

Emerging from crisis: Sweden's active labour market policy and vulnerable groups

The Economic and
Labour Relations Review
2020, Vol. 31(4) 543–564

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DOI: 10.1177/1035304620959704

journals.sagepub.com/home/elra



Marcela Kantová 

HaskoningDHV Czech Republic, Czech Republic

Markéta Arltová

University of Economics in Prague, Czech Republic

Abstract

Sweden has adopted an Active Labour Market Policy as a means of transitioning out of the economic crisis created by the 2020 COVID-19 pandemic. The approach is to a significant extent reminiscent of that adopted following the 2008 Global Financial Crisis (GFC). The article examines the effectiveness of active labour market policy in Sweden over the period 2007–2012. By analysing these earlier policy outcomes, the aim is to assess the success of active labour market policy more broadly. The hypothesis that greater labour market flexibility allows the labour market policy to be more efficient is evaluated. With a focus on the labour supply, possible reasons for the reduced efficiency of state interventions are outlined using regression models. Conclusions derived from the models point to the failure of earlier Swedish active labour market policy towards the vulnerable groups of the unemployed, unemployed women and men aged 15–19 years and the long-term unemployed.

JEL Codes: J08, J21, J64

Keywords

Active labour market policy, flexicurity, matching effectiveness, Sweden, unemployment

Corresponding author:

Marcela Kantová, HaskoningDHV Czech Republic, spol. s r.o., Sokolovská 100/94, 18600 Praha 8, Czech Republic.

Email: marcela.kantova@rhdhv.com

Introduction

Current labour market policies have been reflecting spread of Corona-virus outbreak. The Swedish government has adopted a COVID-19 crisis package with the aim of mitigating the financial impact of the outbreak, including on workers. A new law on short-term work has been enabling workers to temporarily cut down their working hours and wages. The Swedish crisis package for jobs includes both a temporary increase in unemployment insurance and in funding of Active Labour Market Programmes (Arbetsförmedlingen, 2020). This trend has been connected with ‘more ALMP’, an expansion and prolongation of existing active labour market policy (ALMP) measures. A pandemic plan for the Swedish Public Employment Service (PES) reflecting focus on both use of self-service tools and remote work has been enabling the continued performance of daily routines as much as possible. There has been a focus on ALMP as one of the flexicurity components designed to soften conditions for the unemployed so that they are able to participate in labour market policy (LMP) measures. The approach is reminiscent of that adopted following the 2008 global financial crisis (GFC).

It is therefore timely to assess Swedish ALMP. This article reports on research undertaken to evaluate the impact of flexicurity measures on the effectiveness of matching vacancies with job seekers in Sweden over the 2007–2012 period involving the onset of the financial crisis in 2008. The study does not find confirmation of the hypothesis that a more flexible labour market results in a more effective matching process and identifies the need for an alternative approach in the current crisis to the labour market integration of vulnerable groups.

The term flexicurity is a blend of ‘flexibility’ and ‘security’ which suggests that a flexible ALMP provides job security for both employers and workers, thus maintaining positive employer-employee relations. In terms of the current labour demand–supply relationship expressed as labour market tightness, effective matching can be quantified by the number of new job placements made. In other words, increased matching efficiency means more job placements compared to their expected numbers, given the actual labour market tightness. In this study, effectiveness was monitored in the context of labour market programme reform measures taken to eliminate the ever-repeated demands for unemployment benefits (UBs), enhancing an active job-search approach and the reform of PES.

The tool for measuring job-matching effectiveness – the matching indicator – was used to separate business cycle effects from those influencing the matching efficiency. The added value of the article is the evaluation of matching effectiveness applying regression models and comprehensive analysis of both labour market trends and ALMP measures. Labour demand and supply developments in recruitment duration and unemployment spells are examined with respect to the labour market tightness (i.e. vacancy-to-unemployment rate ratio). Another aim of the study was to evaluate the job-brokering methods in terms of their implementation and intended benefits.

The choice of the research period (2007–2012) makes it possible to investigate the effects of ALMP measures amid the sluggish economic environment. The year 2007 was critical due to reforms initiated and efforts undertaken to facilitate the matching process in the Swedish labour market. The 2008–2012 period was monitored to assess the reformed labour market flexibility against the background of severe economic downturn.

The study consists of nine sections. It begins with a discussion of the purpose of ALMP. Then, an ALMP typology is introduced with a focus on the classification of job-brokering services based on Brown and Koettl (2015) and adapted to Swedish conditions in line with Calmfors et al. (2001, 2002). The next two parts deal with the effects of Active Labour Market programmes and other flexicurity institutions, examining their mutual compatibility. After that, the main effectiveness criteria are covered. In the next two sections, ALMP measures taken in Sweden over the research period are treated, their effectiveness being statistically assessed. The last section reviews the conclusions of the article and discusses implications for transitioning from the COVID-19 crisis.

The mission of ALMP

An active Labour Market Programme (as an ingredient of labour market programmes) can be defined as a set of measures applied to the unemployed or people at high risk of unemployment to assist them to get a job, training placement or an appropriate insurance against risk of unemployment (see Björklund et al., 2006). According to Calmfors et al. (2002), ALMP's ultimate goal is *high employment and low unemployment*, facilitating labour *productivity* and *economic growth*. The stated *social-political goal* of an ALMP programme is to promote higher levels of *income*, well-being and anticipated welfare resulting from an increased employment probability, or (in the previous Swedish system) a higher anticipated income in the future for eligible programme participants.

The objective defined by the Swedish government is *to contribute to a well-functioning labour market* (Arbetsmarknadsstyrelsen, 2008: 8). For the given period, the following priorities were set by government directives: (1) *effective matching* of the unemployed and vacancies, (2) an optimal *adjustment of ALMP measures* to the labour market demand and (3) *shortening unemployment spells* of the most vulnerable groups of the unemployed. ALMP should also help fight against the moral hazard consisting in the unemployment insurance effects that might result in exaggerated demands and an increase in the number of UB claimants. The political basis of the ALMP scheme was established by the Alliance of Sweden formed by the liberal-conservative Moderate Party which won the 2006 elections. The coalition's priority was to increase employment, enhancing the efficiency of the publicly funded job-matching programme. A just social policy has always informed the development of the renowned Swedish welfare state.

Active labour market policies, as a component of the flexicurity concept, originated as part of the *European Employment Strategy* (EES) introduced by the 1992 Treaty of the European Union, aiming at creating new and better jobs. ALMP measures envisage effective targeting in order to enhance the social guarantee of transition to new jobs. Other European Union (EU) flexicurity approach components (institutions) are the employment protection legislation (EPL) and the net replacement rate (NRR); see, for example, Keune (2008).¹ The index of EPL (EPLI) expresses flexible and secure contractual arrangements, NRR representing a social security model facilitating mobility in the labour market. In the article, a more flexible labour market is demonstrated by changes in the above-mentioned institutions.

Flexicurity has been applied since the 1990s as a tool to combat globalisation-induced unemployment. The 2000 Nice European Council approved the European Social Agenda

with a priority to reach full employment and implement Active Labour Market programmes while improving job quality and security. The *flexicurity concept* (described in the section below) was a cornerstone of the EES – part of the Europe 2020 ambitious growth strategy – which covers EU employment guidelines and member states' National Reform Programmes. One of the EES target issues was employment, its rate being specified and life-cycle approach to skills innovation emphasised.

The notion of the flexicurity concept is attributed to the Dutch sociologist Hans Adriaansens who is supposed to have used the term for the first time in the mid-1990s (see Lehweß-Litzmann, 2012; Wilthagen and Tros, 2004). There are also some discussions about its possible Danish origin (cf. Viebrock and Clasen, 2009).

Sweden is a representative of the European Nordic social model. The roots of the welfare state can be traced back to the 1930s when organised labour staged protests as a major social force. In the interwar period, democracy came under threat from economic and ensuing political crisis, including Scandinavia with its short-lived coalitions and social unrest. Later agreements between political antagonists allowed for a system of centralised collective bargaining and improved labour relations. During the 1930s, unemployment insurance schemes were introduced. After World War II, the collective sphere expanded, high taxation enabling the state to redistribute revenues and provide lifelong care for all citizens. The Social Democratic party committed to a general social contract with the people which guaranteed the functioning of the welfare model. The Cold War aftermath brought about mass immigration as an accompanying phenomenon of globalisation. Looking for its own answers to new challenges, the Nordic social model seeks ways to reform the tax system to boost the labour supply and mobility in particular, flexicurity being one of the instruments. (For details, see the report *The Nordic model – challenged but capable of reform* published as part of 'Sustainable Nordic Welfare' programme launched by the Nordic Council of Ministers, 2014.)

The Nordic model has appropriate prerequisites for applying politics of the flexicurity concept (cf. Rogowski, 2008). It relies on high levels of employment with an emphasis on work skills enhancement, supporting both school education and lifelong learning. Countries applying the model are characterised by *the highest level of social protection expenditure, universal welfare provision, extensive financial intervention in the labour market's active policy measures and strong labour unions ensuring highly pressed wage structures* (Sapir et al., 2004: 375).

Typology of ALMP measures

Based on the Swedish typology of Calmfors et al. (2002), ALMP activities are generally divided into three categories: (1) job-brokering and counselling services (aimed at effective matching of job seekers with vacancies), (2) employment training (occupationally oriented courses having been transformed into programmes run by specialised centres²) and (3) subsidised employment (aimed at creating new jobs). The traditional form of the latter ALMP measure – public relief works – was replaced by the work experience scheme in the 1990s, recruitment incentives and start-up grants becoming alternative forms of subsidised employment. Resource jobs were introduced involving grants for temporary hiring of unemployed persons. Since then, work experience subsidies have

been paid to specific groups of the unemployed, such as youth, academics or immigrants. In the early noughties, Activity Guarantee and Job and Development Programmes were introduced for the long-term unemployed to engage in full-time activities, thus qualifying for an activity allowance.³

Table 1 classifies job-brokering activities as a type of ALMP measures supposed to increase the matching efficiency. The table is based on Brown and Koettl (2015) and is adjusted to Swedish conditions according to Calmfors et al. (2002). It breaks down job-brokering services by categories and intended effects. It is obvious from the table that most of the activities listed enhanced the supply side of the labour market.

ALMP and other flexicurity institutions' effects

ALMP

In line with areas particular policies are aimed at, Calmfors et al. (2002) distinguish between the ALMP's effects on (1) the *matching* process, (2) *labour market competition*, (3) *productivity*, (4) *crowding out* process, (5) *wage formation* and (6) *labour force sector distribution*. The present article deals with the effects on the matching procedure. Brown and Koettl (2015) confirm that the measures targeted at the unemployed with low employment probabilities and the long-term jobless at the beginning of their unemployment spell – along with monitoring and sanctioning – improve the job-matching efficiency.

Active Labour Market Programmes that are currently underway in Sweden highlight the activation principle of the measures adopted. It is a typical element of liberal policies which can be attributed to the Anglo-Saxon type of the European social model. This proactive principle was introduced by the so-called Activation Guarantee scheme in 2000 (cf. Björklund et al., 2006) and replaced by the 2007 Job and Development Guarantee labour market programme in order to purposefully interrupt the cycle of UB entitlements, promoting an active income-driven approach to job seeking (Forslund et al., 2004). The latter programme was extended to other groups of the unemployed such as the long-term ones, unemployed youth and immigrants. Upon its introduction, the number of ALMP programmes was reduced and conditions for UB claims restricted in order to lower the social costs. The measures implemented are designed to increase the flexibility of the labour market. Neumark and Troske (2011) conclude that the launch of ALMP schemes should be based on empirical evidence, their effects being studied in a systematic methodologically grounded fashion.

EPLI

A quantifiable characteristic of market flexibility (see below) is given by the EPLI, developed as an Organisation for Economic Co-operation and Development (OECD) indicator. EPLI reflects three aspects of employment protection: (1) individual dismissal of workers with regular contracts, (2) additional costs for collective dismissals and (3) regulation of temporary contracts. EPLI values range from 0 to 6 on a 0–6 point scale, higher ones indicating stricter employment protection (OECD, 2004b).

Table 1. Classification of job-brokering activities.

Target area	Category of activities (based on mechanism)	Instruments	Targeted workers	Intended effects
Labour supply	Improved matching process	Intensifying job-brokering towards applicants	Insiders/outsiders	Increased job-search efficiency; increase inflow into employment
Labour demand	Improved matching process	Job-brokering towards employers	Insiders/outsiders	Increased job-search efficiency; improve match quality; increase inflow into employment
Labour supply/demand	Improved matching process	Opening other agencies	Becoming outsiders	Improved matching
Labour supply	Improved matching process	Job coach services – internal coaches	Insiders/outsiders	Increased job-search efficiency; increase inflow into employment
Labour supply	Improved matching process	External job coach services – kompletterande aktörer	Insiders/outsiders	Increased job-search efficiency; increase inflow into employment
Labour supply/demand	Improved matching process	Using other communication channels (Internet, telephone)	Insiders/outsiders	Increased job-search efficiency; increase inflow into employment
Labour supply	Labour market competition effects	Employment training	Insiders/outsiders	Increase inflow into employment
Labour demand	Effects on productivity	Subsidised employment: work practice	Outsiders	Increase labour market attachment; increase inflow into employment

According to prevailing opinion, strict EPL reduces labour market mobility rates in two ways – through employers' hiring and firing decisions and by employees' mobility decisions (cf. reports of Nordic Council of Ministers, 2010, and OECD, 2007). As is believed, the stricter the EPL, the higher the cost of dismissing an employee (see, for example, De Beer and Schils, 2010). High dismissal costs lead employers to carefully reflect on the candidates they employ, thereby slowing down the recruitment process. An indirect EPL effect on the workforce mobility is a tendency to conclude temporary contracts. However, experts do not quite agree on whether EPL affects the overall level of unemployment (cf. Calmfors and Holmlund, 2000; Tvrdouň, 2008). Heyes (2011), for example, gives five examples of countries with higher EPLI which did not experience large decreases in unemployment rates during the 2008–2009 crisis.

NRR

The NRR is a fraction of actual or potential income provided by the social system to an unemployed person, defined as $NRR = (Y_{\text{net OW}}) / (Y_{\text{net IW}})$, that is, the ratio of net income received while out of work (OW) to that earned while in employment (IW) (cf. OECD, 2004a). NRR can indicate the influence of the welfare system on reservation wages (CESifo, 2005). The reservation wage is the lowest wage level that an unemployed person is willing to accept in a job offer (see Layard et al., 1991). If it falls during the unemployment spell, the search intensity as well as the probability of finding a new acceptable job is assumed to increase. Conversely, the search intensity shows a positive correlation with the difference between the reservation wage and income in unemployment (i.e. with the probability of finding an acceptable job), the replacement rate affecting both mechanisms (Nordic Council of Ministers, 2010).

Mainstream economists hold the opinion that generous benefits tend to reduce job seeking and labour market mobility and to decrease skill levels (Nordic Council of Ministers, 2010). According to Nickell (1997), the replacement rate and the maximum duration of UBs are expected to correlate negatively with unemployment-to-employment mobility. Sjöberg (2008) summarises traditional disincentive arguments, namely, that the unemployed tend to be more selective in accepting a new job (cf. also Nickell and Van Ours, 2000) and place an upwards pressure on wages and taxes. Apart from these arguments, the so-called duration effects (the longer the unemployment spell, the lower the skills and motivation) are being discussed in the literature.

The flexicurity concept and ALMP's compatibility with other institutions

In this article, a more flexible labour market is identified as being characterised by changes in the indicators of the three flexicurity institutions discussed above. To demonstrate flexicurity as a multidimensional concept, the Wiltshagen matrix was applied (cf. EMCO Working Group on Flexicurity, 2006, or Wiltshagen and Tros, 2004); see Table 2. The matrix takes into account labour market flexibility and job security (mostly – not necessarily – domains of employers and employees, respectively), distinguishing four forms of both the former and the latter which interact with each other.

Table 2. Examples of instrumental variables for flexicurity policy (Wilthagen matrix).

Flexibility	Security			
	Job security	Employment security	Income security	Combination security
External numerical flexibility	Employment protection legislation	Employment services/ ALMP	Unemployment compensation	
Internal numerical flexibility		Employment protection legislation		
Functional flexibility				
Labour cost/wage flexibility				

Source: EMCO Working Group on Flexicurity (2006: 5), authors' adaptation.
ALMP: Active Labour Market Policy.

Only the forms of flexibility are discussed in the article since it rests on the hypothesis of a more flexible labour market. External numerical flexibility (demonstrated by the EPLI) indicates the degree of difficulty experienced by employers in hiring and firing their staff. Internal numerical flexibility expresses an employer's ability to adjust to the changes in the company's volume of work. Functional flexibility represents an employer's organisational flexibility and employees' ability to respond to the changes in society. Wage flexibility consists in the possibility of adjusting labour costs to continuously changing conditions.

Some interactions of selected flexicurity and security components can be considered as trade-offs (Wilthagen and Tros, 2004). A higher level of job security, for instance, implies lower numerical flexibility and vice versa. The flexicurity concept, its practical use and policy implications vary between countries. To efficiently implement flexicurity measures, it is vital to consider the economic conditions. A given business cycle phase, in this case the recession, is relevant to flexicurity measures' application and effects. Compared to other countries, Sweden (2009) had a more favourable position due to its policy of increasing employment and strong public finances, a large surplus allowing for the use of automatic stabilisers.

Main effectiveness criteria

A higher matching efficiency means that more job placements are made with a given number of vacancies and job seekers (Calmfors et al., 2002). If a given number of job seekers requires a lower number of vacancies allowing for the expected number of matches to be made, there is an increased probability of filling a vacant job position. Bleakley and Fuhrer (1997) also argue that the number of new matches made with a given stock of vacancies and the unemployed is crucial. As a consequence of higher matching effectiveness, job seekers find employment faster, being addressed by employers without delay, unemployment spells and the duration of recruitment⁴ getting shorter. Periods of unemployment and recruitment vary in length with the changing labour

market tightness over the business cycle. A tight labour market signals that employers experience more difficulties in finding labour force, a loose market, on the contrary, fosters the preconditions for a shorter recruitment process, while making it more difficult to maintain short unemployment spells. As labour demand increases, competition among employers intensifies, recruitment becomes longer and the unemployment spell shorter. (A detailed description of labour market operations is presented in annual reports of the Swedish PES.⁵)

In the following paragraphs, Swedish yearly labour market trends between 2007 and 2012 are tackled while taking into account the development of unemployment spell and recruitment duration with respect to the tightness of the labour market.

In 2007, labour force demand was high, the number of newly announced vacancies was rising, its growth, however, being slower than in 2006. Unemployment continued to decline. This trend was accompanied by (1) a prolonged recruitment duration (shorter though, compared to the same labour market tightness in previous years) and (2) a shorter unemployment spell. As it follows from Arbetsmarknadsstyrelsen (2008), the median value of the unemployment spell increased (to an average of 87 days). This must have been caused by a lower inflow of the newly unemployed into unemployment as there was a higher transition frequency from unemployment to employment. Those with a relatively long unemployment spell remained among the unemployed which may have indicated a structural type of unemployment. Increasing tightness was accompanied by a higher vacancy rate (VR) and a shortage of job seekers. However, VR was lower compared to periods with the same labour market tightness in the past which suggests a higher matching effectiveness.

In 2008, labour demand began to decline, unemployment increasing (cf. Arbetsförmedlingen, 2009). The number of newly announced vacancies fell, the planned dismissals having risen most dramatically since the 1990s' recession. These developments were accompanied by (1) a shorter duration of recruitment (longer, however, in comparison to the labour market tightness in the past) and (2) the lengthening of the unemployment spell, which corresponded to a lower frequency of unemployment-to-employment transition. The median of the unemployment spell decreased, the inflow of the unemployed into unemployment having grown. The 2008 matching indicator suggested a lower matching efficiency, statistically significant only at the end of the year. The indicator trends over the previous decade are shown in Figure 1.

In 2009, labour force demand declined, the continuing rise in unemployment slowing towards the end of the year. The economic cycle having bottomed out, first signs of recovery appeared. The number of newly announced vacancies stopped declining. A rise in the unemployment, however, was experienced as a result of longer spells of joblessness, which was a signal of structural unemployment (like in the 1990s). The largest decline in Sweden's GNP (gross national product) since World War II occurred (Arbetsförmedlingen, 2010). The trend was accompanied by (1) a shortened recruitment duration and (2) a lengthened unemployment spell. The number of applicants registered with the PES who found a job was growing, but the increase did not compensate for the inflow of the newly registered candidates. Moreover, the 2009 matching indicator showed a lower matching effectiveness (Arbetsförmedlingen, 2010), that is, fewer vacancies were filled compared to the estimate.

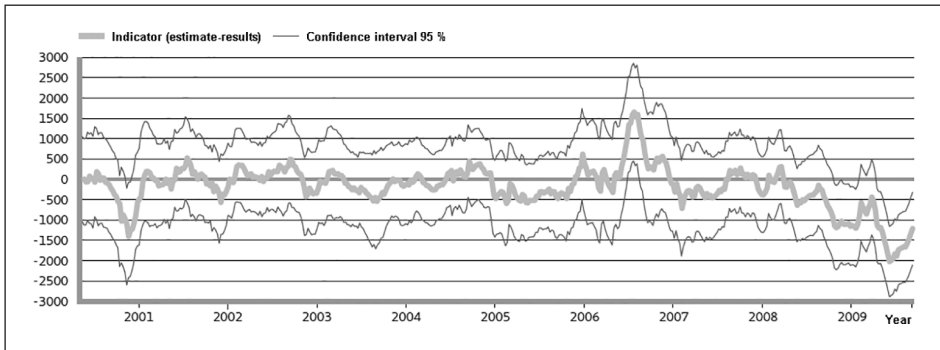


Figure 1. Matching indicator for Sweden in 2001–2009.

Source: Reproduced with permission from the publisher, Arbetsförmedlingen (2010: 13); authors' adaptation.

In 2010, the Swedish economy and the labour market *started to recover*. The decline in unemployment was associated with increased labour supply due to a rise in immigration of working-age people and the consequences of the sickness insurance reform (Arbetsförmedlingen, 2011a). Labour force demand having increased, the numbers of announced dismissals and registered PES applicants dropped. The PES report (cf. Arbetsförmedlingen, 2011b) discusses a lower matching efficiency in the first half of the year, effectiveness statistics for the full year 2010 and half of the following year, however, corresponding to the actual stage of the business cycle (Arbetsförmedlingen, 2012b).

In the first half of 2011, there was also a strong labour market with new vacancies and an increase in the employment rates. Nonetheless, the market *weakened* at the end of the year as a result of the Eurozone crisis. Employment growth stopped, fewer jobs having been created (cf. Arbetsförmedlingen, 2012a). Both towards the end of 2011 and in 2012, the matching indicator showed deviations from the expected values corresponding to a given phase of the economic cycle, that is, to the real labour market tightness (Arbetsförmedlingen, 2014).

In 2012, surprisingly, the labour market *trend was favourable*, unlike the weakened growth in the Eurozone. The number of people who found a job was slightly higher than in the previous year, the number of new vacancies being relatively large, smaller though compared with 2011. The situation worsened in the last quarter when temporary contracts were restricted (Arbetsförmedlingen, 2013). Total sectoral employment, however, increased. The unemployment rate was gradually rising, the number of PES registered people being higher than in the previous year but lower than in 2010. The matching conditions deteriorated. Overall, labour force demand declined, the number of people searching for a job increasing.

Swedish national Active Labour Market Programmes in 2007–2012

A particular test of ALMP effectiveness occurred in Sweden during the global crisis (especially in 2008–2009 and 2011–2012). The government took reform measures to improve

the job intermediation services and matching efficiency. Additional measures were also applied, responding to labour market weakness in the then ongoing economic crisis. The introduction of the Job and Development Guarantee programme in 2007 made the year critical in terms of activation and motivation measures. In the following years, cost-saving provisions⁶ and measures enabling a broader range of jobless people to reap UBs were adopted (cf. Sibbmark, 2008, 2009, 2010) thus alleviating the economic problems. In 2009, for example, a requirement for certain time worked as a precondition for membership in the unemployment insurance agency⁷ was cancelled. During the recession, job-brokering services were also developed by mobilising PES human resources, intensifying its operation, including opening and running new job centres in the regions most affected by unemployment and allocating substantial funds for work experience schemes. PES intensified the delivery of job coaching services, employing both internal coaches and staff of *kompletterande aktörer* (complementary actors).⁸ Job coaching services and work experience schemes became the cornerstones of the labour market programme.

Such a focus on job-brokering and matching was not only typical for the period 2007–2012 marked by economic downturn. The issue had been given due attention even before – within the reform programme launched in order to, among other things, moderate the labour market effects of new social realities in Europe (cf., for example, European Commission, 2006). The reform having been instituted by the Swedish government in 2006, the PES has been operating in a more organised and efficient mode since 2008 (Arbetsförmedlingen, 2009). To make job mediation services more effective for employers, the PES concluded framework agreements on active job-brokering services to supply employers with competent candidates. As for the job seekers themselves, PES provided them with the services of professional job brokers, runs an online self-service portal and offered other applicant-friendly tools such as *Jobbnätet* (a job-networking programme), thus affecting job seekers' behaviour and shortening the unemployment spell.

In 2010, sickness insurance and establishment reforms were initiated aiming at the inclusion of the long-term sick and new immigrants into the labour market, affecting ALMP. A focus was also placed on *work experience*, practical skills development and *coaching* including the provision of *kompletterande aktörer*. This initiative was in line with the argument of Sianesi (2008) that a higher probability of drawing UBs while under a work experience scheme is connected with lower employment rates.

Better functioning of the labour market made it possible to allocate the funds to the most vulnerable people at the expense of anti-crisis measures. Effective matching along with *job brokerage improvements* remained a high ALMP priority. According to Arbetsförmedlingen (2011a), agreements with employers on active job-brokering services contributed to shorter unemployment spells. The PES started to use *social media*, namely, Facebook and YouTube, as an information channel, focusing on announced vacancy searches. To facilitate the matching process, job brokers were trained in the knowledge of the most demanded jobs and skills, self-service being still promoted. The development strategy aiming at providing customers throughout the whole country with the same services was consistently pursued.

In 2011, PES established contracts with important employers. Counselling services and new vacant positions started to be offered via telephone, which helped reduce recruitment and unemployment spell duration. Since that year, PES has been waging a permanent information campaign.

Table 3. Seasonality test and unit root test of the seasonal adjusted time series.

Variable	Seasonality test	ADF test				Type of integration
		y_t		Δy_t		
		t_{ADF}	Prob.	t_{ADF}	Prob.	
OIE	65.853	-1.6571	0.4481	-9.8169	0.0000	I(1)
VR	178.136	-1.3584	0.5978	-8.8701	0.0000	I(1)
RUE_M_u20	21.083	-2.6896	0.2441	-12.8470	0.0000	I(1)
RUE_W_u20	16.583	-2.3282	0.1662	-7.0064	0.0000	I(1)
RUE_MW_o55	7.035	-0.8245	0.8057	-12.9227	0.0000	I(1)
R_MW_o55	152.408	-1.8043	0.6920	-14.7348	0.0001	I(1)
RUE_o6M	80.634	-2.6657	0.0852	-4.7614	0.0000	I(1)

Source: Own calculations.

OIE: outflow into employment; VR: vacancy rate; RUE_M_u20: percentage ratio of unemployed 15- to 19-year-old men to labour force; RUE_W_u20: percentage ratio of unemployed 15- to 19-year-old women to labour force; RUE_MW_o55: percentage ratio of unemployed men and women aged over 55 to labour force; R_MW_o55: percentage ratio of men and women aged over 55 to labour force; RUE_o6M: percentage ratio of those unemployed for over 6 months; ADF: augmented Dickey–Fuller (1979).

In 2012, the previous 5 years of PES reform activities resulted in implementing *novel approaches* to pro-active ALMP agenda. Encompassing cooperation with employers materialised in contracts with businesses and the national job-matching project conducted across the country; it aimed at preventing long-term unemployment with an emphasis on an individual, case-by-case approach. The budget and the number of job brokers having been increased, more interviews with the candidates and contacts with employers could be made. The establishment of a special PES division for national clients facilitated this process (cf. Arbetsförmedlingen, 2013).

Statistical evidence of effectiveness

Trends in flexicurity indicators in 2007–2012

This section provides evidence of the increased flexibility of the Swedish labour market between 2007 and 2012. Having remained constant for several years, the overall EPLI value decreased in 2008 as a consequence of the loosened temporary contract regulations. Table 3 indicates a sharp decline by 0.625 points in the value of temporary EPLI in 2008, which stayed the same in 2009–2012, suggesting a trend towards less strict regulations. In general, weaker EPL implies a higher market mobility, that is, greater numerical flexibility.

The NRRs fell by 5 to 9 percentage points both for households with and without children following a trend that began in the early 2000s.⁹ NRRs for households without children were the same as for single persons and one-earner married couples, while a lone parent's NRR in a household with two children was higher than that of a one-earner married couple with two children. According to mainstream economic theory, lower UBs tend to increase labour market flexibility.

During the monitored period, the Swedish government took reform steps to improve job-broking services aiming to increase the matching efficiency (see detailed analysis in the section above). The same effect of increasing labour market flexibility should have been achieved by adopting intensified job brokerage measures. Nevertheless, the intensified job-broking did not seem to contribute to an increase in the matching effectiveness during greater part of the monitored period.

Reasons for reduced matching efficiency

To explore the reasons for a decline in the matching efficiency, trends in labour market supply and demand were examined using regression models. Trends in demand were reflected in the development of the VR and the outflow into employment, defined as the number of new job matches. Vulnerable groups of the unemployed, namely, those of 15- to 19-year-old men and women, respectively, as well as unemployed 55- to 65-year-olds were adopted as the key indicators of trends in labour supply.

Demand and supply developments were empirically examined by analysing the relationships between their time series. It was explored how the time series of new job matches (i.e. outflows into employment) and VRs depend on the percentage ratio of

- Unemployed 15- to 19-year-old men to the labour force (RUE_M_u20)
- Unemployed 15- to 19-year-old women to the labour force (RUE_W_u20)
- Unemployed 55- to 64-year-old men and women to the labour force (RUE_MW_o55)
- All 55- to 64-year-olds to the labour force (R_MW_o55)
- Those unemployed for over 6 months to all openly unemployed persons (RUE_o6M).

Monthly time series from January 2007 to December 2012 having been available, research data were drawn from the national government agencies – the Swedish PES (Arbetsförmedlingen) and Statistics Sweden.

Prior to such a relationship analysis, it is necessary to test whether the time series contain a seasonal component. If so, they are to be seasonally adjusted using the X-13ARIMA-SEATS method (cf. Census Bureau, 2017). The prerequisite for statistically meaningful comparisons between time series is that they are of the same integration type, that is, both are either stationary $I(0)$ or non-stationary $I(1)$ (Engle and Granger, 1987, or Granger and Newbold, 1974). Therefore, in the second step, unit root tests were performed.

Seasonal adjustment was performed for all the time series since the F-test identified a statistically significant seasonal component in each of them (cf. McDonald-Johnson et al., 2006). Table 3 presents the augmented Dickey–Fuller (ADF) and seasonality test outcomes, the former test proving that the non-stationarity ($I(1)$) hypothesis was not rejected at the 5% significance level for any time series.

Spurious regression relationships having been excluded, cointegration test (Engle and Granger, 1987) was conducted. As Table 4 indicates, at the 5% significance level, spurious relationships were rejected only between the time series of new job matches

Table 4. Test of cointegration.

	OIE			VR		
	t_{ADF}	Prob.	I(d)	t_{ADF}	Prob.	I(d)
RUE_M_u20	-2.6872	0.0079	I(0)	-1.9166	0.0533	I(1)
RUE_W_u20	-2.9761	0.0034	I(0)	-1.6379	0.0954	I(1)
RUE_MW_o55	-1.6321	0.0965	I(1)	-1.5223	0.1192	I(1)
R_MW_o55	-1.5207	0.1194	I(1)	-1.6200	0.0988	I(1)
RUE_o6M	-3.5798	0.0005	I(0)	-1.3555	0.1611	I(1)

Source: Own calculations.

OIE: outflow into employment; VR: vacancy rate; RUE_M_u20: percentage ratio of unemployed 15- to 19-year-old men to labour force; RUE_W_u20: percentage ratio of unemployed 15- to 19-year-old women to labour force; RUE_MW_o55: percentage ratio of unemployed men and women aged over 55 to labour force; R_MW_o55: percentage ratio of men and women aged over 55 to labour force; RUE_o6M: percentage ratio of those unemployed for over 6 months.

and the ratios of unemployed teenage men and women to the workforce, and of the long-term unemployed to all openly unemployed people. The other time series were not analysed since in their case (as well as in all VR relations) only a spurious relationship occurred.

It follows from the above that the relationship is only possible between new matches and time series of the ratios of unemployed 15- to 19-year-old men and women to the labour force (see Figures 2 and 3, respectively), and of the proportion of the 6-months plus unemployed to all openly unemployed persons (Figure 4). In order to present the time series in one chart, their values were normalised, that is, adjusted to the same mean and variance.

Table 5 presents autoregressive-distributed lag (ADL) regression models estimated (see Hendry et al., 1984) and diagnostic test outcomes achieved. To eliminate jumps in time series, a dummy variable D1 (D1=1 for 12/2007, 4/2008 and 8/2012, otherwise D1=0) was added to the model.

Expressing the long-term relationship between the analysed time series, error correction models (cf. Engle and Granger, 1987) were recalculated from ADL models via the following equation

$$\widehat{\Delta OIE}_t \tau = -0.387 \Delta OIE_{t-1} + 125.446 \Delta RUE_M_u20_{t-1} - 5976.35 D1_t - 0.097 (OIE_{t-2} - 1294.361 RUE_M_u20_{t-2}),$$

$$\widehat{\Delta OIE}_t \tau = -0.434 \Delta OIE_{t-1} + 177.015 \Delta RUE_W_u20_{t-2} - 6254.61 D1_t - 0.123 (OIE_{t-2} - 1434.973 RUE_W_u20_{t-2})$$

$$\widehat{\Delta OIE}_t \tau = -0.509 \Delta OIE_{t-1} + 430.889 \Delta RUE_o6M_{t-2} - 6212.85 D1_t - 0.260 (OIE_{t-2} - 1655.859 RUE_o6M_{t-2})$$

That is,

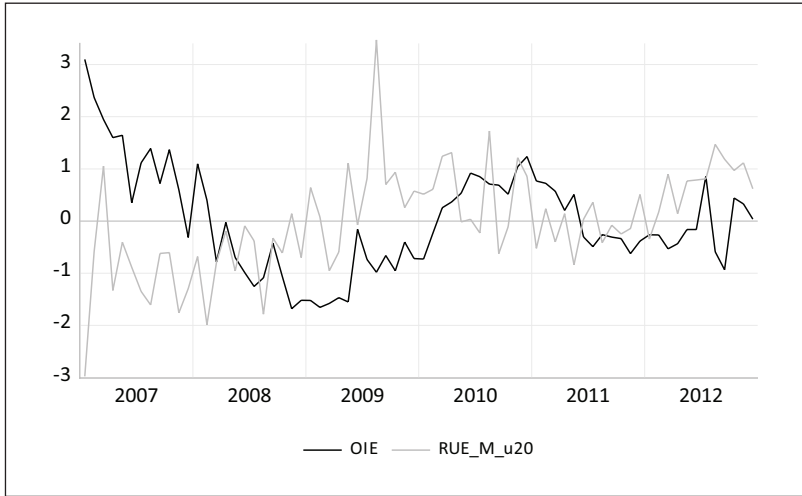


Figure 2. Relation of new matches to ratios of unemployed 15- to 19-year-old men to the labour force.

Source: Authors' calculations.

OIE: outflow into employment; RUE_M_u20: percentage ratio of unemployed 15- to 19-year-old men to labour force.

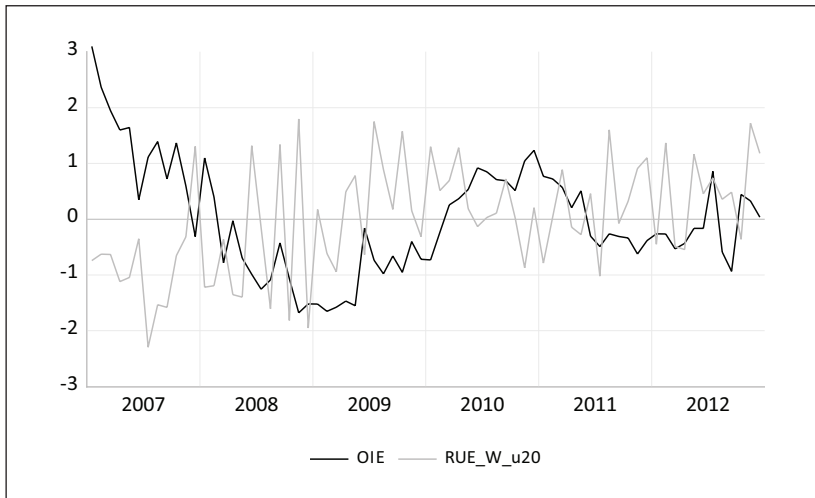


Figure 3. Relation of new matches to ratios of unemployed 15- to 19-year-old women to the labour force.

Source: Authors' calculations.

OIE: outflow into employment; RUE_W_u20: percentage ratio of unemployed 15- to 19-year-old women to labour force.

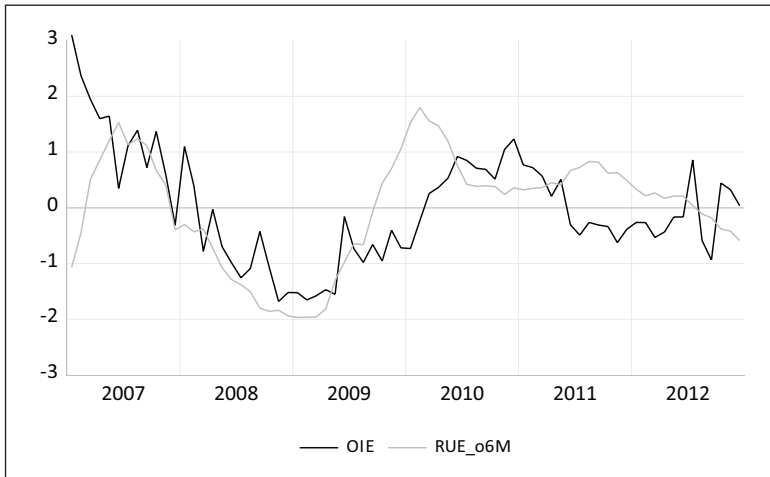


Figure 4. Relation of new matches to proportion of the 6-months plus unemployed to all openly unemployed persons.
 OIE: outflow into employment; RUE_o6M: percentage ratio of those unemployed for over 6 months.

Table 5. ADL models.

Dependent Variable	Variable	Coefficient	Standard error	t-stat.	Probability	Diagnostics tests	Stat.	Prob.
OIE	OIE(-1)	0.613	0.104	5.871	0.000	Breusch–Godfrey Test ARCH Test Jarque–Bera Test R ²	2.897	0.063
	OIE(-2)	0.290	0.099	2.932	0.005			
	RUE_M_u20	125.446	49.209	2.549	0.013			
OIE	D1*	-5976.35	1637.53	-3.650	0.001	Breusch–Godfrey Test ARCH Test Jarque–Bera Test R ²	0.739	0.271
	OIE(-1)	0.566	0.104	5.447	0.000			
	OIE(-2)	0.310	0.096	3.240	0.002			
OIE	RUE_W_u20(-2)	177.015	53.321	3.320	0.002	Breusch–Godfrey Test ARCH Test Jarque–Bera Test R ²	2.194	0.120
	D1*	-6254.61	1558.24	-4.014	0.000			
	OIE(-1)	0.491	0.106	4.636	0.000			
	OIE(-2)	0.249	0.094	2.661	0.010			
OIE	RUE_o6M(-2)	430.89	106.13	4.060	0.000	Breusch–Godfrey Test ARCH Test Jarque–Bera Test R ²	0.239	0.626
	D1*	-6212.85	1502.94	-4.134	0.000			
						0.771		

Source: Own calculations.

OIE: outflow into employment; RUE_M_u20: percentage ratio of unemployed 15- to 19-year-old men to labour force; RUE_W_u20: percentage ratio of unemployed 15- to 19-year-old women to labour force; RUE_o6M: percentage ratio of those unemployed for over 6 months. *Dummy variable D1: D1 = 1 for 12/2007, 4/2008 and 8/2012, otherwise D1 = 0; ADL: autoregressive-distributed lag.

$$\widehat{OIE}_t = 1294.361RUE_M_u20_t,$$

$$\widehat{OIE}_t = 1434.973RUE_W_u20_t,$$

$$\widehat{OIE}\tau = 1655.859RUE_o6M.$$

That is,

where OIE is outflow into employment.

In 2007–2012, the creation of new job matches in Sweden was directly proportional to the ratios of 15- to 19-year-old unemployed men and women to the labour force, respectively; the former proportional dependence being relatively weak, the latter one slightly stronger. This means that the number of newly occupied positions grew with an increase in the ratio of unemployed teenagers to the workforce. It is also obvious that the new matches directly depended on the ratio of those who are unemployed for more than 6 months to all the unemployed, the number of new jobs rising with an increase in the above ratio. It can be thus concluded that new jobs were taken by different groups than the long-term and teenage unemployed, the matchmaking being the least effective for the latter ones.

Conclusion

The aim of the article was to assess the impact of flexicurity measures on the effectiveness of the job-matching process in Sweden from 2007 to 2012, that is, the period marked by the global economic downturn. The hypothesis that increasing labour market flexibility would make LMP more efficient was tested.

First, the purpose and typology of active labour market policies were outlined, with a focus on job-brokering measures considered. To verify the hypothesis, effects of ALMPs and other flexicurity institutions were analysed, their compliance with the flexicurity concept being assessed. The main effectiveness criteria, namely, unemployment spells and recruitment duration related to labour market tightness, were applied to ALMP measures adopted in Sweden over the period 2007–2012. ALMP effectiveness was examined using regression models.

Regression analysis results suggest rising unemployment among vulnerable groups, that is, teenagers and the long-term unemployed. These groups may have contributed to reducing the job-matching efficiency. Pro-active labour market policies seem to be the least effective towards these cohorts of the unemployed. Due to an increase in successful matches, however, the vacancies could have been filled by job seekers from other groups. Despite the unfavourable economic conditions in this period, the LMP seems to be more effective towards these groups of unemployed.

The article favours the conclusion that greater labour market flexibility does not necessarily anticipate a more efficient matching process (cf., for example, Nordic Council of Ministers, 2010). This is in line with the European Commission's (2012) statement on *growing signs of worsening labour market matching across Europe* (p. 4). The matching indicator showed lower effectiveness during weak economic years, fewer job matches than expected being made in 2008 and 2009. The number of matches for 2010 corresponded to economic conditions but the situation got worse again, efficiency declining in late 2011 and 2012.

The results could have been better if ALMP's funding, timing and design as well as the implementation of flexicurity measures were better adapted to the economic circumstances. Considering that the job-search assistance and monitoring are not time-consuming, Forslund et al. (2011) intuitively suggest that these ALMPs should be more widely promoted when the economy is booming, which does not seem to be currently the case in Sweden. Lower employment rates are associated with a higher probability of UB reception under work experience schemes, which was at the core of Swedish LMP in times of crisis. It is worth discussing whether the measures improving the matching process were aimed at unemployed persons with low employability and the long-term unemployed at the beginning of the unemployment spell. One can also speculate about loosening the EPL in Sweden (2008), which is contrary to the opinion that countries with tighter EPL better cope with the effects of the recession.

For Sweden in the period 2007–2012, the results of our study indicate the need for further empirical research into ALMP effects, focusing on the demand side of the labour market in particular. It poses the question of whether it is appropriate or adequate to seek to stabilise the labour market by approaches designed to enhance its flexibility.

Experiences from both the GFC and COVID-19 crises periods show a stronger focus laid on ALMP while adjusting LMP conditions in the Swedish labour market so that a broader range of unemployed could take an advantage of participating in unemployment insurance or ALMP programmes. At the same time, they point to the necessity of assessing the effectiveness of individual ALMP programmes for vulnerable groups with respect to a given stage of business cycle. This re-thinking is necessary, given our evidence that matching effectiveness among vulnerable groups did not increase in the GFC (post)crisis period.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship and/or publication of this article: This paper was subsidised by the funds of institutional support of a Long-term Conceptual Advancement of Science and Research No. IP400040 at the Faculty of Informatics and Statistics, University of Economics, Prague, Czech Republic.

ORCID iD

Marcela Kantová  <https://orcid.org/0000-0002-9164-9600>

Notes

1. The fourth flexicurity component of the European Union (EU) agenda – lifelong learning – is not dealt with in the present article since secondary sources on the relationship between ‘adult education’ and unemployment-to-employment mobility are not sufficient.
2. For example, the Information Technology Training Programme launched by Swedish computer/activity centres in Sweden.

3. An allowance is equivalent to an unemployment benefit while participating in a programme. Its aim is to prove job-search activities and break the cycle of retraining courses whose completion was a precondition for unemployment benefit eligibility.
4. The term ‘duration of recruitment’ refers to the number of days it takes to recruit a new employee, that is, how much time is needed to fill a vacancy.
5. The reports are downloadable from the Swedish Public Employment Service’s website.
6. In 2008, a number of qualifying days was extended from 5 to 7 days.
7. Also the precondition for entitlement to unemployment benefits.
8. Complementary actors represent private providers cooperating with Public Employment Service (PES) while offering applicants additional services.
9. According to Organisation for Economic Co-operation and Development (OECD, 2007) data, net replacement rates (NRRs) for all types of households were decreasing since the early 2000s with a significant decline ranging from 8 to 13 p.p. in 2006.

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Author biographies

Marcela Kantová is a graduate of the University of Economics, Prague, completing PhD studies in the Department of Economic and Social Policy. She has undertaken research and published in the area of the application of the flexicurity concept in Sweden and the Czech Republic. Currently, she is employed with HaskoningDHV Czech Republic where she has worked as an expert in social policy research and in social services.

Markéta Arltová graduated from the University of Economics, Prague, majoring in economic statistics. After graduating, she worked 27 years at the Department of Statistics and Probability. She currently works as an associate professor in the Department of Public Finance at the University of Economics, Prague. She focuses on analyses of time series and econometrics.