

University of Groningen

Towards inclusive and resilient regional labour markets: challenges for research and policy
van Dijk, Jouke; Edzes, Arend

Published in:
Investigaciones Regionales

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2016

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

van Dijk, J., & Edzes, A. (2016). Towards inclusive and resilient regional labour markets: challenges for research and policy. *Investigaciones Regionales*, 36, 169-190.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Towards inclusive and resilient regional labour markets: challenges for research and policy

Jouke van Dijk^{*,**}, Arjen Edzes^{*}

ABSTRACT: Unemployment and inactivity remain among the largest social and economic problems in society, especially in the context of structural developments, such as sectorial shifts in employment structures and globalization, coupled with robotization and automation, that question future job growth. These employment-related issues vary by region, and between urban and rural areas, due to differences in economic structures and location factors, and in the quantity and quality of the labour force which is to an extent related to aging and processes of spatial sorting. Science and policy, particularly where related to economics and geography, are developing alongside two perspectives that dominate labour market research: the economic investment perspective and the social compensation and activation perspective. This paper discusses specific challenges facing research and policy and offers three recommendations that aim to stimulate inclusiveness in regional labour markets: the necessity of a place-based approach, the need for fundamental changes concerning the concept of labour and enhancing effective regional governance.

JEL Classification: R23; R12; J21; J24; J33.

Keywords: regional labour markets; regional economics; unemployment; social inclusion; labour market policy.

RESUMEN: Una de las principales preocupaciones socio-económicas en la actualidad continua siendo el desempleo y la inactividad laboral. Especialmente en el contexto de cambios estructurales, como los que se derivan de la globalización o de la automatización y robotización de la producción, que pueden poner en tela de juicio la evolución futura del empleo. Sin embargo, existen diferencias a nivel regional, así como entre áreas urbanas y rurales, debido a las diferencias en cuanto a estructura económica y otros factores de localización, así como en la cantidad y calidad de la mano de obra debido a componentes demográficos y otros procesos de distribución espacial. Tanto la Ciencia como la Política, particularmente en lo que concierne a la Economía y la Geografía, se mueve en la actualidad en torno

* Department of Economic Geography, Faculty of Spatial Sciences, Urban and Regional Studies Institute (URSI), University of Groningen, P.O. Box 800, 9700 AV Groningen, The Netherlands. Email: jouke.van.dijk@rug.nl; a.j.e.edzes@rug.nl.

** Chair Board Waddenacademie, Ruiterskwartier 121a, NL-8911 BS Leeuwarden, the Netherlands.

a dos corrientes que dominan la investigación sobre los mercados laborales. Por un lado, la que analiza la inversión económica. Y, por el otro, la que lo hace desde el punto de vista de la compensación social. Este trabajo discute aspectos concretos sobre estas corrientes y concluye resaltando tres necesidades que pretenden estimular la inclusividad en los mercados regionales de trabajo: procedimientos basados en la localización; cambios en el concepto de mano de obra; y, finalmente, una política regional efectiva.

Clasificación JEL: R23; R12; J21; J24; J33.

Palabras clave: mercado de trabajo; economía regional; desempleo; inclusión social; políticas de empleo.

1. Setting the scene

In the summer of 1930, at the start of the Great Depression, John Maynard Keynes gave a speech in Madrid entitled «Economic Possibilities for our Grandchildren». He stated that, over time, humankind was solving its economic problems thanks to the process of capital accumulation. He predicted that the standard of living in progressive countries would, in one hundred years, be between four and eight times higher than it was in 1930, and that the standard working week would be fifteen hours. An important societal problem foreseen in Keynes' prediction would be how to spend leisure time (Keynes, 1963).

With hindsight, one cannot deny the fundamental and dramatic changes that modern labour markets have faced over previous decades. In that sense, Keynes was right although maybe the reasons are different. Under the influence of globalization, technological change and information and communication technology, the employment and occupational structure is changing fundamentally. Labour relations are in transition in the sense that lifetime employment is increasingly being replaced by flexible contracts and working hours, employability and entrepreneurship and self-employment. Ageing and demographic transitions mean that most western countries are facing serious challenges in enhancing labour productivity and labour participation. Last but not least, people are on the move, in search of a better life or work opportunities. However, in contrast to Keynes' predictions, current labour market problems are not framed as a luxury of how to spend our leisure time, but rather as a question of inclusiveness: how can we include everyone in today's labour markets, reduce the sharp separation between insiders and outsiders and fight the poverty that results from poor working conditions and labour relations? Social exclusion and increasing immigration challenge the adaptive capabilities of national economies, regional labour markets and educational systems, and also put pressure on societal solidarity.

The global financial crisis that started in 2008 caused unemployment to rise to levels that had not been seen for decades. Today, unemployment remains at unacceptably high levels in a considerable number of European countries. Although labour

market conditions are improving, and the proportion of the working-age population with a job is projected to return to its pre-crisis level in 2017 (OECD, 2016a), the recovery continues to be uneven across regions and countries. Further, vulnerable groups such as low-skilled youths not in employment, education or training (the so-called «NEETs») face the risk of being left behind. The OECD report also signals that, as labour markets continue to recover from the impact of the financial crisis, longer-term weaknesses and structural changes in labour markets will become more visible. So, on the one hand, the financial crisis has led to cyclical developments while, on the other, it has hidden structural reforms and changes to an extent caused by aging and the rapidly increasing robotization, automation and globalization of society.

These general labour market trends influence the position of individuals and households, and also the positions of regions. Not all regions are affected in the same way, partly due to their specific industrial structures in combination with regional location factors, human capital characteristics and institutional, socio-cultural and governance issues. The recent publication *Regions at a Glance* (OECD, 2016b) clearly shows persistent regional disparities in terms of GDP, unemployment, education and other indicators of wellbeing such as health. It is widely accepted that individual happiness and wellbeing are closely related to having a job and earning an income. It is generally acknowledged that regions matter, and that differences in labour market outcomes illustrate differences in the unique characteristics of people and places (McCann *et al.*, 2013; OECD, 2011). This not only sets the stage for a new framework of place-based policy, it also fundamentally challenges the general labour market theories that offer explanations for regional variations in labour market outcomes. It also challenges the economic geography theorists to integrate general labour market theories into theories that explain spatial variations in labour market outcomes.

The main question we address in this contribution is what are the specific policy challenges in stimulating inclusiveness in regional labour markets? First, in Section 2, we discuss the trends in labour market developments in more detail and discuss their spatial implications. Then, in Section 3, we will argue that these developments set a new framework for regional labour market analysis and place-based policies. We are not aiming to develop a new regional labour market theory, rather we explore new research and methodologies that address regional labour market analysis. In Section 4, we address specific policy challenges from two perspectives: an investment-focussed perspective on regional economic policy to boost employment growth; and a compensation-centred perspective on social security and welfare, including an active labour market policy to re-integrate the unemployed into the labour market. Section 5 discusses governance issues related to bringing regional synergy into the policy domains (regional economic policy, ALMP, education and welfare), stimulating co-operation between stakeholders and enhancing effective and efficient implementation of policy instruments. Finally, in Section 6, we draw conclusions and offer recommendations for research and policy.

2. Trends in the spatial organization of labour

In the traditional, neo-classical, labour market theory, demand for labour is viewed from the firm perspective. The demand for human capital, consisting of a bundle of skills, is seen as a production factor that determines both productivity and its price in the form of wages. In the micro-economic theory of labour supply, an individual is willing to exchange hours of leisure time for hours of work depending on their preference for leisure time versus the desire to earn an income with which to buy goods and services. The labour market is where supply and demand meet, with the result that market forces determine the wage rate where labour supply and demand are in equilibrium.

In reality, the functioning of labour markets is much more complex. Rather than preferring leisure time to work, unemployment makes people unhappy, not only because of a lack of income but also because it lowers self-esteem and may ultimately lead to social exclusion. Labour markets are also segmented by occupation and region due to the heterogeneity of skills and limited job mobility and constraints on spatial mobility. Labour markets sometimes have sharp demarcations between the insiders, i.e. those with stable labour relationships and good working conditions, and the outsiders, those who are unemployed, inactive or disabled, or are in flexible working relationships with poor working conditions (Kahn, 2011). Further, labour markets are embedded in institutional and cultural patterns that are path dependent and not easy to change. This so-called «structuralist» or «balkanized» model of the labour market (Kerr, 1954) can be traced back to John Stuart Mill and Pigou who were dissatisfied with Adam Smith's conception of the competitive labour market.

In a historical setting, Martin (2000: 455) describes different periods in which spatial differences in labour have been conceptualized. From the 1930s to the mid-1970s, labour was viewed as a production factor available at a particular location as input into a firm's or an industry's production process. From the late 1970s, the focus shifted to the spatial division of labour, i.e. the idea that regional development and the distribution of employment are spatial expressions of the technical and social organization of labour in the production process. Labour remains unique because firms, in contrast to physical capital, do not own workers since slavery has been abolished. Another unique feature of human capital is its relative spatial immobility. In contrast to the assumptions underlying neo-classical theory, people are not footloose and this creates spatial mismatches and regional differences in unemployment. The labour market is in essence on a regional scale because commuting distances are limited by time and cost constraints, and more permanent relocations of labour through migration is also costly (Venhorst, 2012). Further, softer factors such as place-attachment and familiarity play a role in the choices made regarding commuting and migration behaviour (Venhorst, 2013). Since the late 1980s, there had been greater emphasis on the geographies of the labour market: on the idea that labour markets have an intrinsically local level of operation and regulation, that «the creation and destruction of jobs, and the processes of unemployment, unemployment, and wage setting, and the institutional and social regulation of the processes, to some extent at least, are locally constituted» (Martin, 2000: 456).

However, in today's global economy, the main drivers of economic growth, i.e. technological and demographic change, globalize the competition for highly skilled talent and production locations as a consequence of digital Taylorism (Brown, Lander and Ashton, 2011). These developments create problems of social exclusion in local communities and regions, unemployment and skill mismatches (Froy, Giguere and Meghnagi, 2012). As Martin (2000: 457) argued: «The increased spatiality of the labour market poses economic geographers with a series of important empirical and theoretical challenges, not only in making sense of the new patterns that are emerging, but also in terms of understanding how local labour markets function and what form local labour market policy interventions should take».

In achieving a better understanding of the functioning of the modern regional labour market, the following major trends need to be taken into account:

1. *Sectoral shifts*: there is an ongoing trend in that modern economies show major shifts in sectorial employment. Historically, the majority of jobs were in agriculture followed by a period of an increase in manufacturing jobs. Technological progress and economies of scale were the main driving forces. Nowadays, in all modern economies, the vast majority of the jobs are in the service sector but, because of the use of information technology, jobs in the service sector are at risk and some are disappearing. Due to the robotization in manufacturing and automation in services, it is especially jobs matched to lower-medium levels of education that are disappearing, while this has led to more jobs for the higher educated (Arntz *et al.*, 2016; Frey and Osborne, 2013). As a result, there is increasing polarization in the labour market (Goos, Manning and Salomons, 2014). In essence, the number of low-level jobs remains stable, while jobs at the medium level are dropping and the number of jobs requiring high levels of education is increasing.
2. *Knowledge intensity*: technological progress and innovation have meant that the unique added value of human capital is increasingly related to performing complex tasks requiring knowledge-intensive competences gained through high-level education. In addition to specific occupation-related skills, more general «21st century skills» (De Fruyt *et al.*, 2015; Voogt *et al.*, 2012) are also required and competences need to be kept up-to-date by means of life-long learning.
3. *Education*: as a consequence of the increasing knowledge intensity, the education level of the labour force is increasing, and higher educated people are much more successful than lower educated ones in term of higher wages and lower unemployment, and also in terms of wellbeing. Higher educated people have better health and a higher life expectancy (McMahon, 2009). Investment in education has a good return but, unfortunately, there are a growing number of individuals unable to achieve the level of education needed for a successful career. A substantial number of people have problems in the workplace due to insufficient basic reading and writing skills.
4. *Aging*: demographic transitions are leading to an aging population, declining birth rates and a shrinking labour force. On the one hand, this may mean we

have to produce more with fewer people, requiring an increase in labour productivity that could be facilitated by technological change and social innovation. On the other hand, the hours of labour available may increase if weekly working hours are extended by reducing part-time work, if lifetime working hours are increased by raising the retirement age, if participation rates increase, if new jobs are created, through job carving, that can be filled by low-skilled workers who are presently unemployed, or through immigration. The downside of increasing the retirement age is that it may cause problems in terms of more workers with outdated skills and more health problems that may result in lower productivity. Malmberg *et al.* (2008) observe that the age composition of the working-age population affects productivity in a complex way. In their view, two hypotheses are relevant. The first is based on productivity measurements at the individual level: with most studies indicating that labour productivity peaks somewhere between 30 and 50 years of age. The second hypothesis is based on events at the Horndal steel plant in central Sweden. Between 1927 and 1952, this plant experienced a mean annual growth rate in productivity of 2.5 percent despite the fact that no major investments were undertaken and the proportion of workers aged over 50 increased from one-third in 1930 to almost half in 1950 (Genberg, 1992). This finding suggests that workforce aging is not a problem for productivity growth. On the contrary, an aging workforce seems compatible with rapid increases in labour productivity through a learning-by-doing effect. Later, this formed an important part of Kenneth Arrow's learning-by-doing argument (Arrow, 1962). Malmberg *et al.* (2008) argue that although the two hypotheses appear incompatible (older workers have a lower level of productivity but a higher growth rate), both may be true and conclusions regarding the productivity of an aging workforce may not be as obvious as they may seem, because the aggregate effect is not necessarily a simple sum of the productivity of the age groups.

5. *Flexibilization, changing working relationships*: the proportion of workers with a full-time permanent job is decreasing, and an increasing number have temporary contracts and part-time jobs. The traditional nine-to-five working day is being replaced by flexible working hours. The advantage for the worker might be that they can choose their preferred working hours but, on the other hand, the disadvantage may be that the employer expects workers to be available 24/7. There is also a shift from working in a job-related contract at a specific employer towards working on project-related contracts in which individuals work on specific projects on a self-employed basis.
6. *Increasing spatial mobility*: there is a trend that commuting distances are increasing, especially for the more highly educated. This goes hand-in-hand with a shift from daily commuting journeys during rush hours to a fixed working place to patterns with flexible working hours and locations that require non-daily travel mostly in off-peak hours. With good access to high-speed broadband, workers are able to work partly at home and also while travelling. This working pattern may increase further when the self-driving car becomes an everyday reality.

7. *Increasing urban - rural divide*: historically, there has been a trend for economic activities to be concentrated in cities where agglomeration advantages can be achieved. This is matched by the concentration of higher educated people in cities, which starts when students move to cities to attend institutions of higher education (HEIs) (Venhorst, 2012). After graduation, they may move to another city for a job, or to high quality residential areas in suburban areas in close commuting distance to a large city, but they rarely return to or settle in very remote rural areas. As a consequence, due to this social and spatial sorting process, rural areas can suffer from population decline due to selective outmigration and, as a result, only less educated and elderly people with limited spatial mobility remain in rural areas. An interesting question is whether this pattern will continue in the future. There is evidence that second-tier cities are becoming the high-growth areas, and that the growth of large metropolitan areas is slowing. If the relationship between place of work and residence continues to weaken due to flexible working hours, the use of the internet and the introduction of the self-driving car, what is seen as the most attractive type of residential area might become a larger radius around urban centres because smaller cities can make use of facilities and amenities in large cities through the concept of «borrowed size» (Alonso, 1973).
8. *Decentralization of labour market policy*: since the 1990s, there has been a tendency in several countries to decentralize labour market policy so that it is designed and implemented with efforts from local and regional governments, the private sector, trade unions and community groups (Broersma *et al.*, 2013; OECD, 2003). It is claimed that decentralization enhances the balancing of development strategies for economic development, social inclusion and the quality of life. The OECD (2003) distinguishes two main types of decentralized structures in the design and implementation of labour market policy. The first is when programmes are implemented at the regional level following national guidelines or within a policy framework established at national level. The other form of decentralization is when powers to design and implement policies are also devolved to regional governments. In both models, various arrangements are possible with regard to funding, which may come from the national government, but also partly through local or regional taxes. In this respect, the choice of spatial scale is also important. Ideally, this should be at the scale of the regional labour market but, for practical reasons, policy is sometimes decentralized to local governments on a smaller spatial scale such as municipalities resulting in a need for cooperation.
9. *Globalization*: this increases and enforces an international interdependence of economies, countries, regions, cities and businesses because of the fragmented modes of production in value chains all over the world. Relocations or closures of businesses are increasingly the result of decisions made in foreign head offices. Regions will need to guard against abrupt economic changes, which will make it necessary to invest in resilience.

The latest economic recession has created an unemployment crisis that has obscured the underlying permanent changes in regional labour markets. The recession has created cyclical unemployment, but structural and permanent changes that affect long-term employment and training requirements are needed to solve structural problems such as social exclusion and aging that are fuelled by fundamental changes in our society. The response of resilient regions to these developments will determine the future earning power and employment development of regions.

There is a need to continue to innovate and take maximum advantage of the specific knowledge infrastructure, sectoral specializations and existing business networks that are available in a region. This is sometimes referred to as «smart specialization». For the regional labour market, this means that economic adjustment processes have to go faster, which necessitates more flexible labour relationships and greater dynamism in the labour market. The numbers of temporary contracts and of self-employed have already been increasing for years, and guarantees of a job-for-life are disappearing. The rapid and continuous change in needed skills requires not only life-long learning, but also other skills: the so-called 21st century skills. However, to solve the problem of social exclusion, fundamental changes with regard to the concept of labour and related institutions might also be needed.

3. The case for place-based policies

Although labour market conditions are continuing to improve since the start of the global financial crisis in 2008, and the share of the working-age population in work is projected by the OECD (2016a) to return to its pre-crisis level in 2017, the recovery continues to be unevenly spread between regions and vulnerable groups. Joblessness is highly concentrated in specific regions, and the variation in unemployment rates among the 362 large OECD regions (the so-called TL2 regions), and within countries, exceeds the variation across countries (OECD, 2011). This is somewhat surprising, and shows interesting patterns in what the OECD (2011) calls recession-hit and resilient regions. Resilient regions have managed to sustain employment growth during the recession, and experienced larger increases in qualified human capital and in participation rates than before the crisis and in the productivity of business services, implying that their employment patterns are less vulnerable to cyclical fluctuations. The recession-hit regions experienced faster economic growth and greater decline in unemployment from 1999-2007, suggesting structural fragilities in their economic structures and productivity. Hard-hit regions also had larger inflows of young people who were more vulnerable to job losses later (OECD, 2011: 64-65).

This variation in regional outcomes illustrates that strategies and labour market policies have to deal with regional labour-market variation (Froy *et al.*, 2012; Blien *et al.*, 2010; OECD, 2011, 2012, 2014). Further, it also illustrates the need to gain better insights into specific problems associated with specific groups (such as unemployment, inactivity or mismatches between demand and supply) in relation to economic and institutional characteristics of a region (OECD, 2014). Attempts to classify re-

gions, beyond the above classification by the OECD, have been made by Blien (2010) for Germany and by Baum *et al.* (2007) for Australia. These classifications can help in identifying regions with similar labour market problems and can serve as a starting point to develop strategies for a labour market policy and for the evaluation of policy measures aimed at enhancing the resilience of regions.

In economic geography circles, the debate is between space-neutral theories, where labour is seen as highly mobile, and place-based approaches that emphasize the underdevelopment traps associated with location-specific externalities and the potential market failures that they can also inhibit. «The place based approach explicitly advocates employing appropriately designed local knowledge and learning enhancement tools in regional policy, and the smart specialization argument is one such tool» (McCann *et al.*, 2013: 14). Place-based approaches seem to have become dominant in US and EU regional policies (OECD, 2011). As such, the unique characteristics of a region, in terms of its regional economic structure, its institutions, culture and history, the availability and development of skills in its workforce combined with transitions that embody dynamics and matching processes to societal and economic needs, is at the heart of most regional labour market analyses (Storper, 2013).

From a labour market perspective, regions are seen in two ways. Regions are both the drivers of economic growth and innovation, but also places that will suffer from new poverty and lack of opportunities for those who do not have the right skills for the regular labour market. First, there is the investment and knowledge perspective as the basis for economic and employment growth. Regions compete with each other, nationally and internationally, to recruit highly skilled and high potential employees in a globalized labour market. This perspective does not speak of unemployment, or an active labour market policy, but of a «Human Capital Agenda». This production-oriented perspective on the labour market emphasizes opportunities, although in an economic crisis even highly educated people in less popular disciplines may suffer from a lack of jobs and might be forced to accept jobs below their education level and, in this way, crowd out less educated individuals (OECD, 2016a; Broersma *et al.*, 2015; Edzes *et al.*, 2015).

The second standpoint is the social exclusion perspective: that those with low skills and an unfavourable track record have little access to regular jobs because their productivity is below the level that corresponds with the minimum wage or with social security benefits. In addition, they face competition from medium-skilled workers who have lost their jobs due to automation and robotization. This competition affects mainly the less educated, such as migrant workers and disabled or elderly people who are viewed as outsiders. For this group, rather than opportunities being emphasized, the policy is targeted on poverty, care and reducing claims for compensation through social security legislation.

It is not easy to unite these two perspectives. In theory, targeting an economic agenda for jobs and economic growth may, in the long term, also foster a social agenda for compensation and the re-integration of dropouts, but, more often than not, there are few direct connections between strengthening the regional economy and

providing opportunities for the less privileged in the labour market. However, there is evidence of positive human capital externalities at the level of regions and firms (Moretti, 2011, 2012). Broersma *et al.* (2015) and Venhorst (2016) show that both production and consumption externalities have positive effects on wages. Production externalities are transmitted at the level of firms and not at the regional level. For workers in low-skilled jobs, consumption externalities dominate production externalities. Workers in *low-skilled* jobs earn higher wages when working with workers in high-skilled jobs, whereas, for *low-educated* workers, such cooperation with highly educated workers has a negative relationship with wages. Van Dijk (2016) shows that local multipliers for high-skilled jobs in the tradable sector create significantly more jobs in the non-tradeable sector than jobs for low-skilled people in the tradable sector. Insights into these links are slowly emerging but do not yet offer practical tools for local decision-makers to solve the problems of the less employable.

From the foregoing discussion, it is clear that the labour market is in a very turbulent phase due to the deep and long-lasting economic crisis combined with structural changes. We see processes of economic restructuring, automation and robotization that change the quantity and quality of the labour demand. Labour supply is also changing due to aging and migration, increasing participation rates and part-time working, especially of females. The number of people with higher education qualifications is increasing, and jobs requiring medium skill-levels are disappearing. This leads to polarization in the labour market and a severe risk of social exclusion because of a substantial number of people unable to achieve high levels of education or to use life-long learning to sustain their employability. Working relationships are changing with more flexible contracts and project-based work based on cooperation and self-employment. Sorting processes may result in an increase in spatial disparities in terms of unemployment, income, new firm formation and population decline. All these developments pan out differently in different regions (see e.g. Delfmann, 2014).

In short, there is every reason to focus on the potential of a region to achieve a situation where it has a sustainable resilient regional economy in combination with acceptable levels and distributions of wellbeing for all its inhabitants without social exclusion. In the next section, we will review the implications of this for policy.

4. Challenges for regional economic and labour market policy

In this section, we will review the policy challenges in achieving a sustainable regional economy in combination with acceptable levels and distributions of wellbeing for all inhabitants without social exclusion. First, a careful analysis is needed of a region's economic, social and labour market problems. Here, an important question is whether the structure of the regional economy matches the available human capital stock, both in quantitative and qualitative terms. In terms of the regional labour market, it is necessary to know the nature of the unemployment problem, and here there are three basic possibilities:

1. Demand deficient (Keynesian/cyclical) unemployment, i.e. a lack of jobs that requires the creation of more jobs.
2. Structural unemployment, i.e. a mismatch between supply and demand with regard to skills/occupations and/or regions that can be solved by education/training and/or migration/commuting.
3. Frictional unemployment that requires an improved matching process.

4.1. Employment stimulation - Investment policy

It might very well be the case that all three unemployment types are present in a region. When the problem is a lack of jobs, an employment policy is needed that strengthens the regional economy. Obvious policy directions are to increase the number of jobs by enhancing regional competitiveness by stimulating innovation through regional innovation systems. This requires at least a regional innovation strategy (RIS) agenda in combination with a place-based smart specialization strategy. The basic aim is to strengthen the resilience in the region, although there is still considerable ambiguity about what is precisely meant by the notion of regional economic resilience, about how it should be conceptualized and measured, what its determinants are, and how it links to patterns of long-term regional growth (Martin and Sunley, 2014).

One can define resilience as the ability of individuals, employers, industries and regions to adapt to changing and intermittent conditions. For resilience and adaptability, the availability of action strategies is of major importance, and these are not easy to identify and implement (Storper, 2013). Simply put, the more possibilities there are for action, the greater the resilience. For regions, this might mean economic diversification and the ability to respond to increased economic headwinds, but not too much because that would equate with reduced scale efficiencies and a loss of the innovation benefits associated with specialization. As such, the key phrase is «related variety» (McCann *et al.*, 2013; Neffke *et al.*, 2011). A feature of such variety is a regional knowledge base that promotes the cross-fertilization of skills, knowledge, ideas and activities, leading to innovation. The EU has translated this notion into ways for regions to specialize in smart activities that fit the region and the people who live and work there. In short, regional innovation, economic growth and resilience will benefit from inter-sectoral connections (relatedness) and a connection to the knowledge and skills of the local workforce and social capital in the region (embeddedness) (McCann *et al.*, 2013).

Based on the strength of the region, and exploiting its existing potential means, its historical achievements, and the path-dependent socioeconomic infrastructure and its physical and geographical location, regions can develop a so-called RIS3 agenda (Regional Innovation Strategy for Smart Specialization). These RIS3 agendas address innovation and the required human capital, but pay scant attention to combating unemployment. The focus is on a Human Capital Agenda to ensure that, when new jobs are created, enough workers are available with the right skills. However,

policies targeted at stimulating investments, fostering the creation of new firms (start-ups) or attracting firms to relocate to the region may also lead to the creation of new jobs, especially if these firms operate in tradable sectors. An adequate infrastructure, in terms of roads, harbours etc., but also educational facilities and cultural amenities, and an efficient governance structure may help to achieve this goal.

A labour market policy for the creation of new jobs needs to start from the firm perspective and have, as its main objective, solving the labour market problems of firms. As such, it needs to have a close relationship with the Human Resource Management policies of firms.

4.2. Active Labour Market Policy (ALMP)

When the starting point is the unemployed pool available for work, or the inactive labour stock, and especially when the aim is to increase their chances on getting a job, governments and other stakeholders can use Active Labour Market Policy (ALMP) instruments. ALMPs stimulate entry into paid employment and thereby avoid or prevent social exclusion. ALMPs can increase the competitiveness of regions, and raise output and welfare in a region, if they help to re-allocate labour between sub-markets or contribute to maintaining the size of the effective labour force by preventing long-term unemployment. Bonoli (2010: 440-441) describes various forms of ALMPs based on two dimensions. The first is the extent to which the policy objective enables people to enter demand-driven market employment, provided by either private or public employers. The second dimension is the extent to which programmes are based on investing in jobless people's human capital. This investment can take the form of vocational training or help in developing the kind of soft skills that employers look for when selecting candidates. The intersection of these two dimensions allows us to identify different types of labour market policy and to map the variety that exists under the ALMP heading.

From Table 1 it is easy to see that ALMPs can take different forms, such as training to improve the skills of workers, to increase their labour productivity or to make them suitable for vacancies that require additional skills. This can involve taking part in additional training, or the use of temporary wage subsidies to compensate firms for investing in on-the-job training. ALMPs can also aim to improve the matching process in the form of counselling and vocational guidance or job search courses. Besides improving the quantity and quality of labour supply and the matching process, ALMPs can also be motivated by the desire to alleviate the moral hazard problem of unemployment insurance. Public opinion seems to be that the right to receive social security payments should go together with an obligation to find a job as soon as possible in order to minimize the cost to society of social security. However, when the difference between social security payments and the potential wage from a new job is small, there may be little incentive to put a lot of effort into searching for a job: the so-called unemployment trap or poverty trap. There is also the inactivity trap: when income-related benefits may be lost upon taking paid work. To increase the chances

of someone finding a new job, taking part in ALMP programmes can be obligatory, and people who fail to do so may face sanctions.

Table 1. Four types of Active Labour Market Policy

		<i>Investment in human capital</i>		
		<i>None</i>	<i>Weak</i>	<i>Strong</i>
<i>Pro-market employment orientation</i>	Weak	(Passive benefits)	Occupation Job creation schemes in the public sector Training programmes unrelated to employment	(Basic education)
	Strong	Incentive reinforcement Tax credits, in work benefits Time limits on benefit receipt Benefit reductions Benefits conditionality	Employment assistance Placement services Job subsidies Counselling Job search programmes	Upskilling Job-related vocational training

Source: Bonoli, 2010.

The use of ALMPs can be justified from an individual perspective because they assist an inactive person to find a job, from a regional economic perspective for improving the quality and quantity of the labour supply and from a societal perspective by responding to the moral hazard problem of unemployment insurance. However, a key question is whether the use of ALMPs is effective and efficient, both for the participants in the programmes and for society as a whole. ALMPs have been in operation for quite some time and there have been a large number of evaluation studies of various kinds. Eichhorst *et al.* (2016) argue that an ideal ALMP evaluation process should involve three steps:

1. Based on clearly defined success criteria, one should analyse whether participation in a measure is causal in improving the situation of the participating individuals;
2. Next, one should assess whether the individual successes justify the cost for the measure, and
3. Finally, one should determine whether the measure has also achieved net positive effects on the aggregate level.

Card *et al.* (2015) have recently published the results of a meta-analysis of impact estimates from more than 200 econometric evaluations from around the world. They find that, on average, ALMPs have relatively small effects on the participants. The average short-term impact on re-employment is close to zero due to a lock-in effect, but the impact does become more positive 2-3 years after completion of the programme.

The overall assessment of the evidence collated by these authors is that the effectiveness and the time profile of impacts depend very much on the type of programme and a participant's characteristics such as their gender, age and period of unemployment.

There has been little attempt to assess whether the impact of a programme justifies its costs. This requires a cost-benefit analysis. The costs of participation in an ALMP programme are relatively easy to calculate and consist of the material and personnel costs of the programme plus the social security payments of the participants or their forgone earnings. The benefits are however less easy to calculate. For the participants, the revenues are that, if they become employed sooner, this leads to gains for the individual and/or the firm in the form of higher wages and higher productivity. The cost of training can then be justified by the reduced expenditure on social security benefits. However, for a proper judgement of the costs and benefits, the third step also needs to be taken because ALMPs not only affect the labour market success of participants. Due to indirect effects (substitution, displacement and deadweight loss), they might also affect the job prospects of non-participants. Hence, even if ALMP programmes have a positive effect for the participants, this does not necessarily mean that the ALMP has a positive effect at the aggregate level of the region or the country. If an ALMP leads to the re-employment of a participant from one of its programmes, but at the same time prevents that job being filled by someone else, the net effect is zero at the aggregate level (Crepón *et al.*, 2013). It could even be negative if someone else would have filled that vacancy without any cost against an ALMP.

Compared to the large body of micro-econometric evaluations, the number of aggregate impact studies taking indirect effects of ALMPs into account is rather small, largely because of methodological problems. Comparing countries is difficult due to large institutional differences. As such, according to Eichhorst and Konle-Seidl (2016), a more promising approach is to use regional variations in ALMPs in a particular country to construct a counterfactual situation. This can be used to test whether an ALMP affects the matching rate in a region since the matching efficiency is often regarded as the primary contribution of an ALMP in reducing the number of unemployed and increasing the number of employed in a region. Eichhorst and Konle-Seidl (2016) report that the results from empirical studies that follow a regional approach are rather mixed. The aggregate impact of ALMPs on the matching process depends on the programme, and often ALMPs have no significant effect. Wapler *et al.* (2014), in a study in Germany, found that a greater proportion of people participating in ALMPs leads to an increase in regional matches, but that this effect varies significantly between different types of programmes. Positive effects stem from long-term vocational training and wage subsidies, as well as from intra-firm training measures. Their results also show that the effect of the different programme types depends to some extent on the regional labour market situation. Broersma *et al.* (2011) applied a different approach, comparing the actual in- and out- flows in activation programmes of 443 municipalities in the Netherlands between 1999 and 2007, and found that control, activation, employment creation and coordination strategies had positive effects on inflow to and outflow from social assistance. This suggests that the activities of

municipalities do make a difference, although the effects are small and vary depending on labour market strategies.

A different approach in the ALMP frameworks is to distinguish target groups. The idea is that a better profiling of the unemployed leads to a better and more directed use of policy instruments. Sol *et al.* (2010) have developed a client typology (see Table 2) based on (a) their «distance» to regular and normal, non-subsidized, jobs and (b) whether this «distance» is bridgeable. This distance is generally measured in terms of the productivity gap. When there is no gap, i.e. no distance to the labour market, the solution lies in generating jobs, stimulating motivation or counselling and motivation. Where the unemployed are at a distance from the labour market, the question becomes whether this distance is bridgeable. Depending on the answer, instruments vary between training, education and wage subsidies, or sheltered employment and benefits when people cannot bridge the distance to regular jobs.

Table 2. Division of instruments by client typology

	<i>Distance to regular jobs</i>					
	<i>No</i>			<i>Yes</i>		
				<i>Bridgeable</i>		<i>Non-bridgeable</i>
Problems	No jobs	No motivation	No match	Skills shortage / wrong skills Need for re-integration	Able to work but low productivity	Not bridgeable
Instruments	Employment creation Job Carving	Control Incentives and sanctions	Information Counselling Mediation	Training Education	Wage subsidy Workplace adjustment	Sheltered employment Benefits

Source: Sol *et al.*, 2010.

4.3. Education and Welfare policies

ALMPs are the most obvious type of labour market policy measures because they are directly targeted at the unemployed and trying to improve their re-employment chances and reduce the productivity gap. However, other types of policy might also be relevant, such as education and welfare policies. Education policy mainly has an influence on formal education before youngsters enter the labour market. It affects their labour market opportunities because the initial level of education is a very important characteristic for success in the labour market. Therefore, policies aiming to maximize the level of schooling and prevent school dropouts can improve the long-term labour market perspective.

Edzes *et al.* (2015) found that regional factors have a significant impact on the decision whether to continue education and on the likelihood of getting a job. The most striking finding is that a buoyant regional labour market stimulates individuals to accept a job and leave school before achieving the usual starting qualifications. This group prefers the short-term goal of earning money above investing in schooling where the benefits will occur sometime in the future.

Hamersma *et al.* (2014) found that, for low-educated workers, firm and personal characteristics are more important than regional characteristics in explaining under-qualification. By under-qualification we mean that workers have less qualification than the job requires. High regional unemployment rates reduce the likelihood of being underqualified. Working in smaller firms or in firms with many highly skilled jobs has a strong positive effect on the chances of attaining a higher-level job, while working in a firm with many highly educated workers lowers these chances. Women and non-natives are less often underqualified than men and natives, whereas older workers are more often underqualified than youngsters. Gaining a greater insight into the determinants of under- and over-qualification is important when it comes to developing more effective policy measures to improve the labour market position of the most vulnerable groups in the labour market.

In addition, the contents of an education programme can help solve unemployment problems if they match the skill needs of regional employers. Cooperation between schools and companies could help develop programmes such as apprenticeships, the German Meister-Gesel system and life-long learning for later career stages. However, cooperation should not be overly targeted on the needs of one particular firm in the region. Formal education is not the same as company training. Formal education should prepare people not only for their first job after leaving school, but also for a career, and should consist of the right mix of occupational skills and general, including 21st century, skills.

The welfare policy is also relevant in this context, especially in the context of the policy goal of inclusive growth leading to an inclusive labour market. In an inclusive labour market, everyone of working age can participate in paid work, including vulnerable and disadvantaged people. This raises the question of how labour market and social inclusion policies for disadvantaged sections of the population can be implemented at the local level. What can make it easier for people to join (or re-join) the workforce? How can one remove disincentives to work and prevent in-work poverty? Although the main aim of ALMPs is to foster entry into a regular job, and especially in times of economic crisis, full employment might not be a realistic goal. In the longer term, the increasing automation and robotization might lead to structural shortages of jobs, and Keynes' prediction might after all become reality, especially for jobs requiring only low and medium level education. This may lead to fundamental problems in society: if there are not enough regular jobs for a substantial proportion of the labour force, how do we cope with this? Two major questions need answers: how will people without a regular job spend their time, and how do they get an income? Here, the welfare policy comes into play. The government may create sheltered jobs and/or allow individuals to do voluntary work, for example in the care sector or in nature

protection, while receiving an income from the state. This idea has led to a discussion on whether Unconditional Basic Income (UBI) is an option. In effect, a UBI is an amount of money, paid on a regular basis to each individual unconditionally and universally, that is sufficient to ensure a material existence and participation in society. A UBI is seen as a step towards an emancipatory welfare system. This basic income should empower everyone to have an unconditional good and dignified life. Although a UBI might seem utopian, the idea is far from window dressing. Switzerland considered a UBI as a realistic option, but in a referendum on June 4th 2016 a majority voted against its introduction. Finland decided in August 2016 to introduce an experiment in which 2000 Finnish people would receive a UBI.

5. Governance

One of the biggest policy challenges is to bring regional synergy into the domains described above (regional economic policy, ALMP, education and welfare), through effective co-operation between stakeholders, and to implement policy instruments efficiently.

In that sense, decentralization of national welfare policies to regional and local government levels is one of the main trends in shaping social welfare in the US and in Europe (Edzes *et al.*, 2012). The OECD (2016b) recently calculated that regional and local (i.e. subnational) governments (SNGs) control many policy levels that are responsible for promoting prosperity and wellbeing, and were responsible for around 40% of total public expenditure and 60% of public investment in 2014 in the OECD area. Education, health, general public services, economic affairs and social expenditure represent the bulk ($\approx 85\%$) of SNG expenditure. At the same time, the responsibility for these sectors is often shared, requiring coordination across national and subnational levels of government to ensure effective, efficient and coherent policy-making. Moreover, the lack of such co-ordination was indicated as a major challenge by three-quarters of European SNGs participating in an OECD Committee of the Regions survey in 2015 (OECD, 2016).

Decentralization is often justified by a need to improve efficiency. It prevents agency problems between national and local governments, and local governments are assumed to be better able to adapt policy measures to local needs, priorities and local partnerships (Broersma *et al.*, 2013). The premise is that local officials can address problems more effectively. As such, it is claimed that decentralization has an overall positive impact on the cost of public service delivery. Another claim is that local governments can indeed address and influence local problems more effectively. In terms of the first claim, Broersma *et al.* (2013) show that, for the Netherlands, shifting the budgeting responsibilities for social assistance to local governments did increase the efficiency of public service delivery.

Often regional cooperation is rather informal. Removing this laxity, and creating binding, cross-disciplinary co-operation should be at the core of the gover-

nance approach. Only in this way can meaningful connections be made between the labour market and regional investment agendas, including through the RIS3 approaches, agendas aimed at shrinking regions, regional investment funds for vocational education and urban and regional innovation and investment programmes. In addition to the national funding of labour market policy and regional economic policy, regions need greater freedom to organize their own regional tax regime. Going one step further, one could consider regional collective agreements in which employer and employee organizations, together with regional and local governments and educational institutions, make regional agreements on wages, pensions, quality of the education system, employment guarantees on job mobility and so on. Here, inclusiveness, empowerment and reform become the prime responsibility of the region to ensure regional long-term earning power and the prospects of present and future generations.

6. Conclusions and recommendations for research and policy

We started this contribution with the question as to what are the specific challenges facing policy that aims to stimulate inclusiveness in regional labour markets. We argued that unemployment and inactivity are still one of the biggest social and economic problems, and that structural developments, such as sectoral shifts in employment structures and globalization, coupled with robotization and automation, question future job growth. This scenario is accompanied by trends such as aging populations and an increasing urban-rural divide that result in enormous differences between regions, even within countries. What we also can see is that science and policy, in particular related to economics and geography, are developing alongside two perspectives that dominate labour market research. First, there is the investment perspective that focuses on regional economics, innovation strategies and clustering, entrepreneurship and spillovers. Second, the compensation and activation perspective mainly focuses on solving individual unemployment, active labour market policies, benefits and welfare arrangements. Somewhere between these two perspectives lies the field of (21st century) skills development, human capital, education and lifelong learning. On top of this, the potential to cope with these employment-related issues differs by region, and between urban and rural areas, due to the differences in economic structures and in the quantity and quality of the labour force.

On the basis of the foregoing discussion, we offer three main recommendations. First, we made a case for place-based policies. We argue that labour markets are inherently regional, because people are not as footloose as neo-classical and human capital theories assume. People are bound to regions, culture, families etc., and are sometimes locked into regions because the housing market prevents them moving. This regional orientation is one of the reasons that there are spatial mismatches in the labour market. Place-based policies will require stakeholders to acknowledge that

part of the solution lies in the coordination, at the local or regional level, of employment, skills and economic development policy (OECD, 2014) and will require the integration of the perspectives noted above. A popular theoretical notion nowadays is resilience, as a characteristic of regional economies, and also of individuals who try to establish careers in flexible labour markets. However, labour market research has had little to say on the determinants of resilient careers. What kind of education and skills, and what individual background characteristics, determine individual resilience? How is this influenced by place-based circumstances? How can we incorporate notions of resilience in ALMPs?

Second, fundamental changes with regard to the concept of labour and institutions are needed to solve the problem of social exclusion in reaching a situation of a sustainable resilient regional economy combined with acceptable levels and distributions of wellbeing for all inhabitants. It may have taken almost a century, but Keynes' 1930 prediction that how to spend leisure time would become one of the most important societal problems may now be becoming a reality, especially for those with lower and medium levels of cognitive skills. It is likely that the traditional government goal of full employment will need to be reconsidered. It is widely recognized that modern labour relations and the emphasis on employability causes more frequent switches between socioeconomic statuses such as employed, in education, unemployed or inactive, and caring. Managing these transitions for individuals as well as for employers is key to sustainable employment growth, and also for individual wellbeing and social inclusion. Transitional labour markets would be a complement to the innovation and investment strategy required to create new jobs to replace the jobs lost during the recession in Europe (Schmid, 1998: 3). Transitional labour markets are defined as institutionalized arrangements that allow or support changes in employment status or the combination of labour market work with other socially (and to some extent economically) useful activities. However, little is known about transitional careers, the volatility of these careers and their relationship with specific regional characteristics. To gain more insight in this area, a research agenda is needed that combines theories drawn from economics, sociology, psychology and geography. With the increasing availability of micro-data, it is becoming possible to monitor the long-term careers of individuals in a household and also in a spatial context. To take advantage of this type of data, new methods of analysis will need to be used, such as sequence analysis to detect typical careers patterns (Middeldorp *et al.*, 2016). In addition, the potential of Big Data to enable insight into these processes needs also to be explored.

Third, the governance of policy measures aimed at the labour market still needs attention. As we have already indicated, dismantling the informality of cooperation and creating binding, cross-disciplinary cooperation should be at the core of a governance approach. This co-operation should be closely tailored to the unique locational advantages and infrastructure of a region. A second challenge would be to transfer actual discretionary power to regions, rather than just task them with executing national legislation. Again, tailoring policy measures to the specific regional characteristics

could improve the effectiveness and efficiency of labour market policy and create the right mix of smart place-based specialization policies and of education and welfare policies.

References

- Alonso, W. (1973): «Urban zero population growth», *Daedalus*, 102(3), 191-206.
- Arntz, M., Gregory, T., and Zierahn, U. (2016): *The risk of Automation for Jobs in OECD Countries: A comparative Analysis*, Paris, OECD.
- Arrow, K. J. (1962): «The economic implications of earning by doing», *Review of Economic Studies*, 29(3), 155-173.
- Baum, S., Haynes, M., Van Gellecum, Y., and Han, J. H. (2007): «Considering regional socio-economic outcomes in a non-metropolitan Australia: A typology building approach», *Papers in Regional Science*, 86(2), 261-86.
- Blien, U., Hirschenauer, F., Phan, V. (2010): «Classification of regional labour markets for purposes of labour market policy», *Papers in Regional Science*, 89(4), 859-850.
- Bonoli, G. (2010): «The political Economy of Active Labour Market Policy», *Politics & Society*, 38(4), 435-457.
- Broersma, L., Edzes, A., and van Dijk, J. (2013): «Have Dutch municipalities become more efficient in managing the costs of social assistance dependency?», *Journal of Regional Science*, 53(2), 274-291.
- (2015): «Human Capital Externalities: Effects for Low Educated Workers and Low Skilled Jobs», *Regional Studies*, 50(10), 1675-1687.
- Broersma, L., Edzes, A., and van Dijk, J. (2011): «The effects of municipal policy strategies on social assistance inflow and outflow in the Netherlands, 1999-2007», *Environment and planning c-Government and policy*, 29(4), 709-727.
- Brown, P., Lauder, H., and Ashton, D. (2011): *The Global Auction: The Broken Promises of Education, Jobs, and Incomes*, New York, Oxford University Press.
- Card, D., Kluge, J., and Weber, A. (2015): «What Works? A Meta-analysis of Recent Active Labour Market Program Evaluations», *IZA Discussion Paper 9236*, Bonn.
- Crepón, B., Dufo, E., Gurgand, M., Rathelot, R., and Zamora, P. (2013): «Do Labour Market Policies have Displacement Effects? Evidence from a Clustered Randomized Experiment», *Quarterly Journal of Economics*, 128(2), 531-580.
- De Fruyt, F., Wille, B., and John, O. P. (2015): «Employability in the 21st Century: Complex (Interactive) Problem Solving and Other Essential Skills», *Industrial and Organizational Psychology*, 8(2), 276-281.
- Delfmann, H., Koster, S., McCann, P., and Van Dijk, J. (2014): «Population change and new firm formation in urban and rural regions», *Regional Studies*, 48(6), 1034-1050.
- Edzes, A., Hamersma, M., Venhorst, V., and van Dijk, J. (2015): «Labour Market Performance and School Careers of Low Educated Graduates», *Letters in Spatial and Resource Sciences*, 8(3), 267-289.
- Eichhorst, W., and Konle-Seidle, R. (2016): *Evaluating Labour Market Policy*, IZA-Discussion paper 9966, Bonn.
- Frey, C. B., and Osborne, M. A. (2013): *The future of jobs: how susceptible are jobs to computerisation?*, Oxford University.
- Froy, Giguere, and Meghnagi (2012): *Skills for Competitiveness: A Synthesis Report*, Paris, OECD.
- Genberg, M. (1992): *The Horndal Effect: Productivity Growth without Capital Investment at Horndals verken between 1927 and 1952*, Uppsala, Uppsala University.

- Goos, M., Manning, A., and Salomons, A. (2014): «Explaining Job Polarization: Routine-Biased Technological Change and Offshoring», *The American Economic Review*, 104(8), 2509-2526.
- Hamersma, M., Edzes, A., and van Dijk, J. (2015): «Underqualification as an opportunity for low-educated workers», *Environment and Planning C. Government and Policy*, 33(1), 83-103.
- Kahn, L. A. (2011): «Labour Market Policy: A Comparative View on the Costs and Benefits of Labour Market Flexibility», *Journal of Policy Analysis and Management*, 31(1), 94-110.
- Kerr, C. (1954): «The balkanisation of labour markets», in Bakke, E., and Hauser, P., *Labour mobility and Economic opportunity*, Cambridge Mass, MIT Press, 92-110.
- Keynes, J. M., (1963): «Economic Possibilities for our Grandchildren», in *Essays in Persuasion*, New York, W. W. Norton & Co., 358-373.
- Malmberg, B., Lindh, T., and Halvarsson, M. (2008): «Productivity Consequences of Workforce Ageing: Stagnation or Horndal Effect?», *Population and Development Review*, 34, 238-256.
- McMahon, W. (2009): *Higher Learning Greater Good: The Private and Social Benefits of Higher Education*, Johns Hopkins University Press.
- McCann, P., and Ortega-Argilés, R. (2013): «Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy», *Regional Studies*, 84, 1-12.
- Martin, R. L. (2000): «Local Labour markets: Their nature, Performance and Regulation», in Clark, G. L., Feldmand, M. P., and Gertler, M. S. (eds.), *The Oxford Handbook of Economic Geography*, Oxford, Oxford University Press.
- Martin, R., and Sunley, P. (2014): «On the notion of Regional Economic Resilience: conceptualisation and explanation», *Journal of Economic Geography*, 1-42.
- Middeldorp, M. M., Edzes, A. J. E., and van Dijk, J. (2016): *Job access and the spatial mobility trajectories of higher educated graduates in the Netherlands*. Paper presented at the 56th Annual Congress of the European Regional Science Association in Vienna, August 2016.
- Moretti, E. (2011): «Local labour markets», in Ashenfelter, O., and Card, D. (eds.), *Handbook of Labour Economics*, Elsevier, 1238-1303.
- Morretti, E. (2012): *The new geography of jobs*, Boston/New York, Houghton Mifflin Harcourt Publishing Company.
- Neffke, F., Henning, M., and Boschma, R. (2011): «How do regions diversify over time? Industry relatedness and the development of new growth paths in regions», *Economic Geography*, 87(3), 237-265.
- OECD (2003): *Managing decentralisation: a new role for labour market policy*, Paris, OECD.
- (2011): *Regional Outlook 2011: Building resilient regions for stronger economies*, Paris, OECD.
- (2012): *Developing skills*, Paris, OECD.
- (2014): *Job Creation and Local Economic Development*, Paris, OECD.
- (2016a): *Employment Outlook 2016*, Paris, OECD.
- (2016b): *Regions at a Glance 2016*, Paris, OECD.
- Schmid, G. (1998): *Transitional Labour Markets: A New European Employment Strategy*, Berlin, WZB.
- Sol, C. C. A. M., Glebbeek, A. C., Edzes, A. J. E., Busschers, I., de Bok, H., Engelsman, J. S., and Nysten, C. E. R. (2011): «Fit or unfit»: *Naar expliciete re-integratietheorieën*, Amsterdam, University of Amsterdam.
- Storper, M. (2013): *Keys to the City: How economics, institutions, social interactions and politics affect regional development*, Princeton, Princeton University Press.
- Van Dijk, J. J. (2016): «Local employment multipliers in U.S. cities», *Journal of Economic Geography*, Advance Access published April 25, 2016.

- Venhorst, V. (2012): *Smart move? The spatial mobility of higher education graduates*, Groningen, RUG.
- (2013): «Graduate migration and regional familiarity», *Tijdschrift voor Economische en Sociale Geografie*, 104(1), 109-119.
- (2016): «Human capital spillovers in Dutch cities: consumption or productivity?», *Annals of Regional Science*, 1-25.
- Voogt, J., and Pareja Roblin, N. (2014): «A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies», *Journal of Curriculum Studies*, 44(3), 299-321.
- Wapler, R., Daniel, W., and Wolf, K. (2014): «Active labour-market policies in Germany: Do regional labour markets benefit?», *IAB-Discussion Paper*, 28/2014.