Skills-First Approach in the Context of the Twin Transition

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Abstract. S*kills, reskilling, and higher qualifications have become increasingly important in the labor market as a result of the labor shortage faced by economic agents. This labor shortage is due to the effects of the twin ecological and digital transitions, demographic aging, and the speed with which skill requirements in the labor market are changing and will trigger significant changes in the labor market. The paper aim is to understand the changes in the labor market in the context of the acceleration of twin transitions and how the skills-first approach could improve this transition in Romania. After reviewing the specialized literature and presenting the theoretical framework, the evolution of the Beveridge Curve in the period 2008-2022 and the social impact of the twin transition will be analyzed. The results underline the maintenance of the low capacity of the economy to create new jobs, as well as the large number of people without a job in the period 2020-2022. The top skill required in the labor market is the use of digital tools and the top occupations in this skill are ICT professionals, researchers, and engineers.*

Keywords: labor market, skills, Beveridge curve, twin transition

1. Introduction

Green and digital transition will generate new opportunities, such as the creation of new jobs, technological development, the creation of new business models and new markets, innovation, competitiveness, and the reduction of energy dependence from external sources. However, there are also negative effects from an economic and social point of view, especially in coal mining regions and other heavily industrialized regions with a high intensity of greenhouse gas emissions, such as the loss/gain of jobs in certain economic sectors. These effects can be mitigated by introducing the Just Transition Mechanism (JTM), specifically designed to make the transition happen fairly. The coronavirus pandemic has

accelerated the twin transition and the need for change, brought new career challenges, and accentuated the need for reskilling and performance improvement to cope with changes in the labor market. Among the effects on the labor market of the twin transition and the coronavirus pandemic, we can list labor shortages in various sectors of activity, the growth of remote work and changes in human resource management practices, the growth of online learning and micro-credentials and increasing the use of artificial intelligence (AI) and big data for job and skills mapping. These changes in the labor market have contributed to the emergence of a new management practice Skill First Approach which is a new approach to talent management that emphasizes a person's skills and competencies - rather than diplomas, job histories, or job titles in what regarding attracting, hiring, developing and redistributing talent. By focusing directly on skills rather than how they were acquired, the skills-first approach has the potential to democratize access to economic opportunity and good jobs for many more people than traditional approaches. The analysis by the World Economic Forum estimates, based on a geographically diverse range of data, that in total more than 100 million people in the 18 countries under analysis could be added to the global talent pool through a skills-based approach (World Economic Forum, 2023).

A workforce equipped with the skills required by the market contributes to sustainable growth, accelerates innovation, and improves the competitiveness of businesses. The year 2023 is declared the European year of skills as a result of the lack of personnel faced by European economic agents, namely 77% of EU companies encounter difficulties in finding workers with the necessary skills [16]. This initiative is intended to trigger strong investment in education, upskilling, and digital skills for all citizens, as well as the achievement of the Digital Decade target of 80% of Europeans with basic digital skills and 20 million ICT professionals by 2030 [17].

2. Literature review

According to the Future of Jobs Report 2023, over the next five years, skills gaps and the inability to attract talent will be the most important barriers affecting the industry. It also notes that the biggest job creation and destruction effects come from the environment, technology, and economic trends. The skills-first approach offers companies the opportunity to build a more solid talent base from which to recruit, including those who have struggled to access more traditional labor markets (World Economic Forum, 2023). The transition to the green economy will disrupt the labor market but will also create significant employment opportunities and the demand for green jobs will increase rapidly across sectors and industries. According to the estimate made by the International Energy Agency (IEA), a green recovery scenario could lead to almost 3.5% of additional GDP growth globally, as well as a net impact on the workforce of 9 million new jobs created every year (IEA, 2020). The previous experiences of industrial restructuring and the current development of the transition to climate neutrality underline the need for a mix of policy instruments leading to the stimulation of environmentally friendly technologies, the structural adjustments arising from the transition process, and the reorientation of the strategic decisions of local authorities towards measures that reduce greenhouse gas emissions (OECD, 2019). CEDEFOP (2021) predicts a further increase in employment of 1.2% by 2030 as a result of the implementation of the European Green Deal. Vona et al. (2018) show that environmental regulations in the US had no causal impact on aggregate employment over the period 2006–2014, but raised the demand for green skills. Marin and Vona (2019) examine the employment impact of rising energy prices (as a proxy for climate policies)

using a panel of 14 EU countries for approximately 15 years and find that while aggregate employment efects labor force are limited, climate policies have promoted the growth of high-skilled jobs (technicians, ISCO 3) and the reduction of low and medium-skilled jobs (laborer, ISCO7-9). For the mining and fossil fuel sectors, an 8% reduction in jobs is estimated, with men more affected than women and older workers (Bota, 2018). Policy action should focus on ensuring inclusive social protection, education, and training, individualized re-employment support, temporary job subsidies, and an effective regional development policy (Vandeplas, et all, 2022). Technological education remains one of the most sought-after skills in the labor market and there are millions of digital and technological vacancies globally due to the shortage of STEM talent. Therefore, there is a need to attract young people and make them aware of opportunities and growing subfields (Buchanan, Kronk, 2023). Burdett et al., 2020 and Haywood et all, 2021 identified the average cost of job loss across the economy and which category is most affected. Low-skilled workers tend to face the highest risk of job loss, take longer to find a new job, and are more likely to experience wage losses when taking on a new job workplace (Quintini and Venn 2013). Also, medium-skilled workers are more likely to transition to new jobs with different skill requirements than high- or low-skilled workers.

3. Methodological aspects

The Beveridge curve is a graphic representation of the inversely proportional relationship between the vacancy rate and the unemployment rate, being an analytical tool widely used in the specialized literature for the balance of the labor market. The Beveridge curve was developed by Christopher Dow and Leslie Dicks, in 1958, but the name of the curve comes from the British economist William Beveridge (1879-1963), from the Keynesian period, who first observed the inversely proportional relationship between the two quantities. I will present a standard standard framework in which the correspondence function is modeled as a Cobb-Douglas function between job vacancies and the number of unemployed.

$$m(u,v) = Au^{(\alpha)}v^{1-\alpha} \tag{1}$$

Where: m(u,v) – the number of correspondences in a certain period

u – the number of unemployed

v – the number of vacant jobs

A – the non-negative constant representing the efficiency of the correspondence process

α – constant lower than 1 and higher than 0

The correspondence function takes as input the number of unemployed people and the number of vacancies and gives as a result the number of correspondents, respectively the number of employed people, which is equal to the number of occupied jobs. Considering this, we can calculate the ratio between the number of correspondents representing the number of employed unemployed people over the total number of unemployed people to calculate the employment rate of the unemployed.

$$f(\theta) = \frac{m(u,v)}{u} = A\theta^{1-\alpha} \tag{2}$$

The reciprocal is also valid, expressing the number of correspondents, resulting from the correspondence function, as well as the number of occupied vacant seats compared to the number of vacant seats, we will obtain the occupancy rate of the vacant seats for the respective market.

$$q(\theta) = \frac{m(u,v)}{v} = A\theta^{-\alpha} \tag{3}$$

The functions f and g can be rewritten as a function of θ, where θ denotes the tightness of the market.

$$\theta = \frac{v}{u}$$

A market is defined as "tightness" when there are many vacancies and few workers. A common interpretation is that this θ represents the importance of a worker relative to the importance of a vacancy. Thus, in a market where θ has a high value, we can expect to see a small number of unemployed compared to the number of vacancies. Considering this definition, the formulas for f and q, respectively, the occupation rate of workers and vacancies, are intuitive from the point of view of θ. A first observation is that A, the constant respecting the effectiveness of the correspondence process, is positive and thus does not affect the sign in (2) and (3). Considering this small but very important aspect, the employment rate of workers or the rate of finding a job is increasing with the increase of the degree of tightness of the market and the occupation rate of vacancies is decreasing in this parameter. The efficiency of the functioning of the labor market is highlighted by this tool following the analysis of the movements of the curve, as follows: the movement along the curve is determined by the cyclical evolutions of the economy; inward or outward shifts of the curve are determined by structural factors such as the mismatch between available jobs and the training of the unemployed or the extent to which existing jobs are eliminated.

The compatibility between available jobs and people looking for a job is mainly determined by: the benefit system that directly affects the promptness with which the unemployed fill vacant jobs; active policies on the labor market that can facilitate the compatibility between the unemployed and vacant jobs; employment protection legislation (LPO), which consists of regulations that determine the level of employment security; limited geographical mobility which is a barrier against the compatibility between job seekers and available jobs, as a result of the low supply of the labor market in some regions of the country and the high unemployment rate in others. The lack of compatibility of qualifications may affect the long-term unemployed, whose general qualifications may have deteriorated due to lack of use, and job-specific qualifications may not be transferable. The lack of compatibility can also occur in the case of young graduates who finish a specialization and accumulate some skills that are not required on the labor market. Therefore, the Beveridge Curve is a tool for analyzing the degree to which active measures could affect the functioning of the labor market.

Changes in the evolution of the Beveridge curve are mainly due to persistent imbalances between labor demand and labor supply in a relevant dimension, usually by skill types, industries or geographic locations. The analysis of labor market imbalances in this study is limited to the national level.

Data

The drawing of the Beveridge curve was done for the period 2008-2022 using quarterly EUROSTAT data (author processing). Unadjusted data were used for the unemployment rate (percentage of unemployed people in the active population), the number of unemployed being calculated according to the

ILO (International Labor Organization) definition. For the vacancy rate, EUROSTAT data were used, unadjusted, on total CAEN activities. A "vacancy" is defined as a paid position that is newly created, unfilled, or about to become vacant: (a) for which the employer is taking active steps and is prepared to take further steps to find a suitable candidate from outside the enterprise in Cause; and (b) which the employer intends to complete immediately or within a specified time. The job vacancy rate (JVR) is the number of job vacancies expressed as a percentage of the sum of the number of filled positions and the number of vacant jobs.

The changes as a result of the ecological transition on employment by sectors, occupations and level of education recorded until 2030 in the six counties from Romania more affected (Hunedoara, Gorj, Galați, Mureș Prahova, and Dolj) are based on E3ME modeling (macroeconomic, dynamic, computerized, global model) from the study carried out by the Frankfurt School of Finance and Management financed by the EU Structural Reform Support Program (Frankfurt School, 2021). The E3ME model is a macroeconomic model based on post-Keynesian economic theory and econometric estimates of macroeconomic relationships and is based on data collected and maintained by Cambridge Econometrics.

4. Results

4.1. Discussion of the Beveridge curve

Ideally, the Beveridge curve should shift towards the origin of the axes as this indicates a high match between job seekers and job vacancies. This is possible in the conditions of economic cyclicality only following the application of effective active measures. The dynamics of the Beveridge curve for the labor market in Romania (Figure 1) in the analyzed period (2008-2022) has a hyperbolic trend that indicates the negative effects of the two crises: the economic crisis (2008) and the health crisis Covid 19 (2019), the latter combined with the effects of the energy crisis and the War in Ukraine.

In the case of the first crisis, it is identified with a lower turning point (minimum point) recorded in 2009Q4, but also in 2010Q4, which marks the transition from the recession phase, from the period 2008Q3-2009Q4, characterized by a low rate of places job vacancies and a high unemployment rate, in the phase of economic recovery characterized by a notable increase in the rate of job vacancies. The shift along the curve began in 2008, with the start of the economic crisis, and continued in 2009. The fact that during the recession there was both a significant shift along the curve and a shift to the right suggests that the imbalance in the labor market was generated both by the size of the economic recession, i.e. reduced vacancies as a result of the low capacity of the economy to create new jobs, and by the large number of people without a job, as a result of massive layoffs.

The segment of the Beveridge curve, 2009Q4-2015Q4, corresponding to the economic recovery phase is positioned to the right of the segment associated with the recession phase, which indicates one of the effects of the economic crisis, namely higher unemployment. The segment in the curve Some of the unemployed, however, did not manage to re-employ even after the economy returned to positive growth rates. This phenomenon represents the first indication of the increase in structural unemployment and is determined by the fact that, as the period in which a person is looking for a job extends, the probability of success decreases, as a result of both the deterioration of skills over time and his skills, as well as the change in the companies' requirements regarding the training of candidates. This segment can be divided into two segments with distinct characteristics 2009Q4-2012Q4 and 2013Q1-2015Q4. The first period,

although it presents a high unemployment rate and a low vacancy rate, characteristic elements of the economic crisis, is characterized by a very good adaptability of the market. It is observed that every increase in the vacancy rate results in a decrease in the unemployment rate in the next period. On the other hand, in the second period, a relatively constant increase in the vacancy rate can be observed

which does not reduce the unemployment rate as expected. This phenomenon can be explained both as an inefficiency of active measures and as a moral hazard that makes reintegration into the labor market difficult after a long period of rest.

In the period 2015Q4 – 2019Q2, a shift to the left of the Beveridge curve is observed, which shows an improvement in the compatibility between vacant jobs and workers, against the background of the decrease in the rate of people looking for a job and the active measures taken during that period.

Between 2019Q2 and 2020Q1 there is a vertical downward shift of the curve and a slight shift to the right as a result of the reduction in the vacancy rate and the increase in the unemployment rate. From 2020Q1 to 2022Q4, we observe the maintenance of the lower turning point characterized by the coexistence of the high unemployment rate with the low vacancy rate, elements characteristic of the health and energy crises and the effects of the war in Ukraine. It should be noted that the lower turning point in
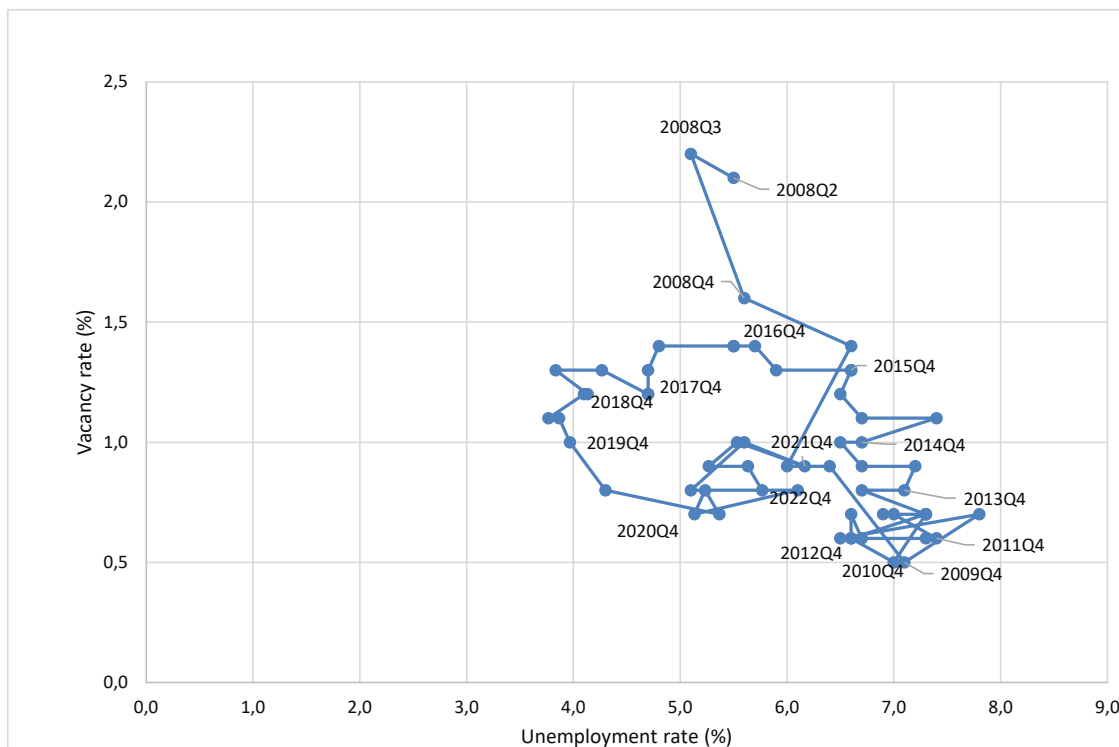

Fig.1: Beveridge Curve Romania, 2008-2022 (Author processing, Eurostat data)

the case of the economic crisis is lower and more to the right compared to the one in the COVID-19 pandemic, which indicates the greater impact on the labor market of the economic crisis of 2008.

4.2. The social impact of the transition towards climate neutrality

According to the estimates made by the Frankfurt School (2021), at the horizon of the 2030s, there will be job losses/gains, the total net loss being approximately 18,000 jobs at the level of the 6 counties in Romania that will be more affected by the ecological transition , except agriculture. Losses will be recorded in 5 counties, the largest being in Dolj, of approximately 8,000 jobs, and only in Prahova county will there be an increase of jobs, of approximately 2,000. The greatest losses will be recorded in the sectors "energy and utilities", "manufacturing industry" and "construction" and the biggest gains in "public services and other activities" and "trade, transport, and tourist services" (Frankfurt School, 2021).
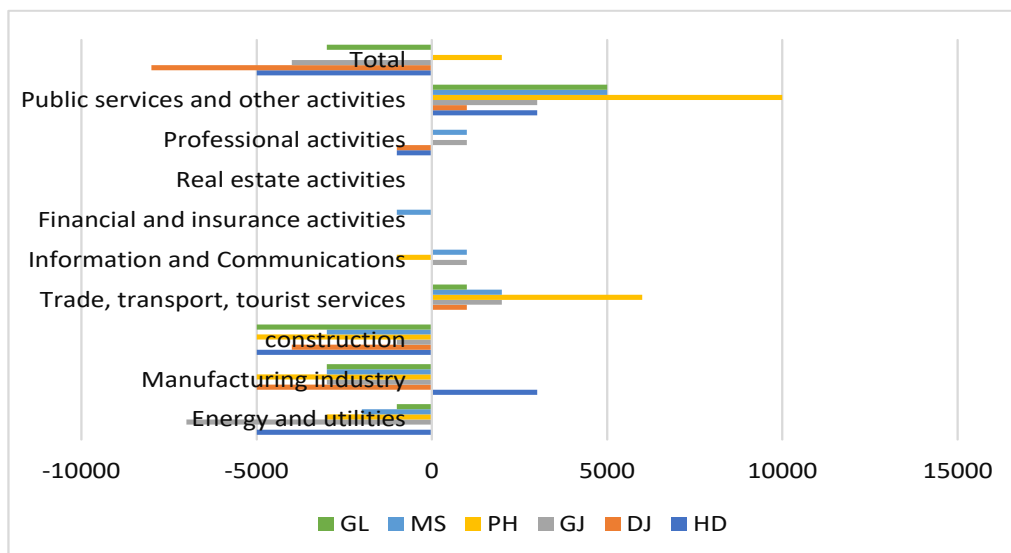

Fig. 2: Forecast sectoral change in employment 2018-2030, excluding agriculture in the baseline (no. of jobs)
Sursa: Author processing data from D4. Report on challenges, needs and possible actions for the most affected territories. (final), Frankfurt school of finance and management, 2021, pag 43.

4.3. Top occupations for Romania in online job ads

The nature and content of work have changed a lot in the last decades and therefore new methods of job analysis based on the use of new technologies are needed, in addition to the traditional ones, to see instantly and in detail how employees adapt in this context (Pasnicu, 2022). According to the analysis of online job advertisements (CEDEFOP, Skills in online job advertisements, 2022) the most requested competence on the labor market is "using digital tools for collaboration, content creation and problem solving" (15.8% of the advertisements requested this skill). Top occupations for Romania in online job ads in Using digital tools for collaboration, content creation and problem solving in 2022 are presented in Figure 3. It can be seen that ICT professionals are at the top of the requirements, followed by researchers and engineers, and in lower positions are find Office clerks and other support clerks.

Fig. 3: Top occupations for Romania in online job ads in *Using digital tools for collaboration, content creation and problem solving* 2022, (Author processing, Cedefop data, Skills in online job advertisements)

5. Conclusions

Corresponding to the Beveridge Curve, the labor market in Romania is at a lower point as a result of the effects of the Covid 19 pandemic, the energy crisis, and the war in Ukraine, characterized by the low capacity of the economy to create new jobs, as well as the large number of people without a job. At the same time, we are also talking about a shortage of skills and labor in certain sectors that have become unattractive following the Covid 19 pandemic or that require new qualifications as a result of the introduction of new technologies in the context of digital and ecological transformation. For these transformations to take place, there is a need for the qualification and retraining of the labor force, the attraction of talents and a better correspondence between the demands of the labor market and the aspirations of the citizens. To create a correspondence between the demand and supply of qualifications in the labor market, it is necessary to increase investment in technology and people, respectively in reskilling and upskilling, increase motivation and satisfaction at work, and stimulate aspirations towards STEM qualifications. A significant shift in the pace of training is needed to increase basic digital skills and IT professionals. The lack of IT specialists, engineers and researchers is a major challenge for entrepreneurs in Romania to fill certain jobs. The introduction of the "skills-first" approach in hiring and developing people can be a beneficial solution both for companies and for the economy and society in general because it allows talent to access better and better-paid jobs. This approach is beneficial for businesses because it increases the potential talent pool and favors finding the specific talents needed in the new context.

6. Acknowledgements

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