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Article

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Efficiency of the Active Labour Market Policies: Evidence from the Slovak Republic[1]

*Katarína KARASOVÁ – Vladimír BALÁŽ – Zuzana POLAČKOVÁ**

Abstract

This paper analyses the performance of active labour market policies (ALMP) in Slovakia. We found limited evidence of the economic efficiency of the ALMP in Slovakia. We quantify the relative importance of the ALMP compared to other factors for the employability of job seekers. ALMP performance relates to a host of external factors, such as business cycles, the number of local job vacancies, discrimination towards some ethnic minorities, and levels of regional development. Furthermore, we quantify policy effectiveness of the most important ALMP instruments. The concluding part of the paper points towards the importance of the ongoing demographic transition for revamping the current structure of ALMP.

Keywords: *active labour market policies, demographic transition, employability*

JEL Classification: J08, J11, J21

1. Introduction: The Case for the Active Labour Market Policies

1.1. The Rationale for the Active Labour Market Policies

The economic theory recognises some market failures that individuals and firms may encounter on labour market. The failures may result from imperfect matching process of workers and jobs, information asymmetry between job-seekers and potential employers, wage rigidities, discrimination of minorities, or simply from poor labour market opportunities (Blanchard and Katz, 1997). Credit constrains may prevent employers to invest in job training. Some firms may be unwilling to invest to training, as the employees may seek higher wage jobs with

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different employers (Becker, 1964). Matching process on labour market also may be impacted by barriers to occupational and geographical mobility of workers.

Public intervention may alleviate some barriers to matching process on labour markets. Policies targeting increase in ability and willingness of the unemployed to take jobs are grouped under the heading of 'active labour market policies' (ALMP) (Nickell et al., 2001, p. 4).

A conventional definition (Calmfors, Forslund and Hemström, 2002, p. 2) groups ALMP to three major categories: (i) job broking activities with the aim of improving the matching, between vacancies and unemployed; (ii) labour market training; and (iii) job creation (subsidised employment). The rationale for ALMP is that an effective matching process increases employment levels and improves wage-setting mechanisms. The more quickly the vacancies are filled, the less costly they come for firms and employers.

The early ALMP were developed in 1950s in Nordic countries. They sought to improve the match between demand and supply of labour by subsidising large-scale vocational training programs (Bonoli, 2010, p. 439). Selective job creation programmes, aimed at elimination of unemployment by specific social groups, followed in the late 1960s and early 1970s. Over time, holding down unemployment in general in recessions became more important in 1980s and 1990s (Calmfors, Forslund and Hemström, 2002, p. 4). There are hundreds of ALMP instruments in OECD countries at present. High costs of ALMP raise concerns about efficiency of the public intervention on labour markets. High number of evaluation studies brought s mixed evidence on efficiency of the ALPM in terms of (1) job generation, and (2) value for money.

1.2. Paper Structure

This paper analyses the performance of ALMP in Slovakia. The Chapter 2 reviews evidence on ALMP efficiency from the large-scale meta-analyses. Major factors of ALMP performance are identified. Chapter 3 presents the unique dataset on 4.7 million registrations by 1.9 million seekers for 2007 – 2017 in Slovakia. The key variables of ALMP performance, based on the literature review and data structure, are identified. The ALMP performance is analysed via set of logistic regression in Chapter 4. The 'value for money' of the ALMP is quantified in Chapter 5. The concluding part of the paper discusses key findings and suggests some policy recommendations. Our paper makes several original contributions.

- We aim at a comprehensive examination of the ALMP role in supporting employment and employability. We use the largest available database on ALMP

thus far. The analysis covers 75% of ALMP spending aimed at increasing employment and employability in the period 2010 – 2017.

- ALMP performance is analysed within a broader socioeconomic context. The importance of ALMP relative to the external environment is examined. The impact of regional development and potential discrimination on ALMP performance is analysed for the first time, to the best of our knowledge.
- Finally, we quantify 'value for money' in the most important ALMP instruments in the period 2010 – 2017.

2. Factors of ALMP Performance: Evidence from the Empirical Studies

The ALMP expenditure is substantial in advanced economies. OECD data indicate that the share of ALMP expenditure in GDP varies between 0.2% and 3.2% GDP in OECD countries (Appendix 1, Figure 1). The basic idea behind the introduction of the ALMP was to shift public expenditure from passive spending on unemployment insurance and benefits towards the reduction of structural unemployment. The ALMP were considered major intervention tools for countercyclical policies in labour markets (Weishaupt, 2011).

Hopes that higher spending on ALMPs would generate more jobs and decrease unemployment rates often proved too naive (Martin, 2015, p. 2). Many cross-country evaluations have found effects of the ALMP on job generation to be mixed, at best (Štefánik, 2014). Escudero (2018, p. 21), for example, examined the ALMP database for 31 OECD countries during the period 1985 – 2010 and found 'success at the aggregate level contentious and incomplete'. A recent meta-analysis of 57 experimental and quasi-experimental studies concluded that 'ALMPs are generally successful in improving the labour market outcomes of their participants, yet the effects are small' (Vooren et al., 2018, p. 3). This view is also supported by a low correlation between ALMP expenditure and unemployment rates. Eurostat data, for example, indicate that the respective correlation coefficient for ALMP expenditure (as a percentage of GDP) and the unemployment rate was merely $R = 0.042$ in 2016 in the 28 EU member countries and Norway (Appendix 1, Figure 1). High costs of the ALMP need not necessarily be associated with high numbers of jobs created/sustained by the ALMP instruments (Brown and Koettl, 2015). Limited experience with positive outcomes of the ALMP sometimes impacts upon the willingness of policymakers to consider ALMP investment in human capital.

Some cross-country studies have applied a more nuanced view of the ALMP. They acknowledge that national public labour market policies greatly differ in

their scope, intensity, targets, and management arrangements. The structure of expenditure by category reflects not only specific trends and problems in national labour markets, but also costs associated with specific categories of ALMP. Some countries are able to implement an efficient mix of policy instruments and get the unemployed to work, while others fail to do so.

A meta-analysis of 199 ALMP in 26 OECD countries in the period 1996 – 2007 (Card, Kluve and Weber, 2010) indicated that specific categories of ALMP varied in their ability to generate sustainable jobs. There were also significant differences in short- and long-term impacts of specific ALMP categories on job creation. The subsidised public sector employment programmes performed poorly in terms of generating sustainable jobs in the short term (Card, Kluve and Weber, 2010), but their effects may become positive in the longer term (Vooren et al., 2018, p. 15). The ALMP targeting the accumulation of human capital (classroom and on-the-job training programmes) had the most favourable impacts from medium- and long-term perspectives (2 – 3 years and over 3 years respectively). The ALMP aimed at job search assistance (or sanctions for failing to search) performed well from the short-term perspective (up to 1 year). ALMP targeting youths were less likely to have positive impacts than were untargeted programmes. Similar conclusions were drawn by a meta-analysis of 137 ALMP from 18 EU countries and the USA (Kluve, 2010). Caliendo and Schmidl (2016) also found the efficiency of ALMP targeting young people to be questionable.

The most recent meta-analysis of the ALMP surveyed 526 ALMP instruments from 47 countries in the period 1980 – 2012 (Card, Kluve and Weber, 2017). The meta-analysis found that the ALMP have more positive impacts in the medium and long terms than in the short term. The ALMP results also vary by category of support. The ALMP targeting job search assistance have similar results from short-, medium- and long-term perspectives. The classroom and on-the-job training programmes generate the most positive impacts after 2 or 3 years. As for the specific socioeconomic groups, the most positive impacts were found for female and elderly job seekers, while impacts on young people are doubtful. The ALMP supporting the accumulation of human capital were beneficial for the long-term unemployed. The ALMP seem to operate well for highly motivated job seekers, e.g. single mothers. Suboptimal outcomes were found for job seekers with physical and mental conditions (Martin, 2015, p. 22).

Many factors of a relatively meagre performance of the ALMP may lie outside of the remit of the ALMP design. ALMP performance depends on many external factors, such as demographic developments, business cycles, the limited number of job vacancies, inflexible labour laws, underdeveloped infrastructure,

discrimination towards certain minorities, and/or insufficient demand. The above-mentioned factors may combine and depress the policy efficiency of the ALMP.

The ALMP may operate with different efficiency during specific phases of business cycles. Card, Kluve and Weber (2017, p. 34) found that the ALMP performed well if participants were 'enrolled in a program during a downturn and exit the program during a period of favourable economic conditions'. The finding indicates that the ALMP may be more effective during short-term economic contraction but less so during prolonged recession. Forslund, Frederiksson and Vikström (2011) suggested that labour market training performs better during recession than does on-the-job training.

ALMP performance may also be impacted by demographic developments. Strong cohorts of 'baby boomers' dominated the labour market in the 1990s and 2000s in many OECD countries. By the late 2010s, some new member countries of the EU were affected by a combination of high emigration rates and the rapid pace of population ageing (Bouman et al., 2015). The labour market shrank, the unemployment rate fell and wages rose. Some new member countries suddenly faced an acute lack of a labour force. As for the Slovak Republic, the total numbers of the unemployed halved in the period 2010 – 2017. The Eurostat data on GDO indicate that Slovakia enjoyed solid, but not spectacular growth in GDP (3.0% p.a.). The growth was not enough to explain the dramatic fall in unemployment. It was much easier to find a job in 2017 than in 2012 in respect of all classes of the unemployed in Slovakia.

Finally, as noted in the introduction, imperfect matching process can be impacted simply by lack of employment opportunities on local markets.

3. Research Hypotheses, Data Sources and Methods

3.1. Research Hypotheses

This paper tests the following hypotheses:

H1: *The ALMP have limited impacts on employment in Slovakia. Most ALMP participants are self-selected for failure in the labour market.*

H2: *The employability of job seekers is determined by a number of factors internal and external to a job seeker. The most important factors include the socio-demographic profile of a job seeker, the availability of job vacancies, the level of regional development, patterns of discrimination in labour markets, and demographic developments.*

H3: *There are significant variations in the rate of return among specific ALMP instruments.*

3.2. Data Sources

Slovak ALMP instruments are labelled according to specific Sections of the 5/2004 Law on Employment Services. The COLSAF administered over 30 ALMP instruments in the period 2007 – 2017. The total ALMP expenditure was EUR 1,151.71 million in 2010 – 2017.[2] Slovak expenditure on ALMP was around half of that of the EU and similar to that in other new member countries (Appendix 1, Figure 1). Slovak ALMP instruments were grouped into two major categories: (1) ALMP aimed at increasing employment and employability (85.4% of the total job seekers and 74.9% of the total spending), and (2) ALMP aimed at supporting job retention (14.6% of job seekers and 25.1% of ALMP spending). We analysed eight major ALMP instruments in the first category:

- Sec. 49 supported self-employment. Job seekers received an advanced payment of EUR 3,126 – EUR 5,002 (depending on the level of registered unemployment in their home region) and lost social benefits for 2 – 3 years;
- Sec. 50i+j targeted disadvantaged job seekers (50+ years of age and/or people with low educational levels); it subsidised labour costs in the regional public sector (contribution per participant totalled up to 60% of the total average labour costs for 9 months);
- Sec. 51 targeted graduates (up to the age of 26 years); traineeship subsidised labour costs for a period of 3 – 6 months (up to 65% of the monthly living wage per participant);
- Sec. 52 subsidised public works; it provided low-cost support to the long-term unemployed (up to 3 – 6% of the total average labour costs per participant);
- Sec. 52a supported public works combined with voluntarism in social, cultural, ecological and humanitarian activities (up to 3 – 7% of the total average labour costs per participant);
- Sec. 54 implemented various national projects; it mostly subsidised job creation via the partial reimbursement of labour costs;
- Sec. 54 REPAS reimbursed in respect of the short-term re-training courses;
- Sec. 54 BAZ supported matching job seekers with employers; it assisted job searches for the young unemployed (up to the age of 29 years); it also reimbursed costs of mentoring and subsidised labour costs for up to 9 months.

Further details of the ALMP instruments can be found in Table 5.

The eight ALMP instruments involved 47.2% of the total job seekers and accounted for 81.8% of the total spending on the ALMP in category (1) in the period 2010 – 2017.[3] The ALMP supporting job retention mostly targeted people with health and mental disabilities in Slovakia. Support was provided repeatedly

[2] Data on jobseekers covered period 2007 – 2017, but data on actual financial support were available only for period 2010 – 2017.

on a quarterly basis and became quite costly. The ALMP instruments subsidising employment of the disabled had more of a social mission than an economic one in Slovakia. Given their specific mission and mode of support, these instruments were excluded from analysis.

We used two databases provided by the COLSAF to analyse the performance of ALMP in Slovakia. The first database contained individual data on 4,701,446 registrations by 1,857,616, job seekers for 2007 – 2017. A job seeker could have multiple registrations with the COLSAF. A minority of total job seekers were allocated to one or more ALMP. The second database contained data on 1,576,080 registrations by 658,110 job seekers allocated to ALMP from the period 1. 1. 2007 to 31. 12. 2016. Success rates were observed till 31. 12. 2017. Data cleaning was performed before analysis. Details can be found in Appendix 2.

Table 1 presents key descriptive statistics from the COLSAF database.

T a b l e 1

Descriptive Statistics for Job Seekers in Major ALPM

ALMP		**Gender**	**Age, years**		**Education**		**Length, days**	
Sec.	*Valid N*	*% female*	*mean*	*std. dev.*	*mean*	*std. dev.*	*mean*	*std. dev*
Non-participants	1,365,055	47.29	34.19	12.43	2.83	0.92	x	x
49	58,843	37.4	36.44	10.01	3.01	0.72	737.91	54.43
50i+j	23,381	33.8	41.24	12.51	2.38	1.06	207.29	65.26
51	84,984	63.5	21.61	2.04	3.28	0.55	143.82	45.98
52	173,387	47.3	37.14	11.60	1.66	1.12	131.33	39.33
52a	51,195	67.7	37.77	11.98	2.60	1.06	162.09	36.27
54	36,410	46.4	32.68	12.22	2.77	0.95	277.11	162.02
54 BAZ	52,532	46.1	23.41	2.87	2.94	0.89	72.76	45.15
54 REPAS	27,099	61.6	36.86	11.15	2.97	0.84	35.07	21.94

Notes: Sec. 50i and Sec. 50j were considered identical and merged to one instrument in analysis. Level of education: 0 = less than primary; 1 = primary; 2 = lower middle; 3 = higher middle; 4 = Bachelor's and Master's degrees; 5 = PhD and similar degree.

Source: Authors' computations.

3.3. Model Specification

The model specification is based on (i) theoretical rationale for ALMP; (ii) factors of ALMP performance, as suggested by the literature reviews; and (iii) structure of available data.

The COLSAF databases contain a significant share of missing data. The available data, unfortunately, do not indicate whether a job seeker found a job. The data only indicate whether a job seeker returned to or dropped out of the COLSAF registry. Dropping-out need not necessarily mean that a job seeker found a job.

[3] Some 2.87 million jobseekers received free job advice with the COLSAF office in the above-mentioned period. The advice is provided under Sec. 42 of the 5/2004 Law. The activity has no formal rules and no budget. We do not consider this activity ALMP and exclude from the analysis.

One third of the total job seekers dropped out of the registry for other reasons (retired, died, emigrated, lost right to support). The logistic regression analysis therefore concentrated on job seekers' rate of repeated registration with the COLSAF ('rate of failure'), rather than on data on employment ('rate of success').

We computed two sets of logistic regressions: (a) eight instrument-specific regressions and (b) one general regression. The general regression analysed employability *between ALMP* and external factors. The eight specific regressions examined employability *within each ALMP*:

a) The general regression included job seekers both with and without a history of participation in ALMP (Table 2). Job seekers were checked 1 year after the exit from registration. Repeated registration 1 year after his/her inclusion in some of the ALMP instruments was the dependent variable (0 = no, 1 = yes). The general regression analysed the importance of specific ALMP compared to the external environment and other ALMP. The general regression included dummy variables for participation in the eight ALMP (0 = no, 1 = yes).

b) Eight regressions were constructed for the most important ALMP instruments. The regression included only job seekers with a history of participation in specific ALMP. Job seekers were checked 1 year after their exit from the specific ALMP (Table 3).

The independent variables included the following:

- Vector of socio-demographic variables for job seekers (gender, age and education[4]). Many studies indicate that these variables are significant for the degree of employability (see, for example, Kluve, 2010);
- Length of days spent in ALMP instrument; for some instruments the variable approximates the human capital acquired during training;
- Business cycle, approximated via the GDP growth rate;
- Vector of external factors: (i) impact of demographic development on labour market shrinkage; (ii) number of unemployed per job vacancy in the region of the job seeker's residence; (iii) level of regional development in the region of the job seeker's residence (approximated by the number of firms per 1,000 population and the average wage); and (iv) potential discrimination in the labour market (approximated by the share of the Romani population).

The availability of local jobs is a very important condition of employability. We analysed the COLSAF data on number of vacancies and unemployment rates in 79 Slovak districts. The average number of job vacancies per job seeker dropped from 0.1482 in 2007 to 0.0115 in 2012, but increased to 0.6026 by 2017. There were significant disparities in labour supply and labour shortages

[4] The COLSAF database contains fragmentary data on marital status, number of children, language and computing skills. The missing data had very unequal regional distribution and were excluded from the analysis.

among districts. The average number of job vacancies per job seeker was 0.0078 in the district of Gelnica, but was 0.9552 in the district of Bratislava 1 in the period 2007 – 2017 (Appendix 1, Figure 2). We considered regional rate of job vacancies per job seeker an independent variable in the model.

Data on the demographic balance ('labour market shrinkage') were missing on regional levels. They were approximated via unemployment rates for each of 79 districts.

Some independent variables were highly correlated. So as to avoid potential problems with multicollinearity, we conducted an exploratory factor analysis. Two factors were discovered. Variables 'numbers of firms per 1,000 population', 'average wages' and 'number of job seekers per job vacancy' were highly loaded on Factor 1, i.e. 'level of economic development'. Variables 'unemployment rates' and 'share of Roma population' were highly loaded on Factor 2, i.e. 'unemployment & discrimination'. Details of correlation and factor analysis can be found in Appendix 3, Tables 7 – 9.

Factor scores were used as inputs to the logistic regressions. Potential multicollinearity and the distribution of residuals were measured.[5] No significant problems were detected (Appendix 3, Table 10). Data for Factors 1 and 2 were available for 11 years and 79 Slovak districts (869 observations). Annual data on GDP were available on a national basis (11 observations).

4. Performance of the ALMP in Slovakia: Key Empirical Findings

All variables in the general equation were highly significant except fort the Sec. 54. Coefficients had expected signs. Males were less likely to re-register with the COLSAF office. Older job seekers were more likely to re-register, but the B coefficient for age was quite low. Education was an extremely important factor of employability. The negative coefficient for the educational level indicates that job seekers with the lowest level of education had the highest chance of re-registering. The positive coefficient for the length of instruments implies that job seekers with long stays in the ALMP instrument(s) were more likely to re-register. The finding is impacted by the high numbers of repeated participation in the Sec. 52 instrument. The coefficient for GDP growth was negative. The higher the growth rates, the lower the chance of repeated registration with the COLSAF office.

[5] The Hosmer-Lemeshow test is applied to examine model fit in logistic regression. The test is based on the chi-square distribution and is sensitive to sample size. The test in not recommended for samples over 25,000 cases (Paul, Pennell and Lemeshow, 2012; Yu, Xu and Zhu, 2017). Our sample was much larger. We did not apply the test.

T a b l e 2

General Logistic Regression

	B	S.E.	Wald	df	Sig.	Exp(B)
Length (days spent in instrument)	0.002	0.000	103 937.69	1	0.000	1.002
Gender	–0.073	0.003	632.34	1	0.000	0.929
Education (level)	–0.167	0.001	12 463.19	1	0.000	0.847
Age (years)	0.000	0.000	11.35	1	0.001	1.000
GDP growth rate	–0.018	0.000	1 283.54	1	0.000	0.983
Factor 1 (economic development)	–0.147	0.002	4 816.45	1	0.000	0.863
Factor 2 (unemployment & discrimination)	0.161	0.001	14 799.74	1	0.000	1.175
Sec. 49	–1.255	0.016	6 166.07	1	0.000	0.285
Sec. 50ij	0.385	0.010	1 616.65	1	0.000	1.469
Sec. 51	0.169	0.006	837.85	1	0.000	1.184
Sec. 52	0.634	0.005	16 101.93	1	0.000	1.885
Sec. 52a	0.249	0.007	1 124.24	1	0.000	1.283
Sec. 54	–0.010	0.010	0.95	1	0.330	0.990
Sec. 54 BAZ	–0.052	0.014	14.52	1	0.000	0.949
Sec. 54 REPAS	–0.121	0.019	39.50	1	0.000	0.886
Constant	–1.186	0.006	35 646.69	1	0.000	0.305
	Nagelkerke R2 = 0.271; N = 3,605,169					

Notes: Dependent variable: a jobseeker was registered with the COLSAF office after one year: 0 = no; 1 = yes; male = 0, female = 1. Level of education: 0 = less than primary; 1 = primary; 2 = lower middle; 3 = higher middle; 4 = Bachelor's and Master's degrees; 5 = PhD and similar degree.

Source: Authors' computations.

Factor 1 approximated the development levels of 79 Slovak districts in terms of average wages, numbers of firms, and job vacancies. The higher the level of development, the lower the chance of repeated registration. Factor 2 indicated how regional unemployment rates and the potential discrimination of Romani job seekers impacted upon employability. High factor scores were positively associated with repeated registration.

The general regression indicated that participation in Sec. 50i+j, Sec. 51, Sec. 52 and Sec. 52a was positively related to registration with the COLSAF office, while that in Sec. 49, Sec. 54 REPAS and Sec. 54 BAZ was negatively related to repeated registration with the COLSAF office. In other words, participants in ALMP instruments supporting regional employment, public works and traineeships for graduates were more likely to fail in the labour market than were job seekers with no history of ALMP. The finding is not as surprising as it seems. In some way, the ALMP participants were negatively selected for success in the labour market. A job seeker had to be unemployed for several months to qualify for participation in most ALMP instruments. If a job seeker found a job within a period specified by the 5/2004 Law, he or she did not participate in the ALMP. Descriptive statistics for job seekers indicate that the ALMP participants accounted for lower average educational levels than did job seekers with no history of participation in ALMP (Table 1).

T a b l e 3

Logistic Regressions for Eight Major ALMP

	Sec. 49 self-employment; N = 58,843						**Sec. 51 graduates; N = 84,984**					
	B	S.E.	Wald	df	Sig.	Exp(B)	B	S.E.	Wald	df	Sig.	Exp(B)
Length	–0.002	0.000	35.00	1	0.000	0.998	0.002	0.000	197.05	1	0.000	1.002
Gender	0.157	0.026	36.06	1	0.000	1.170	–0.038	0.016	5.59	1	0.018	0.963
Education	–0.500	0.016	965.71	1	0.000	0.606	–0.538	0.017	983.29	1	0.000	0.584
Age	0.002	0.001	1.64	1	0.201	1.002	0.051	0.005	124.61	1	0.000	1.052
GDP	0.013	0.010	1.73	1	0.188	1.013	–0.027	0.003	61.08	1	0.000	0.974
F1	–0.591	0.036	265.27	1	0.000	0.554	–0.307	0.015	422.29	1	0.000	0.735
F2	0.314	0.011	789.49	1	0.000	1.369	0.189	0.007	713.68	1	0.000	1.208
Constant	1.052	0.251	17.52	1	0.000	2.864	–0.329	0.086	14.65	1	0.000	0.720
	Nagelkerke R2 = 0.096						Nagelkerke R2 = 0.052					
	Sec. 50i+j, regional employment; N = 23,381						**Sec. 54 BAZ; N = 52,532**					
	B	S.E.	Wald	df	Sig.	Exp(B)	B	S.E.	Wald	df	Sig.	Exp(B)
Length	–0.003	0.000	139.32	1	0.000	0.997	0.008	0.000	982.97	1	0.000	1.008
Gender	–0.165	0.030	29.37	1	0.000	0.848	0.210	0.021	101.64	1	0.000	1.233
Education	–0.375	0.014	716.27	1	0.000	0.687	–0.189	0.012	266.26	1	0.000	0.828
Age	0.004	0.001	10.90	1	0.001	1.004	0.040	0.004	119.87	1	0.000	1.041
GDP	0.005	0.018	0.07	1	0.795	1.005	–3.708	0.407	83.17	1	0.000	0.025
F1	–0.331	0.035	87.77	1	0.000	0.718	–0.220	0.012	314.60	1	0.000	0.802
F2	0.278	0.014	423.09	1	0.000	1.321	0.321	0.011	831.65	1	0.000	1.379
Constant	1.501	0.080	347.94	1	0.000	4.487	10.555	1.371	59.27	1	0.000	38.355
	Nagelkerke R2 = 0.112						Nagelkerke R2 = 0.095					
	Sec. 52 community works; N = 173,378						**Sec. 52a volunteers; N = 51,195**					
	B	S.E.	Wald	df	Sig.	Exp(B)	B	S.E.	Wald	df	Sig.	Exp(B)
Length	0.005	0.000	898.01	1	0.000	1.005	0.006	0.000	490.66	1	0.000	1.006
Gender	0.225	0.012	344.77	1	0.000	1.253	–0.194	0.022	80.88	1	0.000	0.824
Education	–0.133	0.005	583.44	1	0.000	0.876	–0.235	0.010	514.89	1	0.000	0.790
Age	0.036	0.001	4 290.79	1	0.000	1.037	0.021	0.001	649.07	1	0.000	1.022
GDP	–0.043	0.002	609.01	1	0.000	0.957	–0.112	0.003	1 283.24	1	0.000	0.894
F1	–0.242	0.014	292.34	1	0.000	0.785	–0.221	0.016	199.44	1	0.000	0.802
F2	0.211	0.005	1 523.26	1	0.000	1.235	0.153	0.008	332.45	1	0.000	1.165
Constant	–0.817	0.031	709.68	1	0.000	0.442	–0.624	0.064	93.86	1	0.000	0.536
	Nagelkerke R2 = 0.069						Nagelkerke R2 = 0.165					
	Sec. 54 projects N = 36,410						**Sec. 54 REPAS trainings N = 27,099**					
	B	S.E.	Wald	df	Sig.	Exp(B)	B	S.E.	Wald	df	Sig.	Exp(B)
Length	–0.001	0.000	326.01	1	0.000	0.999	0.001	0.001	0.87	1	0.350	1.001
Gender	–0.109	0.024	20.93	1	0.000	0.897	0.280	0.028	97.85	1	0.000	1.324
Education	–0.324	0.013	654.80	1	0.000	0.723	–0.178	0.016	130.68	1	0.000	0.837
Age	0.033	0.001	1 147.43	1	0.000	1.034	0.014	0.001	134.43	1	0.000	1.014
GDP	0.017	0.017	0.96	1	0.326	1.017	–1.198	0.255	22.03	1	0.000	0.302
F1	–0.263	0.022	146.59	1	0.000	0.769	–0.206	0.014	208.77	1	0.000	0.814
F2	0.275	0.011	586.24	1	0.000	1.316	0.251	0.014	339.28	1	0.000	1.285
Constant	–0.405	0.080	25.77	1	0.000	0.667	3.317	0.858	14.95	1	0.000	27.574
	Nagelkerke R2 = 0.153						Nagelkerke R2 = 0.061					

Notes: Dependent variable: a jobseeker was registered with the COLSAF office after one year: 0 = no; 1 = yes; male = 0, female = 1. Level of education: 0 = less than primary; 1 = primary; 2 = lower middle; 3 = higher middle; 4 = Bachelor's and Master's degrees; 5 = PhD and similar degree. Data for the Sec. 54 BAZ instrument were available only for 2016 and 2017. Regressions computed for the first registrations with a specific ALMP.

Source: Authors' computations.

Participants of the Sec. 52 ALMP instrument accounted for the lowest average levels of education and found it difficult to obtain an employment contract. The situation was different with participants in the Sec. 54 BAZ and Sec. 54 REPAS instruments. These instruments paid for various training courses. Many job seekers had already pre-arranged their jobs. The employers benefitted from state-sponsored training courses, which were tailored to specific needs of employers.

As for the specific ALMP (Table 3), education, age, regional development levels (Factor 1) and the situation in regional labour markets (Factor 2) were important predictors of repeated registration with the COLSAF office. Coefficients for the respective predictors have the same expected signs as in the general regression, except for GDP coefficient in Sec. 49, 50i+j and 54 (wherein they became insignificant) and age coefficient for Sec. 49. The highest *beta* values for the GDP growth rates were associated with Secs. 54 REPAS and 54 BAZ. These instruments operated in a period of an economic boom (2014 – 2016). The business cycle was important for ALMP performance.

Most ALMP instruments worked better for males, except for Secs. 49, 52, 54 REPAS, and 54 BAZ. As for the length of stay, instruments allowing repeated registration must be considered separately from one-off instruments. Participants in the Sec. 49 instrument (self-employment) were committed to staying 2 or 3 years in the instrument (737.9 days on average). Repeated registration with the same instrument was not allowed. Repeated registration was allowed and common for participants in Secs. 50i+j (regional employment), 52 (public works) and 52a (volunteerism). These last three instruments accounted for the highest rates of repeated registration.

We conclude that there is no indication that long-lasting ALMP support builds human capital. Repeated registration may result in the 'lock-in effect', i.e. decreasing the willingness to engage in active job searches (Vooren et al., 2018, p. 5).

5. Policy Effectiveness of the ALMP

Most ALMP studies concentrate on the effects of intervention in terms of employment and unemployment. The cost of intervention is reported by a minority of studies (McKenzie, 2017). There are some doubts as to the policy effectiveness of the ALMP. In their extensive meta-analysis of ALMP efficiency, Crepón and van den Berg (2016) argue that 'on the whole evaluations have not shown these programs to be particularly effective, and we do not really know if these programs are in fact an expense rather than a gain'.

Do Slovak ALMP generate good value for money? We computed rate of return for selected ALMP instruments (Table 4). Rates of return are based on actual ALMP spending. Comprehensive financial data were available for the period 2010 – 2017. Firstly, the ALMP costs per job seeker were computed. Secondly, the ALMP gross success rate was computed as the share of job seekers with new jobs in the total number of dropouts. The COLSAF provided nationwide data on job seekers who found employment in the total number of dropouts. We computed the adjusted success rate as the product of the gross average success rate and the share of total employed job seekers in the total number of dropouts. Thirdly, the profitability of ALMP was computed for each newly employed job seeker.

Kišš et al. (2017) computed the profitability of ALMP as the total sum of taxes and social and health insurance payments paid by the newly employed job seeker from minimum wages in 2015. We extended their approach to spending--related value-added tax (VAT).[6] We assumed that people on minimum wages spend all of their income on purchases of consumer goods and services. The rate of return was computed for the period 2010 – 2017. Tax collection was modelled on an employee with one child, who (a) collects child benefits, (b) deducts tax--free income and (c) spends all of his/her income on consumption.

T a b l e 4

ALMP Costs and Rate of Return (average for 2010 – 2017)

ALPM	Average actual costs per one jobseeker	Gross average success rate after 12 months, %	Adjusted average success rate after 12 months, %	Average actual costs per one employed jobseeker	Return rate in months
Sec. 49	3,367	85.62	54.63	6,162	28.3
Sec. 50i+j	3,040	42.70	27.46	11,194	50.5
Sec. 51	805	67.01	40.04	1,870	8.5
Sec. 52	175	29.87	19.44	932	4.2
Sec. 52a	1,052	44.64	29.52	3,622	16.1
Sec. 54	1,776	63.39	42.53	2,824	11.5
Sec. 54 REPAS	419	65.24	44.39	711	3.0

Notes: Sec. 54 – REPAS operated in 2014 – 2017. No financial data was available for Sec. 54 BAZ. Success rate is computed for 12-month period after exit from the ALMP. The adjusted success rate is competed as product of gross average success rate and share of total employed jobseekers in total number of dropouts. The respective shares of total employed jobseekers were 63.79% in 2010, 63.32% in 2011, 60.10% in 2012, 63.50% in 2013, 67.21% in 2014, 70.06% in 2015, 66.56% in 2016 and 67.16% in 2017.

Source: Authors' computations, based on the COLSAF data and annual reports.in period 2010 – 2017.

Summary evaluation of specific ALMP measures is provided in Table 5.

[6] We considered 20% VAT rate. The lower (10%) VAT rate was introduced for selected food products in 2016. Share of these items in the consumer basket of employees was only 3% (Hudcovský, 2017). We assume the lower VAT rate for selected food items had quite limited impact on ALMP profitability.

T a b l e 5

Summary of Policy by Specific ALMP

ALMP	Evaluation
Sec. 49 Promotion of self-employment, start-ups	Important in periods of economic crises and a lack of employment opportunities. The 2013 amendment of the 5/2014 Act redefined terms of support and impacted spending through the ALMP. The support period was extended from 2 to 3 years. Rather high costs per employed/self-employed job seeker (EUR 6,162) and a rather long rate of return (28.3 months).
Sec. 50i+j Subsidised jobs with local governments	Low employability of job seekers in the labour market. Important for finding jobs and generating employment records for members of the marginalised Romani communities. High costs per employed job seeker (EUR 11,194); a very long rate of return (50.5 months).
Sec. 51 Subsidised traineeships after graduation	Popular with the target group (graduates) and employers. A high success rate (share of job seekers who found a job). The success rate was determined by composition of the target group (secondary and tertiary graduates). Low efficiency for youths from the disadvantaged environments; low cost for one employed job seeker (EUR 1,870); a short rate of return (8.5 months).
Sec. 52 Public works	The ALMP targeted job seekers with the lowest level of human capital. A low success rate. This was only partially the ALMP measure. It resembled social benefits. The instrument was stigmatised in respect of being 'Romani ALMP'. Low costs per employed job seeker (EUR 932); a short rate of return (4.2 months); low per capita costs were determined by overall low costs of the ALMP.
Sec. 52a Public works based on voluntarism	A low success rate (in terms of creating new jobs and retaining existing ones). The ALMP has a social component. It frequently was used for employing and training handicapped people in the open labour market; low costs per employed job seeker (EUR 3,622); a medium rate of return (16.1 months).
Sec. 54 National projects, mostly on job subsidy	A high success rate was determined by composition of the target group. ALMP were implemented via national projects. The projects reacted flexibly to the actual labour market development. ALMP popular with employers. Medium costs per employed job seeker (EUR 2,824); a medium rate of return (11.5 months).
Sec. 54 REPAS Retraining and courses	A high success rate determined by composition of the target group and terms of support. Employment was provided under the condition of participating in the ALMP. The only ALMP aimed to support life-long learning and retraining; low costs per employed job seeker (EUR 711); a short rate of return (3.0 months).

Source: Authors' summary.

Conclusions

This research analysed the performance and economic efficiency of the ALMP in 2007 – 2017 in Slovakia. The research found that the ALMP were complementary tools for job generation. Market forces were key sources of job generation. The minority of job seekers (35.4%) had access to ALMP in Slovakia. Access to ALMP was problematic for some disadvantaged job seekers, e.g. members of marginalised Romani communities The employability of job seekers largely was determined by factors outside of the ALMP design, namely by demographic developments and the availability of job vacancies in local labour markets (Dahlke, 2016; Kawaguchi and Mori, 2017).

ALMP performance depended on specific target groups (graduates, young people, disadvantaged job seekers, long-term unemployed, people aged 50+ years, handicapped people). A comparison of participants and non-participants of the ALMP indicated that human capital was the most important determinant of repeated registration with the COLSAF office. Most ALMP participants were negatively selected for success in the labour market. The ALMP targeting people with higher educational levels achieved above-average performance.

Our research found limited evidence of the economic efficiency of the ALMP in Slovakia. Some ALMP became quite costly, considering their ability to generate employment (Sec. 50i+j, Sec. 52a). We, however, recognise that the same ALMP instruments may have had important social effects. The effects may have included fostering working habits and/or social and economic inclusion of specific social groups (MRC in particular). Future research may explore the social efficiency of ALMP in greater detail. Improvements in the labour market and the general lack of a labour force have had a limited impact on the employability of MRC members thus far. The MRC members are often unable to react to job offers. Furthermore, they are not ready to manage work tasks without external help. The current model of labour market services has a minimal impact on increasing the employment and employability of MRC members. The MRC members need an individualised ALMP service, which has not been provided by the public ALMP service thus far. The ALMP targeting job retention (not analysed in this paper) were expensive, albeit important for the economic and social inclusion of job seekers with health and mental disabilities.

Future ALMP will have to address challenges different from those in the 1990s and 2000s. The policies oriented towards labour supply would rise in importance. The future application of ALMP will be subject to (1) their economic and social efficiency, (2) demographic developments in the labour market, and (3) structural changes in the Slovak economy. Most ALMP expenditure targeted job generation or the retention of current employment in the 2000s and early 2010s. Demographic changes made many ALMP obsolete in the late 2010s. The mitigation of population ageing has to become the key driver of ALMP in the Slovak Republic in the future. Such mitigation may take many forms: (a) boosting employment rates of specific socio-demographic groups, (b) industry restructuring towards less labour-intensive industries, and (c) rising productivity rates via the massive introduction of automation, including robots and artificial intelligence.

Future ALMP would set new targets and develop new instruments for achieving these targets. As for employment rates, the ALMP will have to focus on older workers, females and young people from disadvantaged environments (including MRC members). Policies supporting labour supply may help to mitigate, but

may not fully offset, demographic pressures in advanced economies (Grigoli, Zsoka and Topalova, 2014). Demographic developments will impact upon both the volume and the quality of the disposable labour force.

Human capital-centred programmes are the best-performing ALMP in developed countries (Card, Kluve and Weber, 2010). Such ALMP have been significantly underfinanced in Slovakia. It is therefore important to implement programmes aimed at building human capital via life-long learning (LLL). Short--term training and re-training would remain important for solving the current demands of the Slovak labour market. The ALMP aiming at long-term support for human capital should increase in importance. There were no ALMP supporting LLL in the current structure of ALMP in Slovakia as of 2017. The fact is reflected in an extremely low share of the population (29 – 64 years old) participating in LLL (SK = 2.9%, EU-28 = 10.8%, Eurostat, 2018a). The onset of the Fourth Industrial Revolution underpins the importance of the support for LLL. Increased deployment of robots and software may have dramatic consequences in respect of the disappearance of jobs in many professions. The Slovak Republic has the highest share of jobs endangered by automation (33%) among the OECD member countries (Nedelkoska and Quintini, 2018).

Our paper has several important limitations. Firstly, available databases contained a high share of missing values. We were able to observe job seekers who failed to maintain their employment, but not job seekers who were able to do so. We therefore were able to compute the 'rate of failure' instead of the 'rate of success'. The cost-benefit analysis had to rely on approximate rates of success rather than direct evidence. Future research may solve the problem of missing data on employment in the COLSAF via merging the COLSAF database with the Social Security databases. Secondly, we also lacked direct data on first employment of Slovak graduates. We approximated data on new entrants to the labour market with data on activity rates of specific age groups. Future research again may benefit from direct data on first employment from Social Security.

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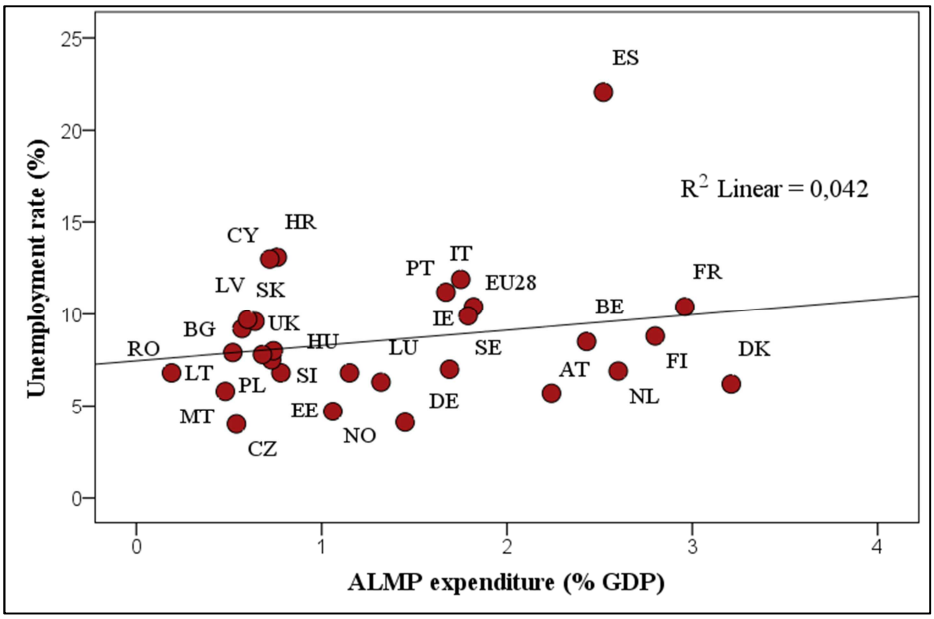
Appendix 1

Figure 1

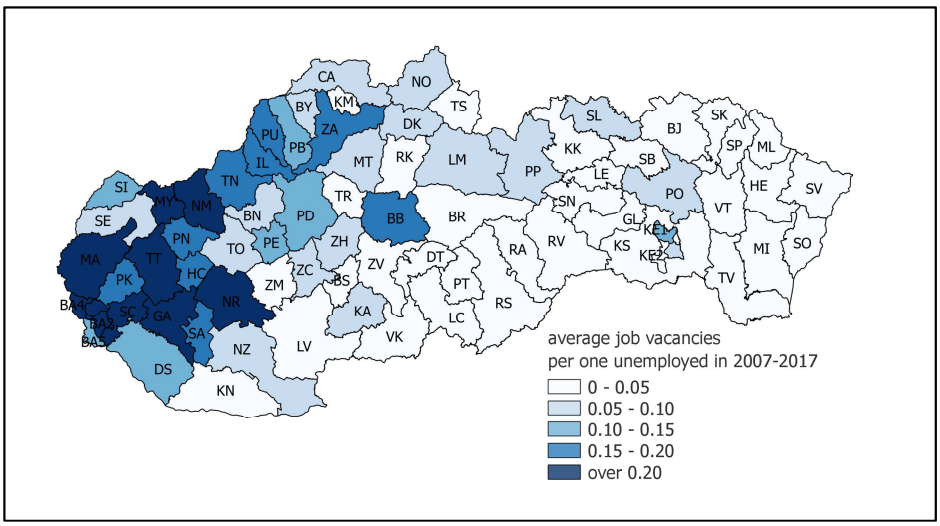
The ALMP Expenditure and Unemployment Rates in the EU Countries



Source: Eurostat (2018b) and authors' computations.

Figure 2

Average Job Vacancies per One Unemployed in 2007 – 2017



Source: COLSAF and authors' computations.

Appendix 2

Data Cleaning

Data cleaning included formal and logical check of data on registrations by jobseekers. Following registrations were removed:

- parallel registrations, when the same ALMP was registered multiple times in the same time period. The share of such repeated registrations in total registrations varied from 0.02% to 0.67% among specific ALMP instruments;
- registrations with 0 days spent in the ALMP instruments and/or the number of days different from those set by the 5/2004 Law. The share of such registrations in total registrations varied from 1.48% to 11.01% among specific ALMP instruments;
- repeated registrations, when the same job seeker was registered with the same ALMP instrument over time. The share of such registrations in total registrations varied from 0.59% (Sec. 49) to 35.50% (Sec. 50i+j). Sec. 52 allowed repeated registration for the same job seeker over time. Only the first registration was considered in the analysis;
- registrations, where the age of the job seeker was lower than 15 years and higher than 62 years, or different from that set in the 5/2004 Law. The share of such registrations in total registrations varied from 0% to 2.29% among specific ALMP instruments.

Table 6

Data Cleaning by ALMP

	Rregistrations before cleaning	**Registrations after cleaning**	**Removed (%)**
49	60,992	58,843	3.52
50i+j	37,067	23,381	36.92
51	103,363	84,984	17.78
52	662,344	173,387	73.82
52a	66,038	51,195	22.48
54	46,763	36,410	22.14
54 BAZ	57,655	52,532	8.89
54 REPAS	30,971	27,099	12.50

Note: Only the first registrations for Sec. 52. Job seekers with one-time registration only for other ALMP instruments.

Source: Authors' computations, based on the COLSAF data.

Appendix 3

Correlation and Factor Analysis; Multicollinearity and Residual Measures for Logistic Regressions

Table 7

Correlation Coefficients

	Unemployed per 1 job vacancy	Share of Roma population	Average wage	Firms per 1000 pop	Unemployment rate
Unemployed per 1 job vacancy	1.000	–0.164**	0.388**	0.390**	–0.352**
Share of Roma population	–0.164**	1.000	–0.269**	–0.220**	0.715**
Average wage	0.388**	–0.269**	1.000	0.601**	–0.464**
Firms per 1000 population	0.390**	–0.220**	0.601**	1.000	–0.349**
Unemployment rate	–0.352**	0.715**	–0.464**	–0.349**	1.000

Note: ** significant on the 0.000 level.

Source: Authors' computations, based on the COLSAF data.

Table 8

Factor Analysis, Total Variance Explained

Initial Eigenvalues			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
2.587	51.746	51.746	1.960	39.198	39.198
1.095	21.905	73.652	1.723	34.454	73.652
0.675	13.495	87.147			
0.402	8.049	95.196			
0.240	4.804	100.000			

Notes: Bartlett's Test of Sphericity: Approx. Chi-Square: 1461.149; Sig. = 0.000.

Source: Authors' computations, based on the COLSAF data.

Table 9

Factor Analysis: Rotated Component Matrix

Component	1	2
Firms per 1000 population	**0.833**	–0.124
Average wage	**0.799**	–0.252
Number of unemployed per 1 job vacancy	**0.713**	–0.110
Share of Roma in total population	–0.066	**0.942**
Unemployment rate	–0.338	**0.862**

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Source: Authors' computations, based on the COLSAF data.

T a b l e 10

The Multicollinearity and Residual Measures for Logistic Regressions

	Multi-collinearity	**Residuals**			
	Max VIF	Cook's distance	Leverage	Standardised residuals	DF Beta for constant
Expected value	< 10	< 1	0 < (k +1)/N < 1	Max 5% outside ±1.96	< 1
General regression					
Sec. 50i+j	1.361	max = 0.03365	near 8/23381 = 0.00034	1.2% outside ±1.96	max = 0.00465
Sec. 49	1.127	max = 0.07243	near 8/58843 = 0.00014	9.7% outside ±1.96.	max = 0.1650
Sec. 51	1.489	max = 0.02451	near 8/84984 = 0.00009	0.8% outside ±1.96.	max = 0.00150
Sec. 54	1.144	max = 0.01457	near 8/36410 = 0.00022	3.1% outside ±1.96	max = 0.00729
Sec. 54 REPAS	1.094	max = 0.01718	near 8/27099 = 0.00030	1.1% outside ±1.96	max = 0.04692
Sec. 54 BAZ	1.145	max = 0.0148	near 8/52532 = 0.00015	5.5% outside ±1.96	max = 0.05609
Sec. 52	1.116	max = 0.00369	near 8/173387 = 0.00005	5.6% outside ±1.96	max = 0.00057
Sec.52a	1.295	max = 0.02444	near 8/51195 = 0.00016	2.4% outside ±1.96	max = 0.00198

Source: Authors' computations, based on the COLSAF data.