sectors in developed countries ([EBRD 2021](#)).

By focusing on the long-term evolution of tenure, this paper aims to shed light on several key aspects, and changes of labor markets in transition countries. The paper is motivated by three broad arguments. Firstly, an analysis of job tenure would inform policy makers about the efficiency of the job search and matching process in these countries ([Molloy, Smith, and Wozniak 2021](#), [Pries and Rogerson 2022](#)). In developing countries, the correlation between labor market flows and development is driven by high rates of exits from employment and job-to-job transitions for

workers with low levels of job tenure ([Donovan, Lu, and Scho 2020](#)). These tenure trends reflect mechanisms that determine the quality of workers' matches in the labor market and, ultimately, their productivity. The relationship between tenure and productivity tends to be nonlinear, with productivity leveling off for workers with long tenure ([Gagliardi, Grinza, and Rycx 2022](#)).

Secondly, changes in job tenure affect wealth accumulation. Households with stable, longer-tenured jobs accumulate more wealth than households at the same income levels with less stable jobs ([Kuhn and Ploj 2020](#)). This effect grows with age; everything else equal, workers who start their careers in unstable jobs have lower lifetime wealth accumulation. Analyzing the evolution of job tenure can thus provide insights into not only changes in the labor market but also the expected evolution of household welfare.

Lastly, changes in job tenure may also affect perceptions of job insecurity, which have been shown to have a profound effect on employee well-being ([Keim et al. 2014](#); [Gallie et al. 2017](#)). Across the globe, job stability is one of the main drivers of job satisfaction and worker well-being ([Clark, Knabe, and Rätzel 2010](#); [Origo and Pagani 2009](#)). The length of job tenure can be interpreted as a critical measure of job stability ([Neumark 2000](#)), although the relationship may not necessarily be linear: Subjective perceptions of job stability can be more aligned with changes in short-tenure than long-tenured jobs ([Molloy, Smith, and Wozniak 2021](#)). Shorter job tenures could be contributing to social and political tensions in Central and Eastern Europe ([Bussolo et al. 2018](#)), where the right to employment was the central feature of the communist economic system ([Heumos 2010](#)).

To address these questions, our empirical analysis proceeds in two stages. First, we apply a descriptive age-period-cohort (APC) decomposition to reveal stylized facts about the evolution of job tenure in the sample countries. Second, we carry out an individual-level analysis of tenure, which allows us to control for compositional changes in individual and employment characteristics across different birth cohorts and estimate long-term trends in job tenure.

We show that most transition countries and Türkiye have age and cohort tenure profiles suggesting a delayed or incomplete process of structural transformation. Older generations of workers stay in the traditional sector, while younger generations are employed in the more dynamic modern sector, with high job turnover. In all countries except Albania, workers who entered the labor market in the 2000s have average job tenures that are up to nine years shorter than the tenures of workers

who entered the labor market in the 1970s. This reduction is significantly larger than the three-year reduction of job tenure in the European Union (EU) when comparing the corresponding cohorts of workers. This pattern is observed across educational groups and genders. Once changes in individual and employment characteristics are accounted for, however, the remaining long-term trends in job tenure exhibit substantial cross-country heterogeneity.

Despite the importance and political relevance of studies of job tenure dynamics, the literature on it in post-transition countries is sparse. Most of this research focuses on the early post-transition period of the 1990s, is dominated by single-country studies, and examines tenure only as a side result of the analysis. To our knowledge, no study analyzes recent trends in job tenure in post-communist countries, even though the labor market dynamics in transition economies are still very different from those in the countries of the European Union.

This paper analyzes the recent evolution of job tenure in seven transition economies, which constitute a representative sample of various types of transition economies in Europe. By focusing on job tenure, the paper aims to provide evidence on the degree of efficiency of labor markets in these countries. The paper's empirical strategy relies on a combination of descriptive and modeling approaches that is unique for this type of analysis. The paper also relates changes in job tenure to the process of structural transformation and identifies differences and similarities in job tenure trends and profiles between the transitional economies and neighboring countries in the European Union.

This paper is organized as follows. Section 2 reviews the literature on job tenure in post-communist economies. Section 3 describes the data and presents descriptive statistics on the evolution of job tenure in the countries in our sample over the last two decades. Section 4 outlines the theoretical framework that motivates our empirical analysis, which is discussed in Section 5. Section 6 presents the main results, and Section 7 presents some concluding remarks.

2. Research on tenure trends in post-communist economies

The literature on job tenure in developed countries is extensive and covers a range of countries in Europe and North America (see, for example, [Bachmann and Felder 2018](#)). In contrast, few studies investigate the evolution of job tenure in post-communist transition economies. Among papers that focus on the early stages of transition, [Lehmann and Wadsworth \(2000\)](#) study the dynamics of job

tenure in Poland, Russia, and the United Kingdom in the 1990s. They develop a model that describes the process of labor mobility in a transition economy that yields testable hypotheses about the differences in tenure and wage profiles between labor markets in transition and developed economies. They report that tenure-turnover rates were higher in Russia and lower in Poland than in the United Kingdom.

[Orazem, Vodopivec, and Wu \(2005\)](#) analyze the process of job displacement in Slovenia during the 1990s. They find that the probability of job displacement and quitting decreased with job tenure.

Using longitudinal data from Poland, [Jackson and Mach \(2009\)](#) examine the labor transition from the state to the private sector in the late 1990s. They show that many workers went through spells of unemployment or exited the labor force before obtaining private sector jobs. [Newell and Socha \(2007\)](#) show that the returns to years of tenure rose and steepened in Poland between 1998 and 2002, increasing wage inequality and reducing relative wages for younger workers. Labor mobility declined with job tenure in Poland, as it did in Slovenia.

[Noorkõiv et al. \(1998\)](#) and [Lehmann, Philips, and Wadsworth \(2005\)](#) investigate wage and employment dynamics during Estonia's transition to a market economy (1989–95). They document a significant redeployment of labor from traditional manufacturing and agriculture to modern private sectors. The wage-job tenure profiles did not change significantly over the period analyzed. Returns to experience increased for most cohorts; they grew rapidly for the youngest groups of workers.

Analyzing longitudinal data from Russia and Ukraine, [Gordnichenko and Sebirianova-Peters \(2005\)](#) and [Lehmann, Pignatti, and Wadsworth \(2005\)](#) find no significant increase in returns to job tenure between 1998 and 2002. Lehmann, Pignatti, and Wadsworth report the heightened risks of job displacement for workers with either low or high job tenure. [Linz and Semykina \(2008\)](#) find that Russian workers with very long or very short job tenure felt more insecure about their job situation than workers with average tenures did during the period of economic transition. [Earle and Sabirianova \(2002\)](#) report a positive correlation between the probability of having wage arrears and job tenure in Russia. [Rutkowski \(2013\)](#) shows that job tenure in informal jobs tends to be low in Kazakhstan.

Among papers that analyze recent changes in the labor market conditions in post-communist countries, [Privalko \(2020\)](#) evaluates the effects of age, gender, and tenure on the labor market trajectories of Russian workers, finding a negative correlation between tenure and job mobility. [Grotkowska, Wincenciak, and Gajderowicz \(2018\)](#) estimate the long-term public sector wage premium in Poland, using job tenure as a measure of human capital. They document a positive selection into both public and private employment, even though employees earned more in the public sector, which might be an indication of efficient job markets. Generally, the more job experience a worker had, the smaller the public sector wage premium was for each additional year of tenure. [Kupets \(2015\)](#) studies the efficiency of job matching in Armenia, Georgia, Macedonia, and Ukraine in 2012–13. He shows that many workers with long tenure appear to be overeducated, implying that workers with long tenure may be trapped in jobs with low educational requirements because of the high tenure premium in post-communist countries.

3. Data and descriptive statistics

The data from this study come primarily from labor force surveys of Albania, Bosnia and Herzegovina, Kosovo, Moldova, North Macedonia, Türkiye, and Serbia and from the Russian Longitudinal Mobility Survey (RLMS). The pooled data set consists of 4.4 million individual-level observations across 7 countries and 26 years (1994–2020). Of these observations, about 2.3 million contain information on job tenure. [Table 1](#) summarizes the data coverage for the sample with full data on job tenure.

To achieve intertemporal and cross-country comparability, we harmonized variables across yearly vintages of labor surveys. The years of coverage differ by country, with data from Russia spanning 25 years (1994–2020, with gaps) and data for Moldova covering just 7 years (2003–09). The period 2008–18 has the most extensive country coverage. Our analysis focuses on the working-age population (people 20–65).

The main variable of analysis—the number of years in the current job or job tenure—is available for Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Russia, Türkiye, and Serbia. For Moldova, the tenure variable is available in categories, which we classified as short (less than 1 year), medium (5–10 years), and long (more than 10 years). The data set also contains variables

capturing personal (age, gender, education, marital status) and employment (full or part-time,¹ contract duration, type of occupation,² and firm size) characteristics. [Table 2](#) reports summary statistics for the sample, aggregated over all countries.

Average tenure varies significantly across countries, ranging from about 7.4 years in Russia to about 13.1 years in Serbia ([Figure 1](#)). This span of tenure durations is not very different from that observed in the European Union, where it ranges from 7.4 years in Latvia to 12.7 years in Greece ([Bussolo et al. 2022](#)). There is no common trend in tenure for all seven countries: Average tenure increased in Albania, declined in Türkiye, and remained relatively stable in the rest of the countries over the period covered by the surveys. The stability of tenure duration in Bosnia and Herzegovina, Kosovo, North Macedonia, Russia, and Serbia is similar to the relatively stable tenure trends observed in EU countries and the United States ([Molloy, Smith and Wozniak 2021](#)).

Average tenure varies by population subgroup ([Table 3](#)). Women have longer tenure than men in all countries except Kosovo and North Macedonia, where the difference is small. This pattern is different from the pattern in EU countries, where men have longer tenure ([Bussolo et al. 2022](#)). As expected, older cohorts have longer tenure than younger ones, although the difference varies across countries. In Serbia, for example, workers older than 50 years spent 21 years in their current job; in Russia, the average tenure for workers in this age group is about 13 years. As in EU countries, less-educated workers enjoy longer tenure than more-educated workers, except in Kosovo and Russia, where the average tenure is higher for workers with more education. Workers on permanent contracts keep the same job longer than temporary workers do. The patterns of job tenure by employer size vary across countries. In Albania, Serbia, and Türkiye, tenure is longest among people who work in small firms (firms with ten or fewer employees); in the remaining countries, the longest tenure is among people who work in large firms (firms with more than 50 employees). In terms of occupational groups, people who work in routine jobs have shorter tenure than people who work in non-routine jobs in five of the seven countries.

¹ Whenever possible, we maintain the codification presented in each labor force survey. When this variable is not reported, we consider a worker to hold a part-time job if he or she works fewer than 30 hours per week.

² We distinguish three occupational groups based on their task content: routine occupations, non-routine cognitive occupations, and non-routine manual occupations. See the appendix in Bussolo, Torre, and Winkler (2018).

These average figures may obscure the heterogeneity of tenure trajectories for different socioeconomic groups of workers and workers from different age cohorts. To uncover these trends, we develop a simple theoretical model to guide our empirical analysis.

4. Theoretical framework

Our theoretical framework follows the two-sector model with on-the-job search of [Pissarides \(1994\)](#). An economy consists of the modern (m) and traditional (t) sectors. In transition economies, the traditional sector could be viewed as having a larger share of state-owned enterprises. The modern sector is characterized by high penetration of new technologies and management practices, whereas the traditional sector relies on often obsolete processes. The average productivity is higher in the modern sector f than in the traditional sector λf , where $0 < \lambda \leq 1$. The productivity of a worker in either sector is augmented by the worker's firm-specific human capital $h_i(\tau)$, $i = m, t$, which is an increasing function of job tenure τ , $h_i(\tau)' \geq 0$, $h_i(0) = 1$. We assume that none of the accumulated skills is transferable when a worker moves to a new job, implying no advantage of being previously employed when accepting a new job. Under these assumptions, the wage paid by the firm to the worker is

$$W_i = W^a + \vartheta_i h_i(\tau) \lambda f \quad i = m, t, \quad (1)$$

where ϑ_i is the worker's share of the job match and W^a represents the best alternative wage available to that worker. That wage can be interpreted as the value of the workers' general skills in the labor market.

Workers in both sectors continue searching for a better one until some finite value of τ^* . They quit the traditional sector before τ^* and take a job in the modern sector if the wage in the modern sector (where tenure will be 0) is higher than their current wage in the traditional sector:

$$\vartheta_t h_t(\tau) \lambda f < \vartheta_m h_m(0) f. \quad (2)$$

Differences in intersectoral productivity ensure that workers can change jobs at any tenure. Quit rates in the traditional sector decline for longer tenure, as the rewards for seniority grow. The larger the differences in productivity between the two sectors and the lower the rate of firm-specific skill accumulation in the traditional sector, the larger is the share of workers that will move from the traditional to the modern sector for a given τ . The rapid depreciation of firm- and sector-specific

skills after the transition would result in workers quitting jobs in the traditional sector and taking jobs in the modern sectors at longer tenures than workers in developed economies.

A firm adjusts the number of its employees in response to (positive or negative) productivity shocks. If we define the total value of job match in each sector as

$$M_i = W^a + h_t(\tau), \quad (3)$$

then the firm's profit is

$$\Pi_i = M_i - W_i = (1 - \theta_i)h_i(\tau)\lambda f. \quad (4)$$

A firm lays off a worker after the negative shock when its profit falls by φ and becomes negative so that

$$|\varphi| > (1 - \theta_i)h_i(\tau)\lambda f. \quad (5)$$

As $(1 - \theta_t)h_t(\tau)\lambda f < (1 - \theta_m)h_m(\tau)f$, there will be more layoffs in the traditional sector than in the modern sector, and layoffs will occur for higher values of tenure distribution in the traditional sector. The model predicts that because of differences in the relation between productivity and tenure in the traditional and modern sectors, the tenure profile observed in transition economies will be higher and flatter than it is in developed economies. A different profile would suggest inefficiencies in the labor market, which would prevent labor from moving from the traditional to the modern sector.

5. Empirical strategy

Our empirical analysis proceeds in two stages. First, we provide a descriptive age-period-cohort (APC) decomposition of job tenure to produce some stylized facts about its evolution in the sample countries. Second, to control for compositional changes in different birth cohorts, we carry out an individual-level analysis that allows us to estimate long-term job tenure trends.

5.1 Age-period-cohort decomposition

We model the job tenure T_{iapc} of individual i as a linear function of the individual's age (a_i), period (p_i), and cohort (c_i) effects. Let the average tenure of individuals who were age a in survey year p and cohort c be $T_{apc} = \frac{\sum_{i=1}^{n_{apc}} T_{iapc}}{n_{apc}}$, where n_{apc} is the number of individuals in the corresponding

APC cell. We define vectors of age, period, and cohort dummies as follows: $\mathbf{A}_k = \mathbb{I}[k = a], k = 1, \dots, K$, $\mathbf{P}_l = \mathbb{I}[l = p], l = 1, \dots, L$, and $\mathbf{C}_m = \mathbb{I}[m = c], m = 1, \dots, M$, where K is the number of age categories, L is the number of survey rounds, M is the number of generational cohorts, and \mathbb{I} is an indicator function. Then

$$T_{apc} = \sum_{k=1}^K \alpha_k \mathbf{A}_k + \sum_{l=1}^L \pi_l \mathbf{P}_l + \sum_{m=1}^M \gamma_m \mathbf{C}_m + \varepsilon_{apc}, \quad (1)$$

where ε_{apc} denotes the error term.

To estimate model (1) using the APC method, we construct a panel of individuals by their APC identifiers. The linear relation between age, period, and cohort requires us to impose two constraints on the model parameters to achieve identification. A popular approach introduced by [Deaton and Paxson \(1994\)](#) requires that the period effects be orthogonal to the age and cohort effects, implicitly assuming that structural trends in the period effects are absorbed by the age and cohort effects.³ This approach has been criticized for its arbitrariness.⁴ The maximum entropy (ME) estimator generates a distribution of estimates that satisfies the linear constraints of the standard APC models and produces estimates of the expected values of parameters corresponding to the ME probability distribution ([Browning, Crawford, and Knoef 2012](#)).

The maximum entropy (ME) estimator generates a distribution of estimates that satisfies the linear constraints of the standard APC models and produces estimates of the expected values of parameters corresponding to the ME probability distribution ([Browning, Crawford, and Knoef 2012](#)). The criterion function used to select the probabilities corresponding the coefficients of APC model is the entropy measure by [Shannon \(1948\)](#) that is identified by requirements that any measure of uncertainty should be continuous, symmetric with respect to reordering of the outcomes, and additively decomposable, and bounded (which is the case for most demographic

³ [Hanoch and Honing \(1985\)](#) specify linear trends for age, cohort, and period and define the parameters of the APC model as deviations from the trends. They also assume no linear trend in the period effect. These restrictions have been shown to be equivalent to those made by [Deaton and Paxson \(1994\)](#).

⁴ The APC under-identification problem is an instance of a large class of structural under-identification problems that occur when conceptualization of the effects of structural arrangements leads to an exact linear dependency among the effects (see, for example, [Duncan 1966](#)).

and economic data). An appealing feature of the APC ME method is that it overcomes the potential arbitrariness of identification restrictions.⁵ We limit our analysis to workers ages 20–65.

5.2 Analysis of long-term trends in job tenure

The APC decomposition focuses on the evolution of job tenure over time and age cohorts. But the characteristics of the members of cohorts could change over time. For example, individuals within a group may change their family or fertility status, type of employment, occupation, industry, and/or mobility preferences. If such characteristics affect job tenure, compositional changes will partly explain the cohort effects estimated by the APC approach.

This section discusses our empirical strategy for an individual-level analysis of the evolution of job tenure conditional on workers' and employers' characteristics that can change over time. The primary objective of this analysis is to understand whether changes in individual and employment characteristics of the labor force might explain long-term trends in job tenure. The persistence of a trend in tenure after controlling for these characteristics would imply that other factors, probably operating at the economy-wide level, may drive the evolution of job tenure.

Our estimation strategy is based on the two-stage approach proposed by [Jager and Huff Stevens \(1999\)](#) for the United States and [Gregg and Wadsworth \(2002\)](#) for the United Kingdom.⁶ In the first stage, we estimate the separate probabilities of a worker having short (less than 1 year), medium (5–10 years), or long (more than 10 years) tenure as a function of \mathbf{X} , a vector of individual characteristics, and \mathbf{E} , a vector of job characteristics, separately for each country in our sample:

$$Prob(T_i < T^*) = f(\sum_{k=1}^K \alpha_k \mathbf{X}_i^k + \sum_{j=1}^J \alpha_j \mathbf{E}_i^j + \sum_{t=1995}^{2020} \pi_t Year_i + \varepsilon_i) \quad (2)$$

We use a binary probit model to estimate equation (2) separately for the three durations of tenure.⁷ Consistent with previous studies, we estimate the probability of being on the job for less than 1

⁵ The least squares estimator proposed by [Deaton and Paxson \(1994\)](#) remains popular and widely used in economic analysis, despite its deficiencies.

⁶ [Bratberg, Salvanes, and Vaage \(2010\)](#) use a similar methodology to analyze changes in job stability in Norway.

⁷ The duration of tenure is derived differently in the data from the countries in our sample. The majority of surveys asked a question about the number of years in the current job (as discussed in the Data section). The answers to such questions are subject to bunching and recall errors that could be correlated with the duration of tenure and thus bias our estimations ([Duncan and Hill 1985](#), [Bollinger et al. 2019](#)). However, typically these errors could lead to a slight overestimation of the longer-term tenure, which, qualitatively, should not affect the main conclusions of our analysis.

year on the sample of individuals 20 and older, the probability of being on the job 5–10 years on the sample of individuals 25 and older, and the probability of being on the job more than 10 years on the sample of individuals 30 and older.

To account for the effect of individual characteristics on job tenure, we include in \mathbf{X} a dummy for gender, age and age squared, education-level dummies, a dummy if a worker is married, the share of children, and household size. Regarding job characteristics, we include a dummy for the nature of the job contract (temporary or permanent) and whether the job is full-time or part-time. A temporary job could capture the differential ability of firms to release workers ([Gregg and Wadsworth 2002](#)). Part-time or self-employed workers are more likely to break their tenure than full-time workers ([Garcia-Cabo and Mudero 2019](#)). We control for occupations by a set of dummies based on the two-digit International Standard Classification of Occupations (ISCO) classification ([ILO 2021](#)) and use five dummies corresponding to different firm sizes ([Bryson, Erhel, and Salibekyan 2021](#)).⁸ We also include a series of year dummies to capture the time trend.

To identify the time effects in equation (2), we assume that the coefficients of our control variables are constant over time. [Burgess and Rees \(1998\)](#) find little evidence of significant changes in the effects of the main control variables over time. We derive the marginal effects of the year dummies (π_t) estimated at the sample means. These marginal effects could be interpreted as conditional sample-year average proportions of each tenure duration.⁹

To investigate the presence of a secular trend in the probability of having each tenure duration, we proceed to the second-stage estimation, which consists of linear regression with the marginal effects of each year dummy (π_t) as a dependent variable and a linear time trend as the single independent variable (equation 3). We bootstrap the standard errors of the second-stage estimations to account for the small sample error heteroskedasticity:¹⁰

⁸ We use the two-digit occupation classification because in 2010, the labor force surveys transitioned from the ISCO 88 classification to the ISCO 08 classification. A correspondence between both classifications is possible only at the two-digit level.

⁹ For the second-stage regression, we could also use the probit estimated coefficients (π_t). However, using the marginal effect simplifies the interpretation of our results.

¹⁰ We estimate the standard errors of the second-stage regression using 500 bootstrapped sample draws ([Imbens and Kolesar 2016](#)).

$$\left. \frac{\partial \widehat{Prob(T_i < > T^*)}}{\partial Year_{t,c}} \right|_{\bar{X}_c, \bar{E}_c} = \alpha + \beta Time + u_t . \quad (3)$$

These marginal effects can be interpreted as country-year average conditional proportions of each type of job tenure. The statistical significance of coefficient β in equation (3) would suggest the presence of trends in job tenure that cannot be explained by the intertemporal changes in workers' individual and employment characteristics.

6. Results

6.1 Age and cohort profiles of job tenure

The results of the APC decomposition show that, as expected, job tenure increases with age ([Figure 2](#)). However, there is substantial heterogeneity across countries: The steepest age profile is in Albania, where the average job tenure is 2.2 years at age 30 and 11.0 years at age 50, a difference of almost 9 years.¹¹ The flattest profile is in Russia, where the average job tenure is about 2.1 years at age 30 and 6.2 years at age 50, a difference of about 4 years. A “plateau” in job tenure is observed after age 55 in Russia, after which average tenure remains stable, at around 8 years. This “plateau” is observed when controlling for cohort effects, which would capture one-off generational changes. As described in the theoretical framework, this result could indicate an ongoing process of structural change in Russia in which the traditional sector sheds labor at long tenure lengths.

A useful benchmark for cross-country comparisons of age-tenure profiles are the countries of the European Union, where the values for job tenure obtained from a similar decomposition for workers are 2.3 years of tenure at age 30 and 10.1 years at age 50 ([Bussolo et al. 2022](#)). All countries except Albania have tenure age profiles that are lower than that of the EU countries, although this pattern is reversed by the last years of professional life. These results suggest that, except in Russia, the process of structural change in the transition economies in our sample and Türkiye may be delayed, as the age profile does not exhibit the expected profile flattening.

[Figure 3](#) presents the cohort profile of job tenure. For all countries except Albania, average job tenure has been decreasing across generations. This pattern is also evident in EU countries,

¹¹ Given the unusual trend of tenure in Albania, where it strongly increased throughout the sample period, we rely on estimates using the Deaton-Paxson method, which better controls for this trend, in Albania. For the remaining countries we use the maximum entropy method.

although the magnitude of the change there is smaller. People born in 1980 have average tenure that is shorter than that of people born in 1950 by 8.8 years in Serbia, 7.7 years in Türkiye, 7.5 years in North Macedonia, 7.1 years in Kosovo, 6.2 years in Bosnia and Herzegovina, and 4 years in Russia. In the European Union, this difference is just 3.3 years. Strongly decreasing cohort-tenure profiles may indicate a situation in which structural change may be incomplete, as older generations of workers remain permanently employed in the traditional sector and younger generations of workers are employed in a relatively unstable modern sector, with high turnover.

A second striking result is the positive and concave profile of job tenure across generations in Albania, which is very different from that of other countries. The peak of Albania's cohort profile is observed for people born in the early 1970s, who entered the labor market in the early 1990s, when Albania started to transition from a planned to a market economy. Labor shedding may have been particularly strong in the early years of the transition ([Çuka et al. 2003](#)). Albania is the only country in our sample where average job tenure has increased consistently over the last two decades. This unusual trend may be a statistical reflection of the retirement of workers who had been forced to leave the traditional sector during the early years of the transition: Being laid off from their jobs in the middle of their professional lives, they had unusually short job tenures for their age in the post-transition years.

Compositional changes within these groups could partially explain the tenure dynamics observed across birth cohorts. As educational attainment is correlated with average tenure ([Bussolo et al. 2022](#)), changes in educational attainment across cohorts may explain differences in average tenure. [Figure 4](#) and [Figure 5](#) show the age and cohort profiles by educational attainment (the results of the APC decompositions carried out on subsamples of workers with different levels of education). The general patterns are similar: Workers from most countries in the sample have age-cohort profiles that are similar to or flatter than those of workers from EU countries for all educational groups. The notable exception is Albania, where workers with lower-secondary education have a significantly steeper age-tenure profile than other workers; upper-secondary and tertiary graduates there have age-tenure profiles that are similar to those of the other countries in our sample. Russia exhibits one of the flattest age profiles, particularly for upper-secondary graduates.

The cohort profiles of tenure across educational groups repeat the patterns observed in the aggregate picture: Younger cohorts have lower average job tenure than older cohorts for workers

in all educational groups. In all countries except Albania, the cohort profiles are below those observed in EU countries. In Albania, the positive and concave profile of job tenure is observed only among lower-secondary graduates; upper-secondary and tertiary graduates have a stable or slightly decreasing cohort profile of job tenure. The reversal in the cohort profile observed for cohorts born after 1970 in the aggregate picture in Albania can thus be partly attributed to the increased educational attainment of those cohorts. These results suggest that the strong labor shedding in Albania had a particularly strong effect on people with less education. The substantial decrease in job tenure across birth cohorts cannot be explained solely by differences in educational attainments, as the negative trend persists for every educational group.

Another source of compositional change across birth cohorts could be gender differences in labor force participation. However, transition economies have smaller gender gaps than developed market economies ([Pignatti 2020](#)). Moreover, the gender gap did not change substantially over time, except in Türkiye, the nontransition comparator in the sample, where female labor participation rose from less than 25 percent in 2004–08 to 34 percent in 2018 ([Tunali, Kirdar, and Dayioglu 2021](#)).

Figures [6](#) and [7](#) present the age and cohort profile of average tenure by gender. They show that job tenure decreased for the younger cohorts of men and women in all countries except Albania. This finding suggests that compositional changes in labor force participation by gender cannot fully account for the aggregate negative tenure trend observed across birth cohorts. It is noteworthy, however, that the age profile of EU countries is almost always above that of transition economies for men and mostly below it for women. Women in transition economies tend to have full-time, permanent jobs; in richer EU countries, the prevalence of part-time (and thus, more unstable) jobs for women is greater ([EuroStat 2020](#)). This difference may explain why, on average, women in transition countries have longer average job tenure than women in EU countries throughout their lifetimes.

6.2 Long-term trends in job tenure

The APC decomposition reveals a strong negative trend in average job tenure across generations in the transition economies of Europe. Given that these countries are undergoing a process of structural change with significant labor reallocation, it may be that changes in employment characteristics, such as occupational composition or the prevalence of different contract types,

which cannot be controlled for in an APC decomposition, account for the trend.¹² If the trend persists once this change is accounted for, factors other than the transition itself may be at play. [Bussolo et al. \(2022\)](#) find that individual and employment characteristics cannot entirely explain the long-term decrease in job tenure in the European Union. They show that changes in employment protection legislation, trade openness, and technological change by information and communications technology (ICT) may contribute to that dynamic.

After controlling for individual and employment characteristics, the long-term trends in job tenure are very heterogeneous across the sample countries. [Table 4](#) presents the coefficient β on the time trend in the estimation of the second-stage regression as in equation (3). Panel a shows the estimated coefficient for the specification with a simple time trend; panel b reports that coefficient after controlling for the cyclical effect of economic activity on tenure. The probability of having a short-tenure job (less than one year) exhibits no significant time trend except for a positive one in Albania and a negative one in Russia. The probability of having a medium-tenure job (5–10 years) increased over time in North Macedonia, Russia, and Türkiye; decreased in Kosovo; and shows no trend in Albania, Bosnia and Herzegovina, and Moldova. The probability of holding a long tenure job (more than 10 years) decreased in Moldova, North Macedonia, and Türkiye; increased in Kosovo; and shows no trend in Albania, Bosnia and Herzegovina, and Russia.

Some countries, like Kosovo, North Macedonia, and Türkiye, experienced an increase in the probability of holding medium-tenure jobs that was mirrored by a decrease in the probability of holding long-tenure jobs. In Russia, the probability of having a medium-tenure job also increased over time, but it appears to be related to a decreasing probability of having a short-tenure job. This pattern is similar to the one observed in Central European countries that also transitioned from a planned to a market economy ([Bussolo et al., 2022](#)), suggesting some degree of commonality in the long-term evolution of job tenure in Russia and the countries that are more advanced in transitioning to the market economy.

Can we qualify the effects of changes in job tenure and job stability on workers in transition economies? On the one hand, good job matches should last longer, and then declining job stability

¹² As discussed in section 5.2, the APC approach allows one to control indirectly for compositional changes in characteristics that are fixed over the course of an individual's professional life, such as educational attainment, but not for characteristics that may change repeatedly over time.

could mean deteriorating job match quality (e.g., [Altonji and Williams 2005](#)). On the other hand, some evidence indicates that job reallocation can be productive ([Newmark 2002](#)). Linking the results of this paper with the analysis of changes in earnings might help understand of effects tenure trends on the well-being of workers in transition economies in Europe.

The lack of a common pattern in the long-term trends of job tenure among the countries in our sample suggests that idiosyncratic factors may drive cross-country differences once individual and employment characteristics are controlled for. These factors merit further country-specific analysis that is beyond the scope of this paper.

7. Concluding remarks

The countries that transitioned from planned to market economies in the early 1990s underwent significant labor reallocation. More than 30 years on, the job tenure dynamics in transition countries remain relatively under-researched. In this paper, we are the first to study the evolution of job tenure in six transition countries and Türkiye, a characteristic that allows us to gauge the efficiency of labor markets in these countries. Our analysis shows that for all the transition economies in our sample, except Russia, the age-tenure profiles fail to exhibit the flattening pattern that is expected from an efficient process of structural transformation. Younger generations can expect to spend significantly less time in their jobs than older generations—four to eight fewer years fewer on average, an intergenerational difference in tenure that is more than twice that observed in EU countries. This trend is common for all educational groups and both genders, suggesting a delayed or incomplete structural change, in which older generations of workers remain employed in a traditional sector dominated by state-owned enterprises and younger generations of workers are employed in a more unstable modern sector with high turnover. Given that wealth accumulation is correlated with average tenure ([Kuhn and Ploj 2020](#)), these results suggest that long-term welfare may be compromised for younger cohorts in many transition economies.

Our results also show that once changes in occupation, contract type, and other employment characteristics are accounted for, the remaining long-term trend in job tenure is very heterogeneous across countries, suggesting that idiosyncratic factors may explain any differences that are not related to the transition-induced structural change process. Further country-specific research will be needed to illuminate these idiosyncratic factors.

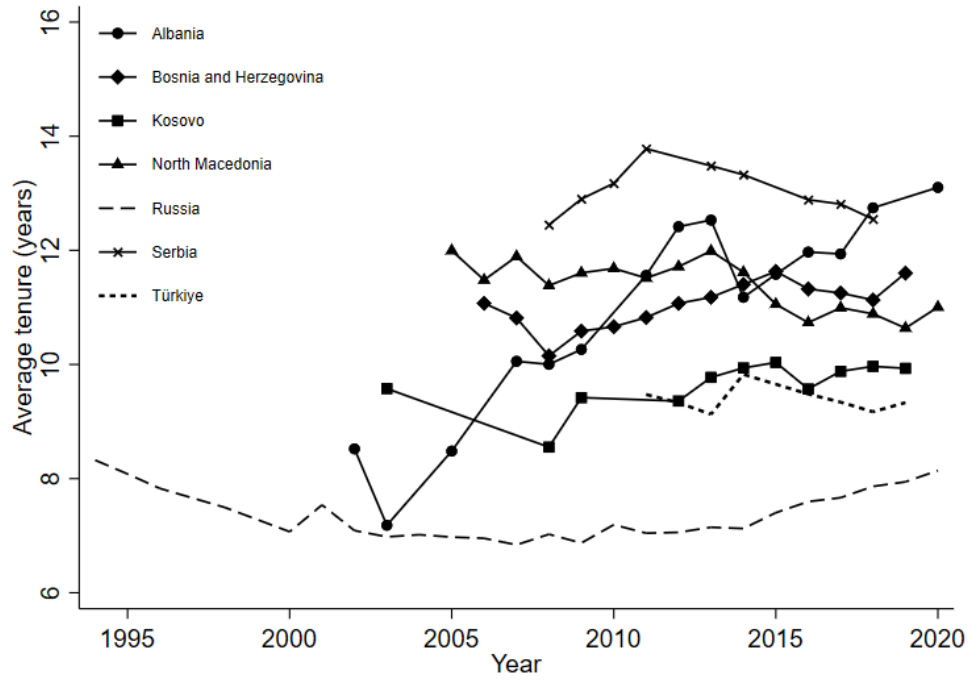
References

- [Altonji J. and N. Williams \(2005\)](#). “Do Wages Rise with Job Seniority? A Reassessment,” *International Labor Review*, 58(3): 370-397.
- [Bachmann, R. and Felder, R. \(2018\)](#). “Job stability in Europe over the cycle.” *International Labour Review*, 157(3): 481-518.
- [Bollinger C., Hirsch, B., Hokayem, C., and J. Ziliak \(2019\)](#). “Trouble in the Tails? What We Know about Earnings Nonresponse 30 Years after Lillard, Smith, and Welch.” *Journal of Political Economy*, 127(5): 2143-2184.
- [Bratberg, E., Salvanes, K. and K. Vaage \(2010\)](#). “Has Job Stability Decreased? Population Data from a Small Open Economy (2009-09)”. *Scandinavian Journal of Economics*, 112(1): 163-183.
- [Browning, M., Crawford I. and M. Knoef \(2012\)](#). “The Age-Period-Cohort Problem: Set Identification and Point Identification.” *CEMMAP Working Paper CWP02/12*, Institute for Fiscal Studies.
- [Bryson, A., Erhel, C. and Z. Salibekyan \(2021\)](#). “Perceptions of non-pecuniary job quality using linked employer–employee data.” *European Journal of Industrial Relations*, 27(2):113-129.
- [Burgess, S. and H. Rees \(1998\)](#). “A Disaggregate Analysis of the Evolution of Job Tenure in Britain, 1975-1993.” *British Journal of Industrial Relations*, 36(4): 629-655.
- [Bussolo, M., Davalos, M., Peragine, V., and R. Sundaram \(2018\)](#). *Toward a New Social Contract: Taking on Distributional Tensions in Europe and Central Asia*. Europe and Central Asia Studies. Washington, DC: World Bank.
- [Bussolo, M., Capelle, D., Lokshin, M., Torre, I, and H. Winkler \(2022\)](#). “Explaining the evolution of job tenure in Europe, 1995-2020.” Forthcoming Policy Research Working Paper, World Bank: Washington, DC..
- [Gallie, D., Felstead, A., Green, F. and I. Hande \(2017\)](#). “The hidden face of job insecurity.” *Work, employment and society*, 31(1): 36-53.
- [Cazes, S. and A. Nesporova \(2003\)](#). *Labour Markets in Transitions: Balancing Flexibility and Security in Central and Eastern Europe*, Geneva: ILO.
- [Clark, A., Knabe, A. and S. Rätzel \(2010\)](#). “Boon or bane? Others’ unemployment, wellbeing and job insecurity.” *Labour Economics*, 17: 52-61.
- [Çuka, E., Papapanagos, H., Polo, N. and P. Sanfey \(2003\)](#). “Labor Market Developments in Albania: An Analytical Overview.” *Review of Development Economics*, 7: 217-227.
- [Deaton, A. and C. Paxson \(1994\)](#). “Intertemporal Choice and Inequality,” *Journal of Political Economy*, 102(3): 437-467.
- [Donovan, K., Lu, W. and T. Schoellman \(2020\)](#). “Labor Market Dynamics and Development.” Yale University Economic Growth Center Discussion Paper No. 1071.
- [Duncan, O. \(1966\)](#). “Methodological Issues in the Analysis of Social Mobility.” In *Social Structure and Mobility in Economic Development*, Ed N. J. Smelser and S. M. Lipset. Chicago: Aldine.
- [Duncan, G. and D. Hill \(1985\)](#). An Investigation of the Extent and Consequences of Measurement Error in Labor-Economic Survey Data. *Journal of Labor Economics*, 3(4), 508–532.

- Earle, J. and K. Sabirianova (2002). “How Late to Pay? Understanding Wage Arrears in Russia.” *Journal of Labor Economics*, 20(3): 661-707.
- EBRD (2021). “The State Strikes Back.” *Transition Report 2020-21*. European Bank for Reconstruction and Development, London, UK.
- EuroStat (2020). Women’s employment in the EU, EuroStat, <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/EDN-20200306-1>
- Gagliardi, N., Grinza, E. and F. Rycx (2022). “Workers’ tenure and firm productivity: New evidence from matched employer-employee panel data.” *Industrial Relations*: early view online at <https://doi.org/10.1111/irel.12309>
- Garcia-Cabo, J. and R. Madera (2019). “The Self-Employment Option in Rigid Labor Markets: An Empirical Investigation.” *International Finance Discussion Papers* 1264
- Gregg, P. and J. Wadsworth (2002). “Job tenure in Britain, 1975–2000. Is a job for life or just for Christmas?” *Oxford Bulletin of Economics and Statistics*, 64: 111-134.
- Gorodnichenko, Y. and K. Sabirianova Peter (2005). “Returns to schooling in Russia and Ukraine: A semiparametric approach to cross-country comparative analysis.” *Journal of Comparative Economics*, 33(2): 324-350.
- Grotkowska, G., Wincenciak, L. and T. Gajderowicz (2018). “Public–private wage differential in a post-transition economy.” *Economics of Transition*, 26(3): 495-522.
- Hanoch, G. and M. Honig (1985). “‘True’ Age Profiles of Earnings: Adjusting for Censoring and for Period and Cohort Effects.” *Review of Economics and Statistics*, 67(3): 383-394.
- Heumos, P. (2010). “Workers under Communist Rule: Research in the Former Socialist Countries of Eastern-Central and South-Eastern Europe and in the Federal Republic of Germany.” *International Review of Social History*, 55(1): 83–115.
- Jackson, J. and B. Mach (2009). “Job creation, job destruction, labour mobility and wages in Poland, 1988–1998.” *Economics of Transition*, 17(3): 503-530
- IBRD (2020). *Transition report 2018-2019: Work in Transition*, The International Bank for Reconstruction and Development, London, UK.
- ILO (2021). “International Standard Classification of Occupations: ISCO-08” International Labour Office, - Geneva: ILO.
- Imbens, G. and M. Kolesar (2016). “Robust Standard Errors in Small Samples: Some Practical Advice.” *Review of Economics and Statistics*, 98(4): 701–712.
- Jaeger, D. and A. Huff Stevens (1999). “Is Job Stability in the United States Falling?” *Journal of Labor Economics*, 17(S4): S1–S28.
- Keim, A., Landis, R., Pierce, C. and D. Earnest (2014). “Why do employees worry about their jobs? A meta-analytic review of predictors of job insecurity.” *Journal of Applied Health Psychology*, 19(3): 269–90.
- Kuhn, P. (Ed.), (2002). *Losing Work, Moving On: Worker Displacement, an International Perspective*. W. E. Upjohn Institute for Employment Research.
- Kuhn, M. and G. Ploj (2020). “Job stability, earning dynamics, and life-cycle savings” *CEPR Discussion Paper* 15460: London, United Kingdom.
- Kupets, O. (2015). *Education in transition and job mismatch: Evidence from the skills survey in non-EU transition economies*. Kyoto Institute of Economic Research
- Lehmann, H., Philips, K. and J. Wadsworth (2005). “The Incidence and Cost of Job Loss in a Transition Economy: Displaced Workers in Estonia, 1989-1999.” *Journal of Comparative Economics*, 33(1): 59-87.

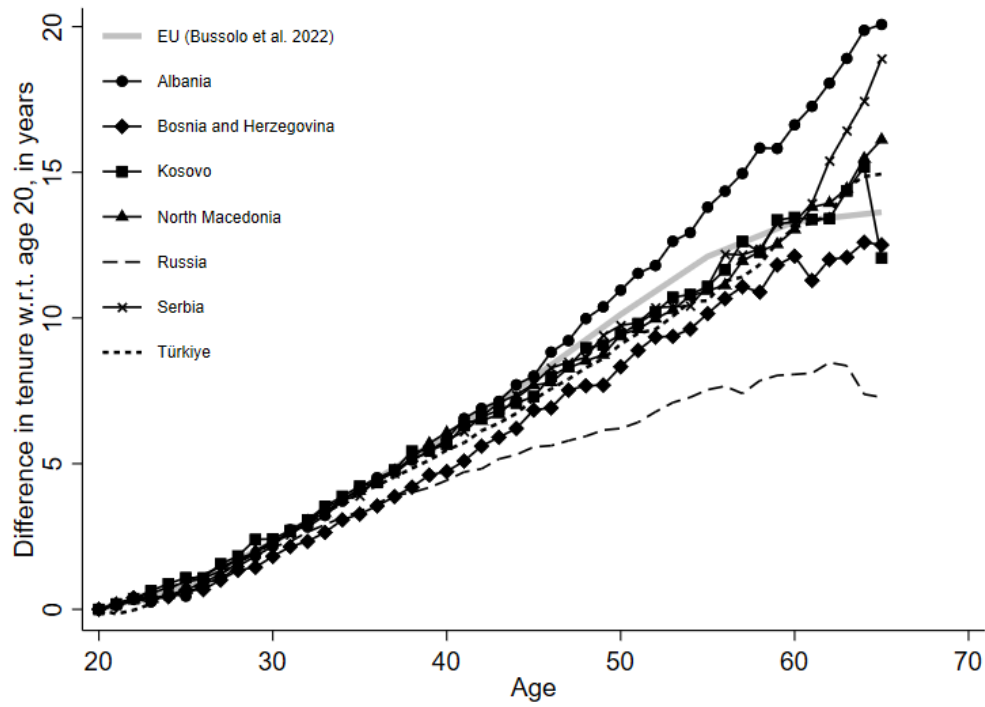
- [Lehmann, H. and J. Wadsworth \(2000\)](#). “Tenures That Shook the World: Worker Turnover in Russia, Poland and Britain.” *Journal of Comparative Economics*, 28(4): 639-664.
- [Lehmann, H., Pignatti, N. and J. Wadsworth \(2005\)](#). *The Incidence and Cost of Job Loss in the Ukrainian Labor Market*. Institute for the Study of Labor.
- [Lehmann, H., Philips, K., and J. Wadsworth \(2005\)](#). “The incidence and cost of job loss in a transition economy: displaced workers in Estonia 1989 to 1999.” *Journal of Comparative Economics*, 33(1): 59-87.
- [Linz, S. and A. Semykina \(2008\)](#). “How do workers fare during transition? Perceptions of job insecurity among Russian workers, 1995-2004.” *Labour Economics*, 15(3): 442-458.
- [Molloy, R., Smith, C. L. and A. Wozniak \(2021\)](#). “Changing Stability in U.S. Employment Relationships: A Tale of Two Tails.” *Journal of Human Resources*, November: 0821-11843.
- [Neumark, D. \(2000\)](#). “Changes in job stability and job security: A collective effort to untangle, reconcile, and interpret the evidence.” *NBER Working Paper No. 7472*. Cambridge, MA, National Bureau of Economic Research.
- [Neumark, D. \(2002\)](#). “Youth Labor Markets in the United States: Shopping Around vs. Staying Put.” *Review of Economics and Statistics*, 84(3): 462–82.
- [Newell, A. and M. Socha \(2007\)](#). “The Polish wage inequality explosion.” *Economics of Transition*, 15(4): 733-758.
- [Noorkõiv, R., Orazem, P., Puur, A. and M. Vodopivec \(1998\)](#). “Employment and wage dynamics in Estonia, 1989-95.” *Economic Transition*, 6(2): 481-503.
- [Orazem, P., Vodopivec, M. and R. Wu \(2005\)](#). “Worker displacement during the transition: Experience from Slovenia.” *Economics of Transition*, 13(2): 311-340.
- [Origo, F. and L. Pagani \(2009\)](#). “Flexicurity and job satisfaction in Europe: The importance of perceived and actual job stability for wellbeing at work.” *Labour Economics*, 16: 547-555.
- [Orlowski, R. and R. Riphahn \(2008\)](#). “The East German wage structure after transition.” *Economics of Transition and Institutional Change* 17(4): 629 – 659.
- [Pignatti, N. \(2020\)](#). “Encouraging women’s labor force participation in transition countries.” *IZA World of Labor*, 264.
- [Pissarides, C. \(1994\)](#). “Search Unemployment with On-the-Job Search.” *Review of Economic Studies*, 61(3): 457-475.
- [Privalko, I. \(2020\)](#). “Gender differences in Russia’s job mobility and its rewards.” *Economics of Transition*, 29(3): 405-429.
- [Pries, M. and R. Rogerson \(2022\)](#). “Declining Worker Turnover: The Role of Short-Duration Employment Spells.” *American Economic Journal: Macroeconomics* 14 (1): 260-300.
- [Rutkowski, J. \(2013\)](#). *Promoting Formal Employment in Kazakhstan*. IZA/World Bank workshop on institutions and informal employment in emerging and transition economies. Bonn.
- [Tunali, I., Kirdar, M., and M. Dayioglu-Tayfur \(2021\)](#) “Down and up the ‘U’ – A synthetic cohort (panel) analysis of female labor force participation in Turkey, 1988-2013.” *World Development*, 146, 105609
- [Wachtel, P. \(2021\)](#). “Are the Transition Economies Still in Transition?” In: Douarin, E., Havrylyshyn, O. (eds) *The Palgrave Handbook of Comparative Economics*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-50888-3_16
- [World Bank \(2013\)](#). *World development report 2013: Jobs*, Washington, DC: World Bank.

Figure 1: Average tenure by country, 1994–2020



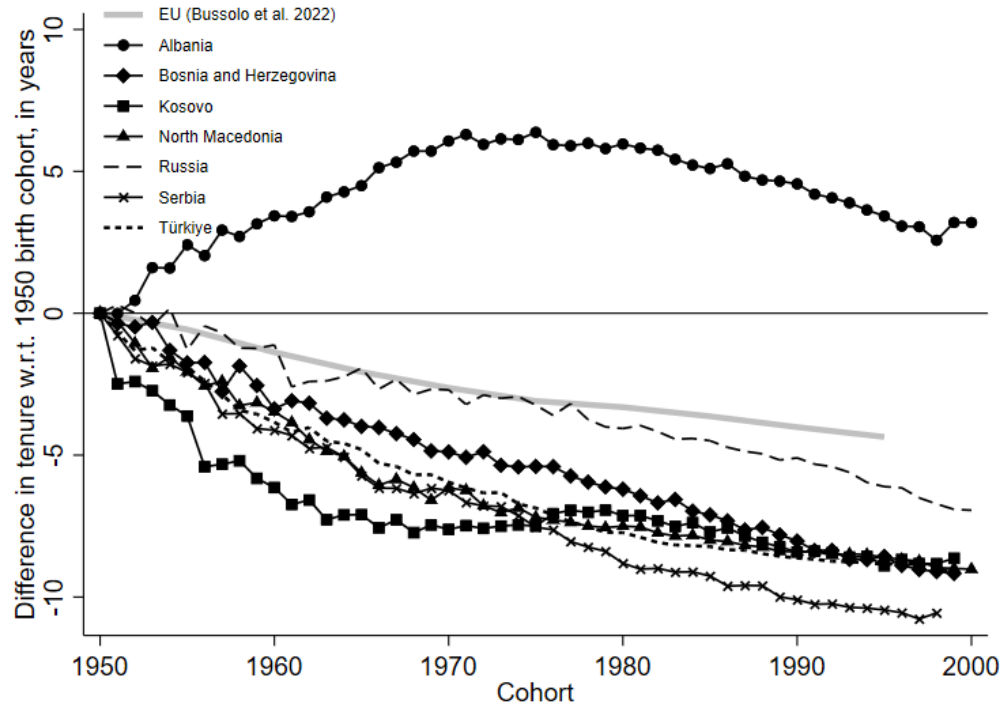
Note: Sample includes workers 20–65. Figure includes only countries for which data on the number of years of job tenure were available.

Figure 2: Age profile of job tenure



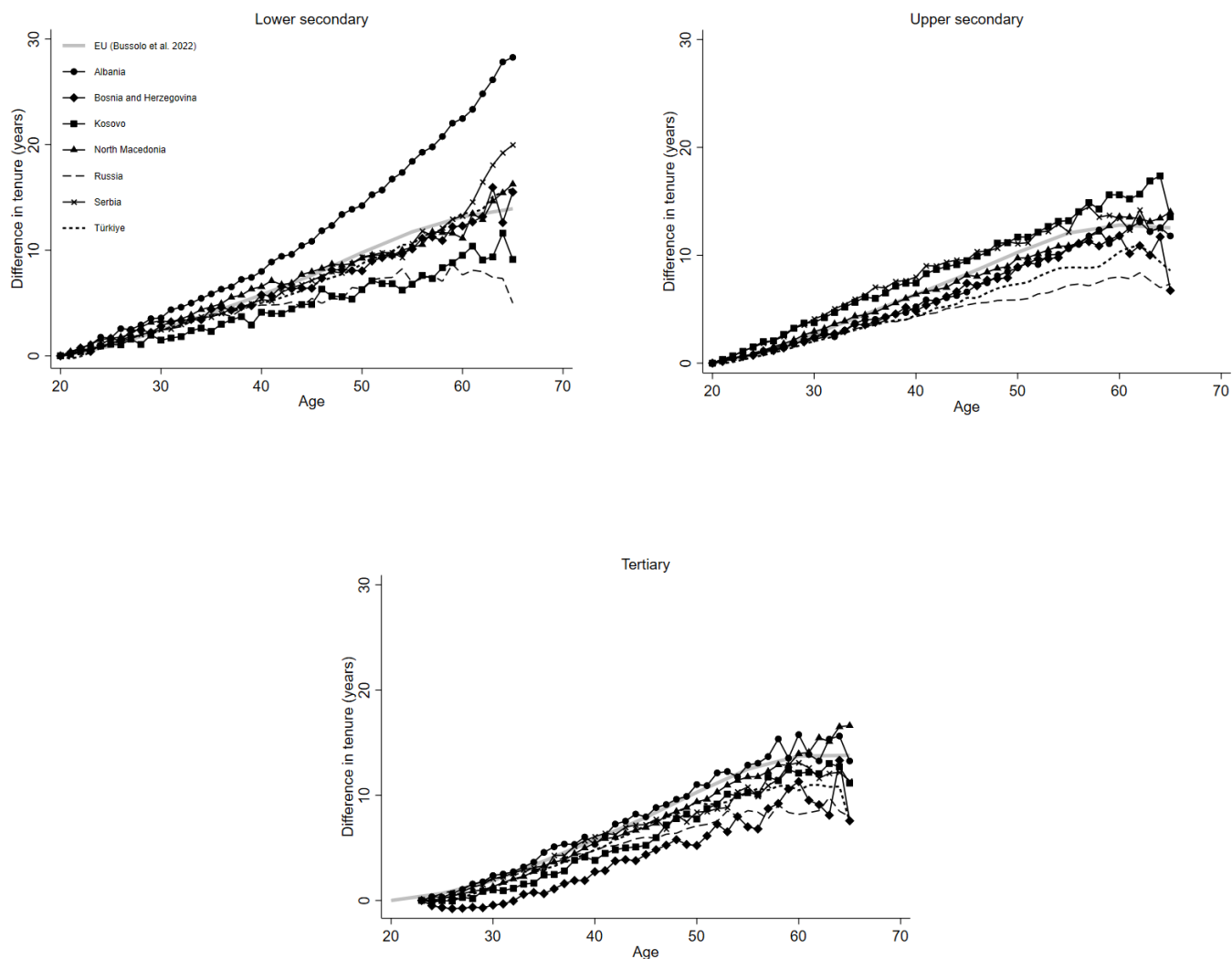
Note: Estimates are based on sample of workers 20–65 from each country. They are derived from an APC decomposition using the maximum entropy method (except for Albania, for which the Deaton-Paxson method was used). The values for EU countries correspond to an APC decomposition using the maximum entropy method; they are reproduced from [Bussolo et al. \(2022\)](#).

Figure 3: Job tenure profiles, by birth cohort



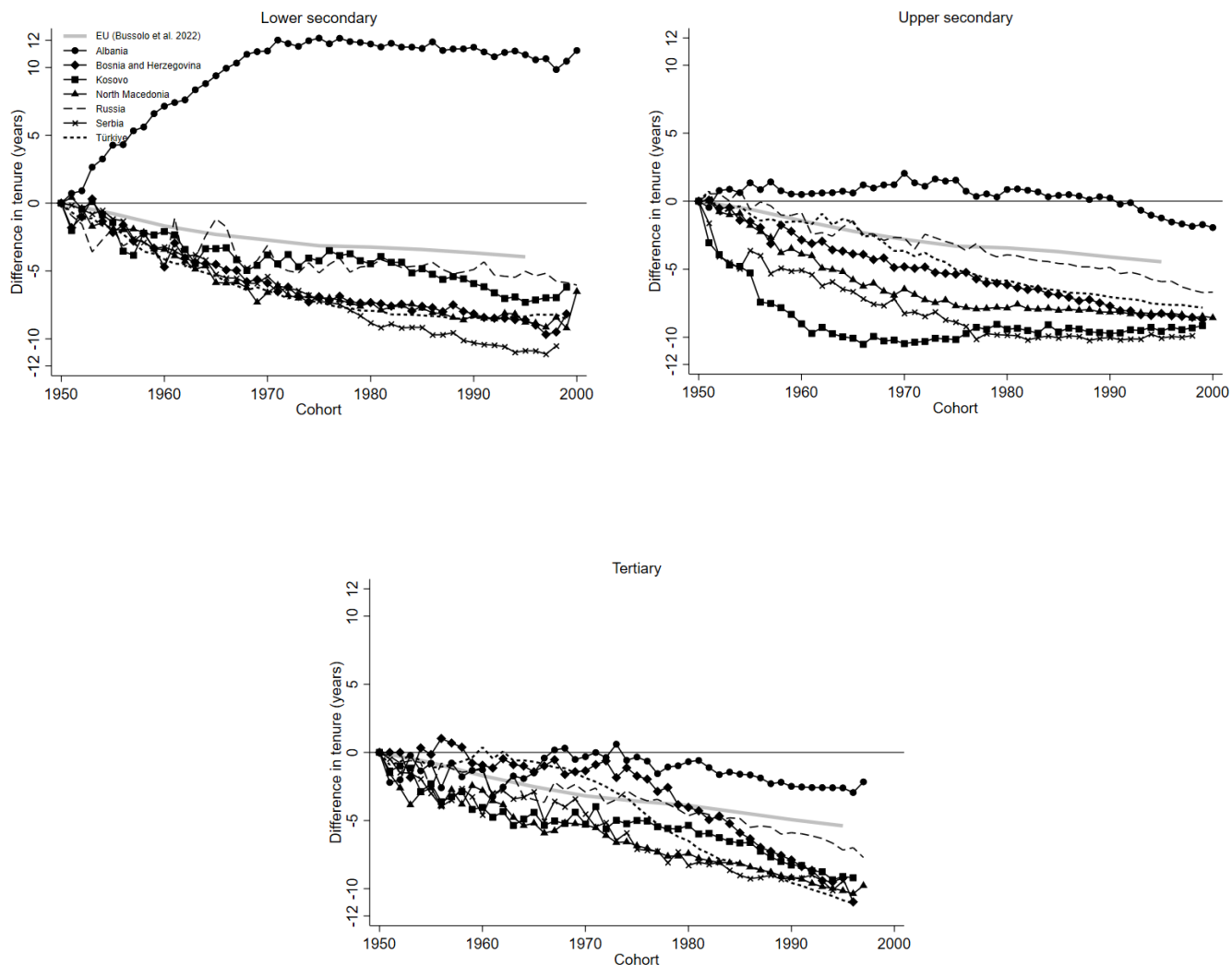
Note: Estimates are based on sample of workers 20–65 from each country; they are derived from an APC decomposition using the maximum entropy method (except for Albania, for which the Deaton-Paxson method was used). The values for EU countries correspond to an APC decomposition using the maximum entropy method; they are reproduced from [Bussolo et al. \(2022\)](#).

Figure 4: Age profile of job tenure by educational attainment



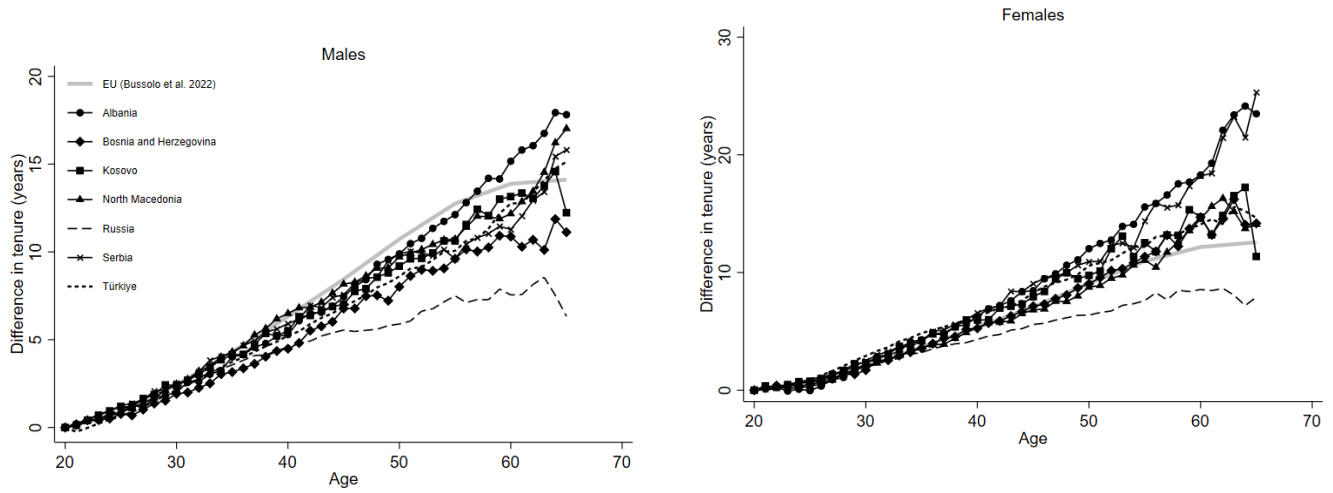
Note: Estimates are based on sample of workers 20–65 from each country. They are derived from an APC decomposition using the maximum entropy method (except for Albania, for which the Deaton-Paxson method was used). The values for EU countries correspond to an APC decomposition using the maximum entropy method; they are reproduced from [Bussolo et al. \(2022\)](#).

Figure 5: Birth cohort profile of job tenure by educational attainment



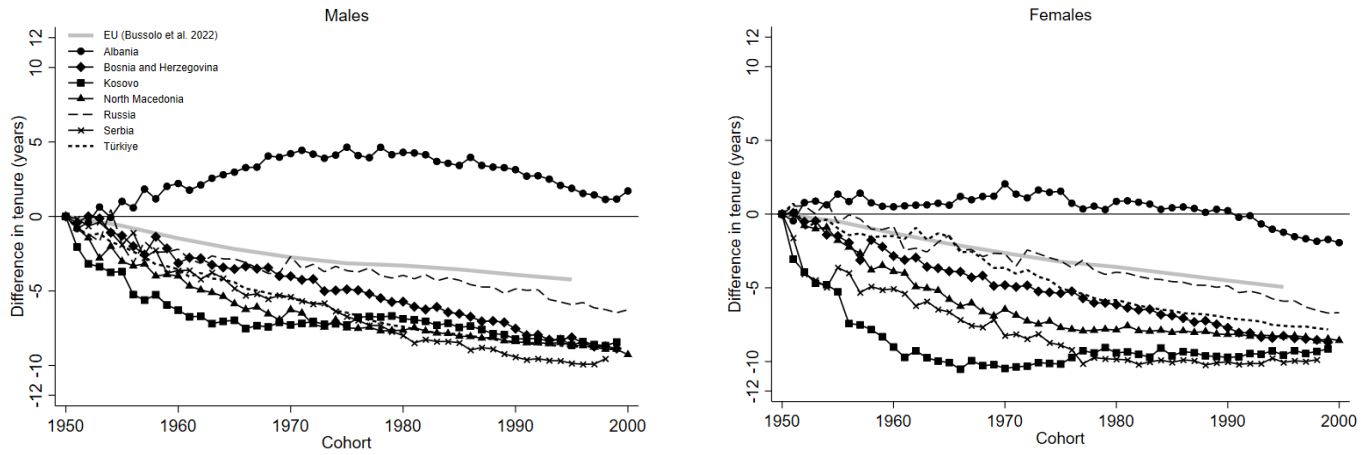
Note: Estimates are based on sample of workers 20–65 from each country. They are derived from an APC decomposition using the maximum entropy method (except for Albania, for which the Deaton-Paxson method was used). The values for EU countries correspond to an APC decomposition using the maximum entropy method; they are reproduced from [Bussolo et al. \(2022\)](#).

Figure 6: Age profile of job tenure by gender



Note: Estimates are based on sample of workers 20–65 from each country. They are derived from an APC decomposition using the maximum entropy method (except for Albania, for which the Deaton-Paxson method was used). The values for EU countries correspond to an APC decomposition using the maximum entropy method; they are reproduced from [Bussolo et al. \(2022\)](#).

Figure 7 Birth cohort profile of job tenure by gender



Note: Estimates are based on sample of workers 20–65 (22–65 for tertiary graduates) from each country. They are derived from an APC decomposition using the maximum entropy method (except for Albania, for which the Deaton-Paxson method was used). The values for EU countries correspond to an APC decomposition using the maximum entropy method; they are reproduced from [Bussolo et al. \(2022\)](#).

Table 1 Coverage of job tenure sample

<i>Country</i>	<i>Sample size</i>	<i>Start year</i>	<i>End year</i>	<i>Number of years with tenure data</i>	<i>Average tenure (years)</i>	<i>Percent of workers with tenure</i>		
						<i>< 1 year</i>	<i>5–10 years</i>	<i>> 10 years</i>
Albania	125,926	2002	2020	15	11.47	13.56	40.68	45.75
Bosnia and Herzegovina	91,629	2006	2019	14	11.02	11.1	34.66	54.24
Kosovo	115,752	2003	2019	11	9.77	8.12	36.73	55.15
Moldova	194,780	2003	2009	7	n.a. ^a	13.64	25.11	61.25
North Macedonia	260,171	2005	2020	16	11.37	10.76	35.22	54.02
Russian Federation	166,580	1994	2020	25	7.35	22.39	36.96	40.64
Serbia	110,261	2008	2018	9	13.09	11.13	32.03	56.84
Türkiye	1,381,171	2011	2019	9	9.42	37.18	30.45	32.37

Note: Start and end years denote the first and last year for which data were available. Data are missing for Albania for 2004, 2006, 2010, and 2019; Kosovo for 2004–07 and 2010–11); for Russia for 1997 and 1999; and for Serbia for 2012 and 2015.

a. Moldova reports job tenure only as a categorical variable.

Table 2 Summary statistics for whole sample

<i>Variable</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Tenure (years)	9.73	10.26	0	63
<i>Gender, age, and marital status</i>				
Male	0.65	0.48	0	1
Age (years)	40.53	11.41	20	65
Married	0.77	0.42	0	1
<i>Education</i>				
Lower-secondary	0.44	0.50	0	1
Upper-secondary	0.35	0.48	0	1
Tertiary	0.21	0.41	0	1
<i>Type of contract</i>				
Permanent work	0.83	0.38	0	1
Full-time work	0.89	0.31	0	1
<i>Firm size (number of employees)</i>				
1–10	0.54	0.50	0	1
11–19	0.07	0.26	0	1
20–49	0.13	0.33	0	1
50 or more	0.26	0.44	0	1
<i>Occupation</i>				
Non-routine, cognitive	0.21	0.41	0	1
Non-routine, manual	0.53	0.50	0	1
Routine	0.26	0.44	0	1

Table 3 Average tenure in sample, by subgroup and country (years)

<i>Variable</i>	<i>Albania</i>	<i>Bosnia and Herzegovina</i>	<i>Kosovo</i>	<i>North Macedonia</i>	<i>Russia</i>	<i>Serbia</i>	<i>Türkiye</i>	<i>Country average</i>
Total	11.47	11.02	9.77	11.37	7.35	13.09	9.42	10.50
<i>Gender</i>								
Male	10.72	10.78	9.75	11.43	6.56	12.91	9.26	10.20
Female	12.36	11.44	9.83	11.28	8.05	13.34	9.77	10.87
<i>Education</i>								
Lower-secondary	13.2	13.03	9.60	14.38	6.48	14.36	10.53	11.65
Upper-secondary	10.32	10.39	9.65	10.19	7.31	11.52	6.95	9.48
Tertiary	9.03	10.08	10.23	10.99	7.71	11.17	9.18	9.77
<i>Age</i>								
25–29	3.36	2.05	2.65	2.25	1.36	2.18	1.74	2.23
30–39	8.49	7.04	7.29	6.93	5.74	7.57	6.39	7.06
40–49	8.58	7.62	7.07	7.54	5.63	8.62	6.81	7.41
50+	16.1	18.14	16.73	18.82	12.8	20.87	18.21	17.38
<i>Type of contract</i>								
Permanent	8.76	11.57	11.84	11.69	7.84	12.86	7.08	10.23
Temporary	4.23	2.44	8.47	5.1	2.53	2.91	0.25	3.70
<i>Firm size (number of employees)</i>								
Small (1–10)	12.59	9.01	8.59	9.73	5.45	13.64	10.73	9.96
Medium (11–49)	9.07	10.55	10.69	10.21	6.94	11.81	6.52	9.40
Large (50+)	9.58	13.13	12.54	12.94	9.01	12.85	8.2	11.18
<i>Occupation</i>								
Non-routine, cognitive	11.27	12.63	10.92	12.12	8.74	13.2	10.24	11.30
Non-routine, manual	12.49	10.93	8.70	11.54	5.04	14.34	10.69	10.53
Routine	7.96	10.49	9.33	10.24	7.28	11.02	6.29	8.94

Table 4 Estimated annual probability of having a job with for short, medium, and long tenures

Variable and country	Years of tenure					
	Less than 1		5–10		More than 10	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
<i>Time trend</i>						
Albania	0.235*	0.111	0.071	0.151	−0.882*	0.417
Bosnia and Herzegovina	−0.049	0.089	0.068	0.106	0.043	0.087
Kosovo	0.026	0.387	−0.981*	0.483	1.192**	0.388
Moldova	−0.027	0.465	0.386	0.278	−0.328	0.455
North Macedonia	−0.137*	0.067	0.744***	0.094	−0.58***	0.115
Russian Federation	−0.388***	0.052	0.338***	0.043	0.090	0.054
Serbia	0.022	0.256	0.153	0.123	−0.201	0.150
Türkiye	0.096	0.172	0.787***	0.126	−0.895***	0.161
<i>Time trend controlling for GDP</i>						
Albania	0.429**	0.131	−0.153	0.194	−1.083	0.633
Bosnia and Herzegovina	−0.044	0.090	0.074	0.108	0.029	0.072
Kosovo	0.424	0.369	−1.363**	0.519	1.200**	0.478
Moldova	0.315	0.592	0.560	0.396	−0.810**	0.041
North Macedonia	−0.054	0.054	0.767***	0.109	−0.682***	0.114
Russia	−0.347***	0.050	0.323***	0.047	0.061	0.057
Serbia	−0.062	0.240	0.193	0.115	−0.142	0.126
Türkiye	0.041	0.270	0.740***	0.198	−0.797**	0.248

Note: *** indicates that the coefficient is significant at 1% level, ** - at 5% level, * - at 10% level.