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In-work poverty and shifts in work, income, and the composition of households

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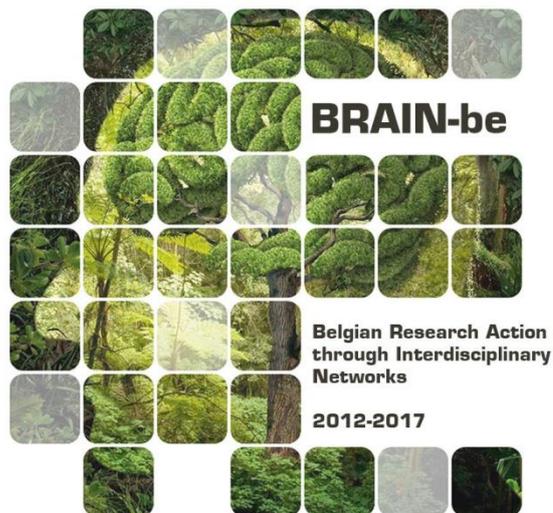
NETWORK PROJECT

IPSWICH

In-work poverty and shifts in work, income, and the composition of households

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FINAL REPORT

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ABSTRACT

Context

In-work poverty is increasing in the EU, but Belgium appears to resist the trend. However, little is known about the background of the working poor in Belgium today and about the mechanisms that ensure the low rate of working poor in Belgium. The IPSWICH project aims at clarifying these issues, in order to prevent the growth of in-work poverty in Belgium. To do so, we use a standard supply and demand framework to link different poverty issues to policy choices and investigate the adequacy of those options.

Objectives

The project aims (1) to measure and explain in-work poverty in general, and establish the link with non-standard work in particular, (2) to explore the dynamics in the low-paid segments of the labour market and the links between out-of-work benefits and in-work benefits, (3) to measure the relationship between minimum wages and low-wage work and document the institutional role in preventing inequality, (4) to investigate the impact of discrimination and diversity on the wages of workers.

Conclusions

We find that in-work poverty is at low rate, and that as target groups become less numerous, their poverty risks increase. The primary groups affected are workers in non-standard work, and workers in households with a low work intensity. To incentivize work, it has to be rewarding, meaning that as out-of-work benefits increase, so should labour income, either through wages or tax reductions. Minimum wages as such appear to be judiciously chosen to contain inequality at the labour market without causing disemployment effects, and the industrial relations structure increasingly coordinates wage development, which prevents polarization. Finally, discrimination and segregation target migrant workers, but increased productivity and collective bargaining structures may prevent negative effects of accelerating heterogeneity of the workforce.

Keywords

In-work poverty, atypical employment, minimum wages, collective bargaining, work incentives, discrimination

1   INTRODUCTION

In-work poverty is at a very low level in Belgium, in comparison to the EU average, and has been quite stable over time (Marx, Verbist, Vandenbroucke, Bogaerts, & Vanhille, 2009). In-work poverty stood at a level of 4.7% in Belgium in 2016, which is substantially lower than the EU28 average of 9.6% (see Figure 1, left panel), despite the fact that few specific policies were adopted to prevent this form of poverty (Van Gyes, 2010). These numbers reflect the EU-SILC definition of being 'at risk of poverty' (AROP); that is earning an equivalised disposable income that is below the AROP threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). The AROP threshold is a relative threshold, which is raised when median incomes increase. While the increase in the in-work poverty rate in Belgium is still contained, the ten-year evolution in France (+33%) and in Germany (+73%) is much more dramatic (Figure 1, right panel).

While these figures might be interpreted as a sign of the inclusiveness of the labour market in Belgium, the levels of in-work poverty are partly offset by the relatively low employment rate, and an overall risk of poverty of 15.5% in 2016, compared to the European average of 17.1%. This rate, moreover, is higher than in some other countries with lower levels of in-work poverty. Regional differences matter too: relative to Flanders, the poverty rate in Wallonia is at a level that is twice as high, and the poverty rate in Brussels is three times as high.

Figure 1. In-work poverty in the EU in 2016 (left) and in Belgium and neighbouring countries from 2005 to 2016 (right).
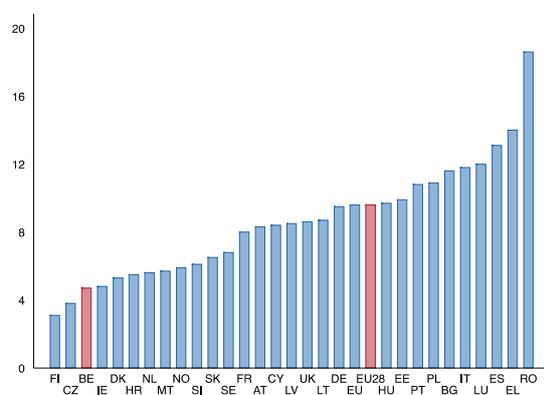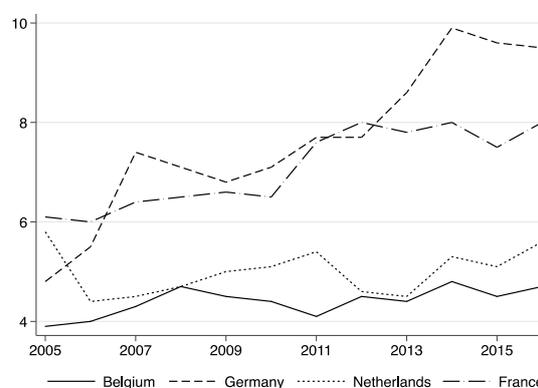
Source: EU-SILC   Source: EU-SILC

Because of its low incidence, little attention has been given to the working poor in Belgium. Instead, other concerns, such as job growth, are often deemed to be more pressing. During the pre-crisis period, the mere existence of in-work poverty challenged the widespread believe that increases in employment are automatically accompanied with decreasing poverty rates (Marx et al., 2013). In the period after the Great Recession of 2009, however, the twin pressures of tight public budgets and labour market reforms have shifted attention to the issue of in-work poverty (Crettaz, 2015). Moreover, trends in other countries suggest that the number of working poor is likely to increase,

due to ongoing trends such as technological change, migration, and accelerating globalization. This holds especially for certain at-risk groups, including the self-employed, non-standard workers in part-time or temporary work, migrants, the low-skilled and single parents. With this in mind, it is important to separate current in-work poverty, which is almost residual and difficult to tackle, from future in-work poverty. More labour market flexibility and lower benefits can put severe pressure on household incomes, also for workers. More non-standard jobs and stronger incentives to accept low paid jobs are expected to lead to a higher employment rate, but also in more in-work poverty.

Recent policy measures that have been adopted to address in-work poverty in Belgium and elsewhere are generally aimed at 'making work pay', building on the notion that work offers the best protection against poverty. To this end, the 'unemployment trap', which occurs when the net income difference between low-paid work and unemployment benefits is less than work-related costs and discourages people from taking up work, needs to tackled. The Belgian government (federal and regional) has introduced several tax-based schemes to make work more financially attractive and to encourage people to take up paid employment rather than not work. However, at the same time a stricter wage norm was defined, and the non-application of wage indexation was imposed in order to moderate wage developments. While such policies are generally accompanied by poverty-preventing measures such as the (targeted) tax reductions mentioned above, they imply a shift of 'inequality management' from the labour market to the state. This may in turn expose other target groups, such as migrants or women, to be exposed to more wage discrimination.

Against this background, the IPSWICH project on *"In-work poverty and shifts in work, income, and the composition of households"* sets out to map in-work poverty in Belgium and its underlying causes, with a specific focus on aspects related to wages, working hours and contracts, household work intensity, social protection, productivity, discrimination, and bargaining power. IPSWICH further examines how institutional and policy factors, driven by underlying labour market and household dynamics, give rise to in-work poverty in Belgium and how policy reforms can contribute to reduce present poverty and prevent further increases.

2 STATE OF THE ART AND OBJECTIVES

2.1 Theoretical framework

To investigate the issue of in-work poverty in Belgium, the workers affected and the reasons why the rate is low, and to maintain good practices to prevent increases in in-work poverty in the near future, we adapted the framework of Iversen & Wren (1998)to the topic of in-work poverty. Figure 2 sketches the standard supply and demand framework that will be used to address current poverty problems, showing a trilemma of policy choices, in which one option needs to be sacrificed to achieve the other two:

- *fiscal discipline*, when government increases social spending on poverty or public employment (point G);
- *employment levels*, when the statutory minimum wage is set too high or trade unions bargain for too high wages so that labour demand falls back (point U), or
- *earning inequality and poverty risks*, when the market equilibrium wage is below the poverty threshold (point N).

Figure 2. The policy trilemma
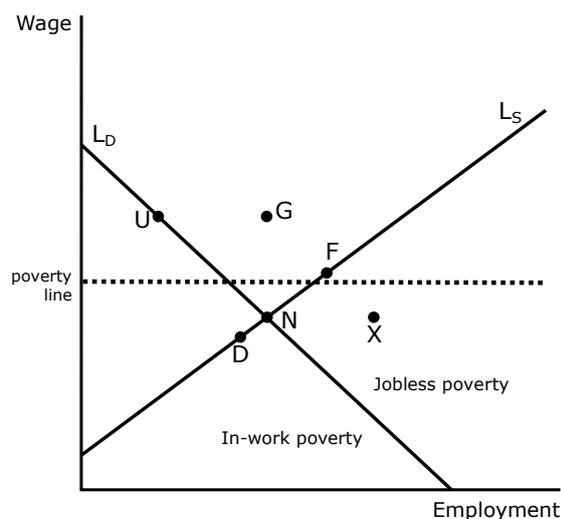
The choice governments make largely defines the welfare state regime. Typically, point G is linked to social-democratic regimes, point U to Christian-democratic regimes, and point N to liberal regimes. This framework serves as the conceptual model on which the IPSWICH research is based and helps to clarify the tension between in-work poverty and jobless poverty. Using this framework, the different analyses focused on four areas in which the Belgian case should be more prominent in the literature: the poverty implications of non-standard work (such as temporary work and specific forms of self-employment), work incentives and the link between out-of-work benefits and in-work benefits, institutional wage setting and its impact on wage inequality and job polarization, and workplace wage discrimination of target groups, in particular foreigners.

More specifically, focusing on **non-standard work** first, a rise in flexible contract forms (flexi-jobs, paid volunteering work, platform work) may increase labour demand to point F in Figure 2, but this comes at the expense of employment security and stability of income, and can thus lead to potential precariousness. **Work incentives**, like the 'work bonus' that aim to motivate unemployed workers to look for a job, are only effective when the difference between in-work benefits and out-of-work benefits is large enough and when financial stimuli is what is holding back the inactive or unemployed individual. If adequate, we could move to point F with a demand shift due to lower wage costs and increased labour supply due to wages that are higher because of tax reductions. However, when such measures cost more than they return in terms of reduced social spending, we might move to point G in Figure 2, with subsidized labour. Another topic that can be explored with this framework is the market distribution of wages and the impact of **collective bargaining**. Unions can bargain for decent wages, but also need to consider the possible negative employment effects along the demand curve (cf. point U). However, the ambiguous empirical evidence of negative employment effects suggest that the labour market may be out of equilibrium and employers may set wages as a monopsonist (point D), so that setting minimum wages can be welfare-efficient. In addition, disruptive trends such as technological progress and migration may lead to a segregated labour market and increased inequalities (e.g. job polarization), on which centralized collective bargaining (e.g. the wage norm, non-application of wage indexation) can have a moderating effect. Finally, strict **discrimination** against migrants would imply that they are paid below their productivity level, positioning them also at the non-competitive point D, at risk of poverty. However, accounting for differences in human capital and the backgrounds of migrant workers may be equally important to overcome segregation in the labour market and raise wages and employment levels above the poverty line to point F.

2.2 Literature review on the phenomenon of in-work poverty

Three societal transformations are of particular importance in relation to the phenomenon of in-work poverty in Europe. First, deindustrialization, globalization and technological change have caused shifts in labour demand in favour of more educated workers as of the 1980s (Goldin & Katz, 2008). More recent enquiries indicate that the loss of middle-paid routine work has led to a polarization between high-paid non-routine professional jobs and low-paid non-routine personal service jobs (Goos, Manning, & Salomons, 2014). These shifts resulted in a trade-off between increasing in-work poverty and increasing dependency on benefits, in particular for the lower skilled (Andress & Lohmann, 2008; Marx, 2007). The labour demand shocks thus seemed to corrode the role of both full-employment and economic self-reliance of workers as the two core pillars of sustainable welfare states.

A second key transformation is the substantial increase in female labour market participation, often in part-time work in the service-sector. This transformation changed the composition of the overall income package at the household level (Rainwater, Rein, & Schwartz, 1986). Research has demonstrated that the contribution of women to the overall household income still varies considerably across countries (Maître, Nolan, & Whelan, 2012; Stier & Mandel, 2009), but its share

in total household earnings grew between 1981 and 2005 in most European countries (Nieuwenhuis, Need, & Van der Kolk, 2013). The third, related transformation is the appearance of a greater variety in family configurations. More dual earners, singles and single parents, challenge the adequacy of social protection schemes that were designed to accommodate the needs of single, male breadwinner households (Orloff, 2002; Sainsbury, 1999).

To define in-work poverty, a variety of approaches exists to both being 'in-work' and 'poverty' (Crettaz, 2011; Meulders & O'Dorchai, 2013; Thiede, Lichter, & Sanders, 2015). According to Eurostat's household-based definition, a worker is considered to be at-risk-of-poverty if his or her equivalent disposable *household* income during the income reference period of a year is below the threshold of 60 percent of the national median (Dennis & Guio, 2003). The modified OECD scale[1] is used to account for economies of scale in consumption at the household level. This threshold reflects the minimum level of income considered necessary to have an acceptable standard of living relative to the society in which a person lives. It describes those below relative income thresholds as 'at-risk of poverty' rather than 'poor', since low household income is not the only factor leading to social exclusion (Atkinson, Cantillon, Marlier, & Nolan, 2002; Decancq, Goedemé, Van den Bosch, & Vanhille, 2014). Given this definition of poverty, the question how we define being 'in-work' becomes particularly challenging. This is not just a technical issue, but a matter of substantive importance (Horemans, 2016). The Eurostat indicator defines being 'in-work' as individuals who declare to have been employed for more than half the income reference period. One of the fundamental critiques on the Eurostat approach is that in times of high unemployment and employment flexibility, as witnessed during the recent economic crisis, a threshold of working at least seven months will exclude a substantial group of workers with an unstable work history (Crettaz, 2011; Ponthieux, 2010). On the other hand, this approach still allows periods of unemployment or inactivity to act as an in-work poverty mechanism (Halleröd, Ekbrand, & Bengtsson, 2015; Halleröd & Larsson, 2008).

2.3 Employment and poverty in Belgium

To grasp the policy and academic debates on the relationship between employment and poverty, and the issue of in-work poverty, the macro- and micro-level have to be distinguished (Marx, Horemans, Marchal, Van Rie, & Corluy, 2013): for an individual, compared to not working, a job typically provides better protection against poverty, all else being equal. However, from a macro-perspective, more employment does not automatically lead to lower poverty rates. In both academic and policy circles, in-work poverty is often seen as a problem of low-wage work or non-standard employment. However, it has repeatedly been shown that the overlap between low earnings and in-work poverty is not straightforward. In fact, workers at risk of poverty are low paid, but from a household definition of poverty, only a minority of low-paid workers are at-risk (Maître et al., 2012; Marx & Nolan, 2014). In this case, low-paid workers may contribute to the household income by providing an *additional* income. The same goes for atypical work, like temporary workers or part-time workers (Horemans, 2017; Van Lancker, 2013). Under the assumption that a main breadwinner exists in a household, an additional low-wage job or an additional income from a non-standard job is may lift

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[1] The scale gives a weight of 1 for the first adult, other adults correspond get a weight of 0.5, and each child under 14 gets a weight of 0.3; the use of an equivalence scale is necessary in order to be able to compare households of various size and composition and to account for the economies of scale in multi-person households.

the total household income above the poverty line. At the same time, the poverty risk becomes substantial when low earnings or income from a non-standard job need to provide for an entire family. Hence, it is clear that in-work poverty is the result of the interplay between socio-demographic, economic and institutional factors (Marx, Verbist, Bogaerts, Vandenbroucke, & Vanhille, 2011). We will discuss this variation based on comparative observations below.

Figure 3 looks at the position of Belgium with respect to both the employment rate and the at-risk-of-poverty rate in Europe in 2015. The horizontal axis shows the employment rate for people aged 20-64, the age group for which the EU-2020 employment target is set. The vertical axis contains the AROP rate, a sub-indicator of the EU-2020 strategy on poverty and social exclusion. Overall, it appears that a higher employment rate goes hand in hand with a lower AROP level (r = -0.548). From Figure 3, we also learn that while Belgium scores better than the EU-28 average with respect to the AROP rate, it falls below the EU-28 average employment rate. Several countries perform better for both AROP and employment, including the Czech Republic, Denmark, Finland, the Netherlands, Norway, and Iceland. A significant correlation between employment and poverty, however, does not necessarily mean that more employment automatically leads to lower poverty. In fact, for several countries with similar AROP rates as Belgium (Slovenia, Hungary, Luxemburg, France, Austria, Sweden and Switzerland), higher employment rates are reported. Furthermore, Slovakia has a similar employment rate as Belgium, but a lower AROP. Nevertheless, the more favourable outcomes of *some* central and eastern European countries also lead us back to the relative definition of household poverty, as median income is lower in these countries, and we actually measure the degree of inequality. Moreover, another reading of this graph might be that Belgium manages to contain poverty at the level that would be predicted if it had already surpassed the Europe 2020 target rate of employment of 75%.

Figure 3. Employment rate and at-risk-of poverty rate Europe, 2015
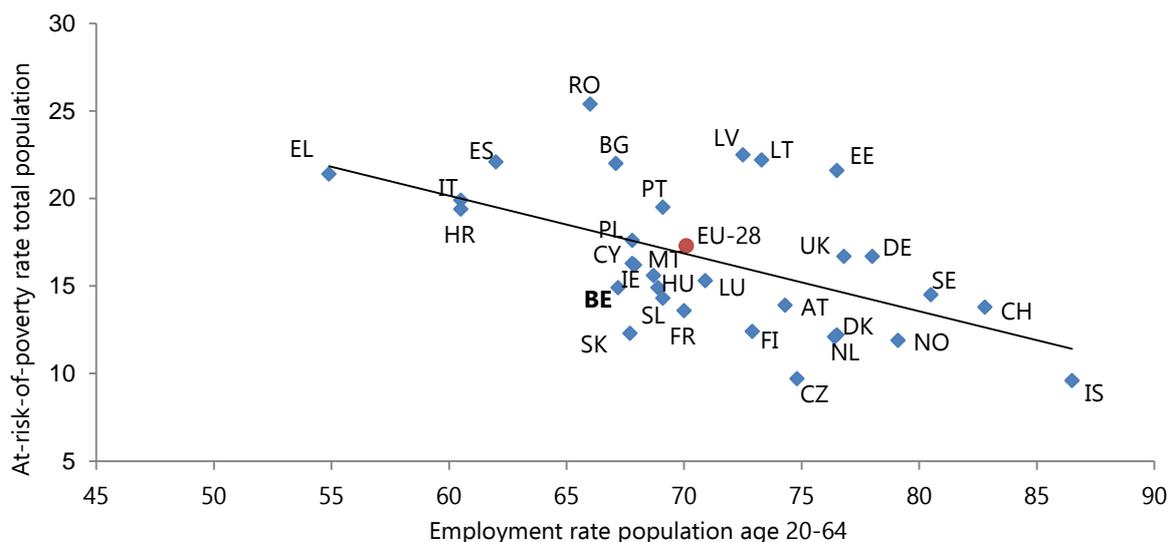
Source: Eurostat: EU-LFS (lfsi_emp) and EU-SILC database (ilc_li)
Note: for CH, HR, and IE the at-risk of poverty rate refers to the year 2014.

Turning to the relationship between the evolution in employment rate and the evolution in the poverty rate in Figure 4, it is clear that employment growth within a country does not automatically result in a reduction in poverty. On the contrary, for example, looking at the last five years, the figure shows that employment growth was accompanied with increase in the AROP of two percentage points or more in Sweden, Germany, Bulgaria, Latvia, Estonia, Malta, but with a decrease in the AROP rate of a similar size in the UK, Poland, and Ireland.

Figure 4. Evolution employment rate and AROP rate, Europe, 2005-2015 and 2010-2015
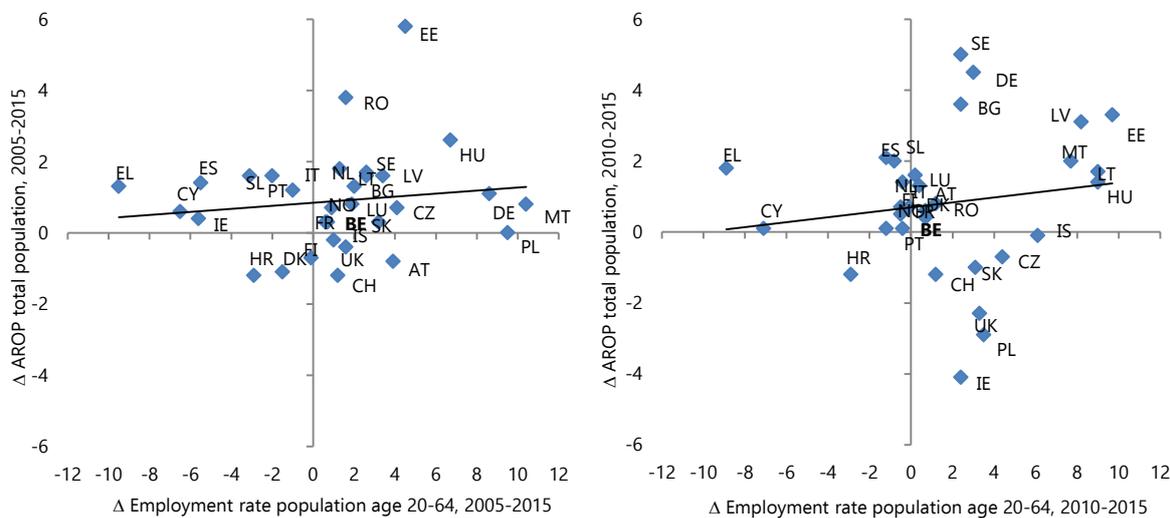
Source: Eurostat: EU-LFS (lfsi_emp) and EU-SILC database (ilc_li)
Note: '2005-2015': CH: 2010-2014, BG:2006-2015, HR: 2010-2014, RO: 2007-2015, IE: 2005-2014, and for '2010-2015': CH: 2010-2014, HR: 2010-2014, IE: 2010-2014

For Belgium in particular, there is little change in the employment levels and AROP when comparing two points in time. Even when looking at the trends in more detail, Figure 5 shows a

fairly stable trend for both indicators in recent years. However, in the 1990s and before the crisis of 2008, employment gradually increased while the poverty rates showed a remarkable stable pattern.[2] In the post-crisis period, we neither observe significant changes in the employment rate, nor in the poverty rate of Belgium. This evidence is largely consistent with more advanced empirical techniques (De Beer, 2007). One of the key explanations why employment and poverty do not automatically move in the opposite directions has to do with the distribution of jobs over households and the type of jobs are being created and/or destroyed (Marx, Vandenbroucke, & Verbist, 2012).

Figure 5. Evolution employment rate (left axis) and at-risk-of poverty rate (right axis), Belgium and EU-15
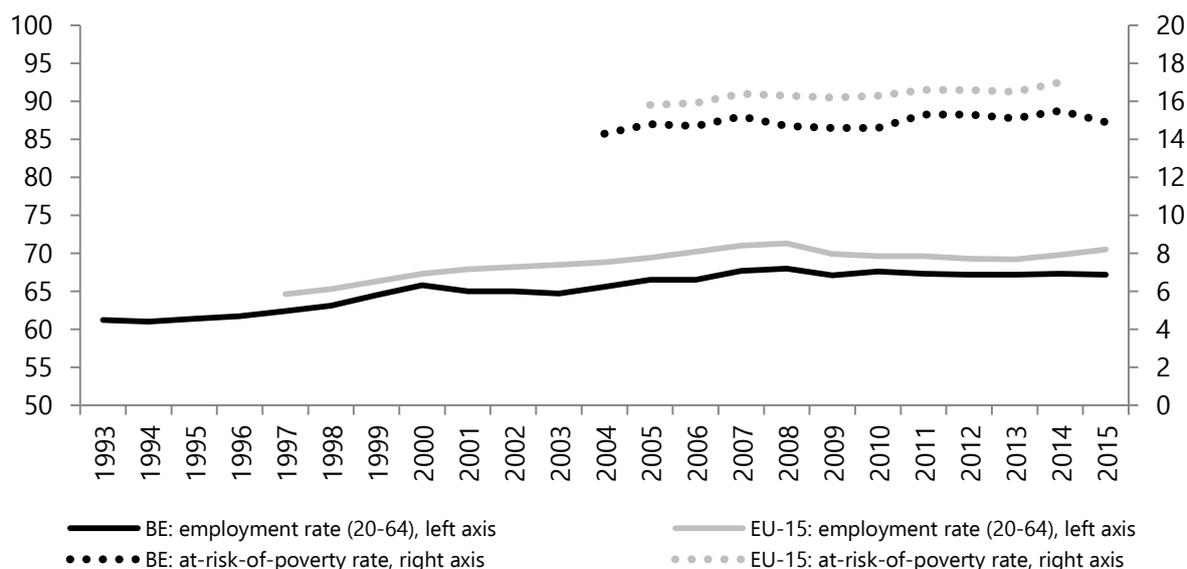
Source: Eurostat: EU-LFS (lfsi_emp) and EU-SILC database (ilc_li)

While having a job is commonly expected to provide the best protection against poverty, attention for the working poor has been growing across Europe (Frazer & Marlier, 2010). Eurostat statistics for 2015 indicate that, across the 28 European countries, on average 9.6% of the workers are at-risk-of-poverty. In Figure 6, we see that in 2015 Belgium has the third lowest degree of in-work poverty: only 4.5% of workers has an income below the poverty threshold. Only Finland and the Czechia perform better, and again we note that in the latter case median income levels are considerably lower than in Belgium.

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[2] For a detailed discussion on the stable Belgian pre-crisis trend in income inequality in general, see Horemans, Pintelon, & Vandenbroucke (2011) and Van Rie & Marx (2013).

Figure 6. In-work poverty rates employed persons, aged 18-64, 2015
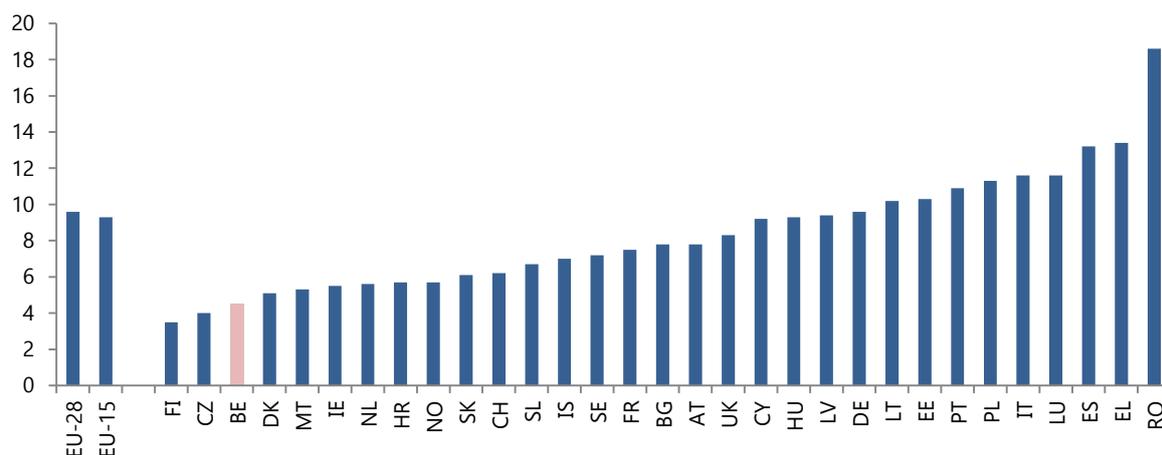
Source: Eurostat EU-SILC database (ilc_iw)
Note: 2014 for EU-15, IE, HR, and CH

In-work poverty in Belgium is also at a structurally low level in longitudinal perspective. Figure 7 shows the evolution of the at-risk-of-poverty rate during the last decade for workers aged 18-64 for Belgium, the Netherlands, Germany, and the EU-15 on average. In Belgium and the Netherlands, the picture is fairly stable. On average for the EU-15, however, an increasing pattern in in-work poverty is observed. The rise in in-work poverty is especially noteworthy in Germany, where the rate has doubled in last ten years. Note that sampling error alone may cause a slight change from year to year of the same order in countries with a high and a low share of working poor, so that 'error' in countries such as Belgium and the Netherlands should not immediately interpreted as an increase or a decrease.

Figure 7. In-work poverty employed persons aged 18-64, 2004-2015
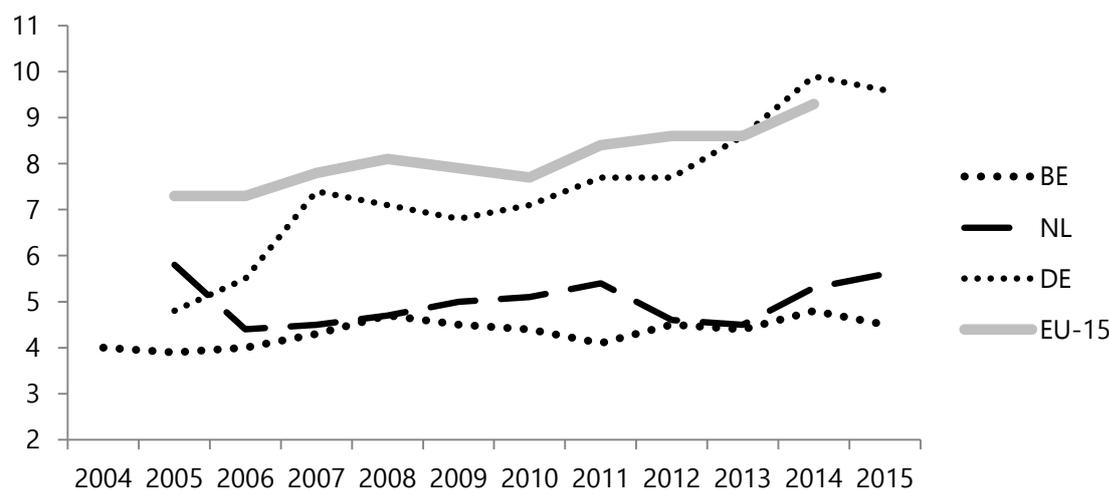
Source: Eurostat: EU-SILC database (ilc_iw)

2.4 Changes in the workforce and poverty risk by individual, household and job characteristics

After having established that the poverty risk of workers has changed little over time in Belgium, we can take a closer look at the changes in the poverty risk of particular groups of workers, to assess whether these results hold across the board. More specifically, we study which groups face a particularly high poverty risk and whether this changed over time. We also examine developments in their share in the workforce, to better understand the impact on the overall in-work poverty rate.

Looking at the individual characteristics of workers in there are several steady, yet noteworthy developments. For most workers, the poverty risk is almost unchanged, as is the overall in-work poverty rate. Yet, for low- and middle-skilled workers, Table 1 highlights an increase in the poverty risk of more than two percentage points. Furthermore, the poverty risk of EU-born migrants increased, possibly due to the European enlargement. Another observation from the table is that the share of workers among the working population with a traditionally higher poverty risk decreased for some groups (i.e. men, low educated, youngsters), while it increased for other groups (i.e. born outside of the EU, living in Brussels). Lastly, in 2005 women used to have a lower poverty risk than in 2014, but we should be aware of the issues with the measurement of in-work (Peña-Casas & Ghailani, 2011; Ponthieux, 2010), and in particular with the gender bias of household measures in this respect, which assumes an equal distribution of income in the household (Meulders & O'Dorchai, 2013).

In the household-poverty perspective, income of all household members is pooled, and the poverty thresholds are adjusted for household size. Hence, household-level characteristics are key to understand the profile of the working poor. The higher the ratio of dependents to earners and the lower the work-intensity of those who are working, the higher the poverty risk. We find an increased poverty risk of families that were already more at risk in 2005, such as families more than two children, single adult families, and families with a low household work intensity. However, over time the share of those types of households among the workforce decreased. Behind the stability of the rate of in-work poverty, we therefore find two opposing forces: at-risk-of-poverty households are becoming more vulnerable, but the share of vulnerable households is diminishing.

The large difference in poverty risks based on the household structure prove that work in itself is does not fully take away poverty risks (Marx & Nolan, 2014), but it is clear that households with a higher work intensity have a much lower risk. Clearly, job characteristics, and especially the earnings potential of certain jobs matter to understand in-work poverty. Table 1, shows that in-work poverty is dramatically higher in unstable (not full-year workers and temporary) jobs, in low paid jobs, in part-time jobs, for the self-employed, in non-supervisory jobs, in small companies, and in particular occupations (service and sales, agricultural and industrial jobs, and elementary occupations). Moreover, these correlations are found at one point in time, and may also buffer against poverty risks at a later point.

We should acknowledge in-work poverty is a complex issue and the definition of poverty and work are not neutral. For instance, from an individual perspective the female poverty risks would be higher than those of men, because women on average have less paid, and less-paid working hours. On the other hand, transfers within the household are important to cope with poverty risks, and so are transfers between household through fiscal redistribution. We will touch on these different approaches in the different perspectives that come together in the IPSWICH project, ranging from the collective distribution of wages in the labour market, through fiscal work incentives, poverty-reduction for non-standard workers, and the employment conditions based on purely personal characteristics such as gender or ethnic origin.

Table 1. In-work poverty risk and share of workers by individual level characteristics

		2005		2014	
		Poverty	**Share (%)**	**Poverty**	**Share (%)**
Total		**4.3**		**5**	
INDIVIDUAL LEVEL CHARACTERISTICS					
Sex	men	4.6	56	4.7	53.3
	women	3.2	44	5.3	46.7
Education	low	7.2	15.9	9.3	13.7
	middle	3.8	35.8	6.2	34.1
	high	3.7	48.4	3.1	52.2
Age	18_29	4.9	20	5.5	17.1
	30_49	4.4	59.9	5.5	54.4
	50_64	3.4	20.1	3.6	28.5
Born in	Belgium	3	89.3	3.3	86.1
	EU	4.8	5.8	8.9	6.8
	Not EU	20.5	4.9	18.2	7.1
Region	Flanders	3.5	61.5	3.7	61.7
	Brussels	10.2	8.3	11.4	9.4
	Wallonia	4.2	30.2	5.5	28.9
HOUSEHOLD LEVEL CHARACTERISTICS					
Children	0	2.6	46	3.3	46.7
	1	4.6	22.3	4.6	21.2
	2	5.2	20	6.1	22.3
	>2	8.9	11.7	11	9.9
Family type	Single adult	7.2	19.3	9.4	18.3
	Couple	3.4	61	3.7	60.7
	Other	4.1	19.8	4.8	21
Household	]0;0,5[	14.9	16.4	21.3	7.2
Work intensity	[0,5;0,8[	3.3	19.2	9.4	20.3
	[0,8;1[	1.6	18	2.4	23.4
	1	2	46.4	2	49.1
JOB CHARACTERISTICS					
Full year	No	10.7	3.8	13.5	6.3
	Yes	3.7	96.3	4.2	93.7
Low market income	No	1.5	82.5	1.5	82.2

|		2005		2014	
		Poverty	**Share (%)**	**Poverty**	**Share (%)**
	Yes	13.4	17.5	15.1	17.8
Temporary	No	2.4	91.2	2.5	91.5
	Yes	5.9	8.8	14.9	8.5
Part-time	No	3.3	79.9	3.9	75.2
	Yes	4.8	20.1	6.1	24.8
Self-employed	No	2.7	88.1	3.7	89.4
	Yes	12.8	11.9	14.5	8.5
Supervisor	No	3.4	71	4.5	71.9
	Yes	1.2	29	1.4	28.1
Company size	<11	9	24.9	9.9	23.2
	11_50	2.2	21.2	4	23.1
	>50	1.6	53.8	2.3	53.7
Occupation	Managers	2.3	27.2	2.1	34.1
	Technicians	1.5	14.2	2.9	15.2
	Administrative	1.3	20.5	2.9	14.2
	Service and sales	7.3	9.5	7	11.7
	Agriculture and Industrial	6.8	19.7	7.3	15.9
	Elementary	8.5	9	13.6	9

Source: EU-SILC

3   METHODOLOGY AND SCIENTIFIC RESULTS

3.1   Atypical work

3.1.1   Positioning

Across Europe, the rate of atypical work is increasing. Despite the dynamic balance in Belgium between increasing poverty risks and decreasing numbers of workers in target groups according to EU SILC, there are a number of trends that introduce similar forms of flexible work, notably the growth of the agency work industry and new forms of work that make use of independent workers or platform workers (Maselli, Lenaerts, & Beblavy, 2016). In this respect, the Michel I (2014-2018) government has allowed a list of activities which can deliver up to €6,000 a year to workers exempted from taxation. Also other measures, such as the 'flexi-job' statute provide an untaxed additional income. Elsewhere, new types of contracts that deregulate working time and employment stability have become increasingly popular (e.g. zero-hour contracts in the UK and mini-jobs in Germany). Note that the terms 'non-standard', 'atypical', or 'flexible' employment can be used interchangeably for the same employment conditions, although the social and political interpretation could vary (Barbier, 2013).

Figure 8. The policy trilemma: the case of atypical work
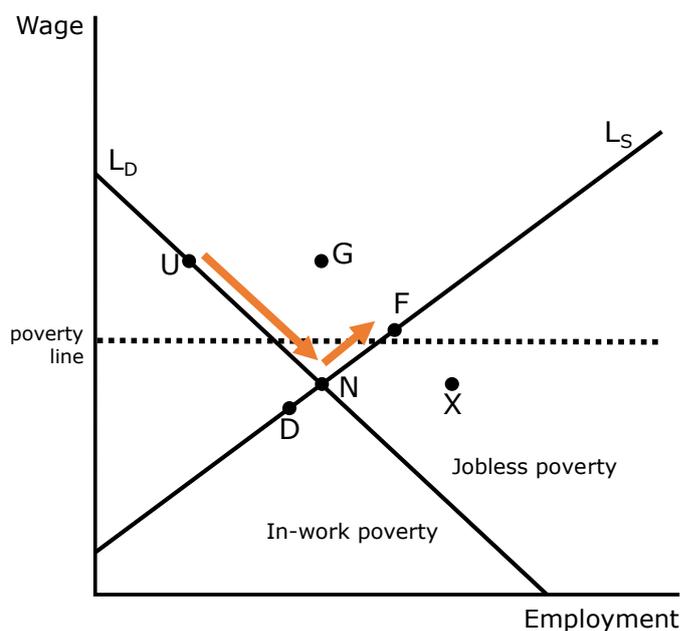
In general, the expectation of those advocating flexible work is that the employment rate can be increased and the business environment will improve (Lang, Schömann, & Clauwaert, 2013; Vaughan-Whitehead, 2012). In the framework of this project depicted in the figure above, this implies a shift in labour demand to point F, and it may indeed provide additional income to households (Maître et al., 2012). However, the lack of employment certainty and variable earnings may also bring the worker into a precarious position, which in turn weakens her/his bargaining power. We may end up in "a situation where labour force participation increases but at the same time poverty stays unaffected. In other words, unemployed poor just shift into working poor" (Airio,

2008: 34). Working Papers 1 and 2 deal with this topic, studying the differences in poverty risks between workers in standard and non-standard work in WP 1, and the poverty risks of independent workers in WP 2.

3.1.2 Method

We draw on EU-SILC data (2012), which is the main source to monitor income poverty across Europe. Because non-standard workers' work history is generally more unstable during the income reference period of a year, we define being 'in-work' by looking at the self-reported employment situation at the time of the interview. As such we do not exclude certain in-work poverty mechanisms a priori (Crettaz, 2013). Because different approaches of being 'in-work' have important consequences regarding the magnitude of in-work poverty in general (Ponthieux, 2010), and among non-standard workers in particular (Horemans & Marx, 2013), our figures will differ from those reported by Eurostat.

As a starting point for the research, we clarify the definitions and conceptualizations used to study in-work poverty among non-standard and independent workers. In our work, temporary employment is considered non-standard work because workers are only *hired as dependent workers for a specific period of time.* Fixed-term contracts are the most common form of temporary employment, and are regulated by specific legal provisions regarding, among other things, the maximum duration of the contract and the number of renewals (ILO, 2015). The key point is that some jobs do not offer workers the prospect of a long-lasting employment relationship. In reality, a variety of country specific practices exist, like fixed-term, project, task- based or replacement contracts, as well as seasonal, on-call or casual work, or even trainees and workers in job creation schemes (OECD, 2002). The second type of non-standard work examined is part-time employment. Part-time employment is characterised by an employment relation where the *normal hours of work are less than those of a comparable full-time worker* (Bollé, 1997).

For non-standard workers, we use the following analytical procedure. In a first step, we use EU-SILC data to demonstrate that the poverty risk of part-time and temporary workers is substantially higher than that of full-time and permanent workers respectively. In a second step, we follow the 'income packaging' approach: i.e. splitting household income into different components and adding them in a particular sequence (Millar et al., 1997; Strengmann-Kuhn, 2003). Then, two specific counterfactuals are constructed. First, we construct a *counterfactual poverty rate* based on individual earnings, which indicates whether an employee would be poor in the hypothetical situation that she would rely solely on her own earnings to provide for her entire family (Debels, 2008; Gardiner & Millar, 2006). Second, as periods out of employment characterize non-standard work, we examine the *relative poverty risk* for non-standard workers if they would not receive income replacement benefits. This approach allows us to consider the incidence of in-work poverty by combining earnings and benefits.

In a third step, we perform a decomposition of the in-work poverty gap between standard and non-standard workers. First, the 'expected' non-standard poverty gap is calculated as the difference in the profile of non-standard and standard workers at the pooled coefficients. It indicates what the difference in the poverty risk would be if non-standard workers had a similar profile as standard

workers. More technically, we first regress various characteristics on poverty for all workers simultaneously and use these coefficients to calculate the 'expected' poverty risk for non-standard workers with the typical characteristics of standard workers. The estimated 'expected' non-standard poverty gap is compared with the observed non-standard poverty gap to gauge the share that is attributable to the differences in observable characteristics between standard and non-standard workers. The added value of this approach is that it provides an empirical estimate on the contribution of both a wage penalty and an incomplete labour market attachment to the higher poverty risk of non-standard workers, while also taking into account other socio-demographic differences. This is done by applying an Oaxaca-Blinder (see Oaxaca, 1973 and Blinder, 1973) decomposition for binary response models (Fairlie, 2005). For a detailed discussion on the method see Horemans (2016a).

In addition to non-standard workers, we analyzed the poverty risks of the self-employed, focusing on the different position of the self-employed based on the relative household measure of poverty and the degree of material deprivation. The measurement of material deprivation as adopted by the European Commission and the member states in 2009 (Guio, 2009) states that someone is considered materially deprived when living in a household that lacks 3 out of 9 items: (1) afford one week annual holiday away from home; (2) being able to face unexpected expenses; (3) avoid arrears (mortgage or rent, utility bills or hire purchase instalments); (4) afford a meal with meat, chicken, fish or vegetarian equivalent every second day; (5) afford to keep their home adequately warm; (6) afford to have a car/van for private use (if wanted); (7) afford to have a washing machine (if wanted); (8) afford to have telephone (if wanted); (9) afford to have a television (if wanted). Note that as one of the three sub-indicators to monitor the Europe 2020 strategy target to reduce poverty and social exclusion, 'severe' material deprivation (SMD) is adopted, indicating that people live in a household that lacks 4 out of 9 items. Because the at-risk-of-poverty rate, singling out income, and material deprivation look for the same state in which individuals are excluded from ordinary living patterns, customs and activities, we investigate the relation between both concepts, and whether they vary based on the kind of self-employment.

3.1.3 Results

Turning to the findings on **standard and non-standard workers**, we show the at-risk-of-poverty rate for both categories in Table 2. Three main conclusions can be drawn from this table. First, the poverty risk of part-time and temporary workers is substantially higher compared to that of full-time and permanent workers respectively, also in Belgium. Second, the difference in the at-risk of poverty rate between standard and non-standard workers increased gradually in recent years, mainly because of the rising poverty risk of non-standard workers. Third, the poverty rates of non-standard workers vary more than those of standard workers, illustrating the diversity in the nature of non-standard jobs across countries. Part-time and temporary workers earn less annually because they work less, but also because they typically face an hourly wage penalty. While this leads to lower annual earnings, it is not unequivocally related to in-work poverty since the overall household composition and income package also have to be accounted for.

Table 2. At-risk of poverty rate of standard and non-standard workers, 2005-2013

	Permanent		Temporary		Full-time		Part-time	
	2005	2013	2005	2013	2005	2013	2005	2013
AT	6.1	6.8	6.9	13.5	5.9	6.8	10.8	9.5
BE	2.4	2.7	5.9	10.0	3.3	3.5	4.7	5.9
BG		4.9		25.3		6.4		20.9
CH		6.1		11.8		6.6		9.8
CR		4.1		10.5		5.3		26.2
CY	5.2	6.2	18.8	25.9	6.0	7.8	9.0	16.6
CZ	2.8	2.3	6.3	7.3	3.0	3.5	6.6	10.5
DE	3.3	6.6	8.6	17.0	3.5	6.3	6.6	13.4
DK	2.9	3.3		12.9	4.2	2.7	5.5	7.5
EE	5.4	5.7	16.2	13.4	6.5	6.4	17.4	16.4
EL	4.8	5.8	17.3	13.8	12.0	10.7	24.1	27.0
ES	4.9	5.4	11.3	17.5	10.1	8.9	13.9	18.7
FI	1.7	1.7	5.9	6.5	2.9	2.7	10.6	10.6
FR	3.6	5.1	9.6	15.2	5.3	6.0	8.4	12.8
HU	4.0	4.9	7.1	23.7	6.7	5.4	15.1	16.5
IE	3.6	2.2	10.3	7.2	4.6	2.9	11.0	7.4
IS	4.4	3.3	12.9	10.7	6.5	4.1	9.8	9.7
IT	5.6	7.0	16.1	18.6	8.1	9.0	14.5	17.9
LT	5.8	8.2	23.1	11.5	7.8	7.6	30.1	24.7
LU	8.3	8.9	24.0	23.1	8.9	10.1	12.6	14.0
LV	6.7	7.2	12.2	17.6	8.0	7.7	25.3	20.5
MT	3.7	3.5	6.5	4.7	3.9	5.3	9.7	12.1
NL	2.6	3.3	3.9	6.8	5.8	3.4	4.6	4.5
NO	3.2	3.3	12.6	18.3	3.4	4.6	7.7	7.9
PL	6.6	5.1	13.5	12.2	12.6	9.7	23.0	20.2
PT	6.7	5.5	11.9	11.7	10.1	8.8	27.8	28.0
RO		4.9		12.1		13.1		57.3
SE	3.4	4.4	8.0	18.8	4.7	5.2	7.4	11.1
SK	6.1	3.0	7.5	7.3	8.7	5.3	13.7	17.8
SL	2.9	3.9	8.7	8.1	4.3	5.8	10.4	13.4
UK	4.7	5.9	7.5	8.0	5.8	6.2	12.3	13.6
EU-27	4.3	5.5	10.9	14.7	7.2	7.2	11.2	14.6

Source: Eurostat: EU-SILC

Because temporary workers typically face a higher wage penalty and part-time work tends to serve as an additional income, temporary workers are expected to face a higher poverty risk. Table 2, however, does not confirm this as a general finding. Moreover, in several Eastern and Southern European countries the opposite holds. One explanation is that in these countries part-time jobs tend to be more concentrated within households compared to continental European countries (Horemans, 2016b). In addition, if part-time work is more widespread, for example when combining work and care is institutionally supported, the poverty risk of part-timers tends to be lower on average (OECD, 2010).

Table 3. Incidence of earnings poverty (and the share that ends up in poverty), and in-work poverty by type of contract (permanent/temporary) and employment regime (full-time/part-time)

	Full-time workers				Part-time workers		
	Earnings poverty	Share of earnings poor in poverty	In-work poverty		Earnings poverty	Share of earnings poor in poverty	In-work poverty
Permanent	48.9	(5.8)	3.0	Full-time	40.5	(5.9)	2.6
Temporary	77.4	(17.2)	13.7	Part-time	80.9	(9.5)	7.8

Source: EU-SILC

Table 3 gives an overview of the poverty risk when workers are assumed to provide for their entire family relying solely on their own earnings, the share of earnings poor that end up in poverty, and in-work poverty rates. A first observation is that especially part-timers would be unable to support their family. This is what we could expect because they work less by definition. Furthermore, given the gendered nature of part-time employment, this illustrates the latent in-work poverty risk of women (Peña-Casas & Ghailani, 2011). Overall, the figures confirm that having only one labour income is seldom sufficient to support a family, including for a large part of those working full-time or with a permanent contract (Maitre et al., 2012; Marx & Nolan, 2014).

If the share of employees in earnings poverty that actually ends up in poverty is lower for non-standard workers compared to standard workers, it suggests that other income resources are more helpful for the former (Debels, 2008). The figures, however, indicate the opposite. In almost all countries, non-standard workers with poverty earnings are more likely to end up in poverty compared to standard workers. This is because the amount of income from other resources needed to be lifted above the poverty line remains smaller for standard workers.

After this baseline analysis, we continued our research on standard and non-standard workers with a decomposition exercise. Results from this exercise confirm that low resources (low wages, low work-intensity of other household members, low skills, youngsters, singles, not in full-year employment, low occupation level, working part-time/temporary, not receiving benefits) and high needs (presence of children) are associated with an increased poverty risk (Andress & Lohmann, 2008; Crettaz, 2013; Fraser, Gutiérrez, & Peña-Casas, 2011; Lohmann, 2009). We dig deeper into some of these results.

Observable differences explain at least three quarters of the difference in the poverty risk between temporary and permanent workers on average. In most countries, the strongest contributing factor is the incomplete labour market attachment of temporary workers, followed by differences in hourly wages. Temporary workers are more likely to receive additional benefits, which partially compensate their higher poverty risk. Overall, however, the impact for the differences in the poverty risk are small. The work intensity of other household members is, on average, higher for temporary workers and they are therefore more protected by earnings of other household members than permanent workers. This can be explained by the strong concentration of temporary employment among young workers who are still living at home. For non-standard workers personal income replacement benefits matter considerably more than for standard workers as a way to avoid poverty.

Looking at part-time versus full-time workers, the part-time poverty gap is, on average, less strongly attributable to the difference in observable characteristics than the temporary poverty gap. Yet, for part-time workers, part of the explanation lies in the fact that they work less by definition and thus earn less annually, irrespective of the hourly pay penalty or periods out of work.

Despite these results, it is important to highlight that the poverty risks are nevertheless low for both part-time and temporary workers. For temporary workers, this is because the State to some extent compensates periods out of work. For part-time workers, the work-intensity at the household level tends to provide effective protection against poverty. The contributions of other household members typically help workers avoid poverty when their own earnings are insufficient for the entire family (Gardiner & Millar, 2006).

In the following part of the analysis, we turned our attention to the **self-employed**. Comparing the self-employed with employees, we find in Table 4 that the poverty risk of self-employed workers (both those with and without employees) in Belgium is much higher than that of employees for the at-risk-of-poverty measure (AROP), while the opposite is true for the material deprivation measure (MD). The same contrast is found in other countries. This discrepancy between employees and self-employed can be potentially be explained by the fact that the self-employed more often can draw on assets accumulated over the life cycle or on the business assets they control.

Table 4. Material deprivation among workers, by current employment status, individuals aged 18-64, Belgium 2014

	Employee	Self-employed with employee(s)	Self-employed without employee
AROP	3,7	12,9	13,9
MD	6,3	0,9	3,9

Source: EU-SILC

It appears that the link between at-risk-of-poverty rate and material deprivation at the country level is stronger among employees than among the self-employed. This is also illustrated in the two figures below, which correlate the at-risk-of-poverty rate and material deprivation rate for employees (top chart) and the self-employed (both with and without employees) (bottom chart). While the top chart for employees clearly shows a positive correlation, no such relationship is found in the bottom chart for the self-employed.

Moreover, the share of the self-employed with employees, facing material deprivation is actually lower in countries where they signal a higher poverty risk. The reasons for these results are unclear, but measurement issues as well as the difficulty for the self-employed to distinguish between proper belongings and company assets, may be roads to investigate.

Figure 9. Correlation AROP and MD among employees (only income as employee), individuals aged 18-64, 2014 (r=0.367)
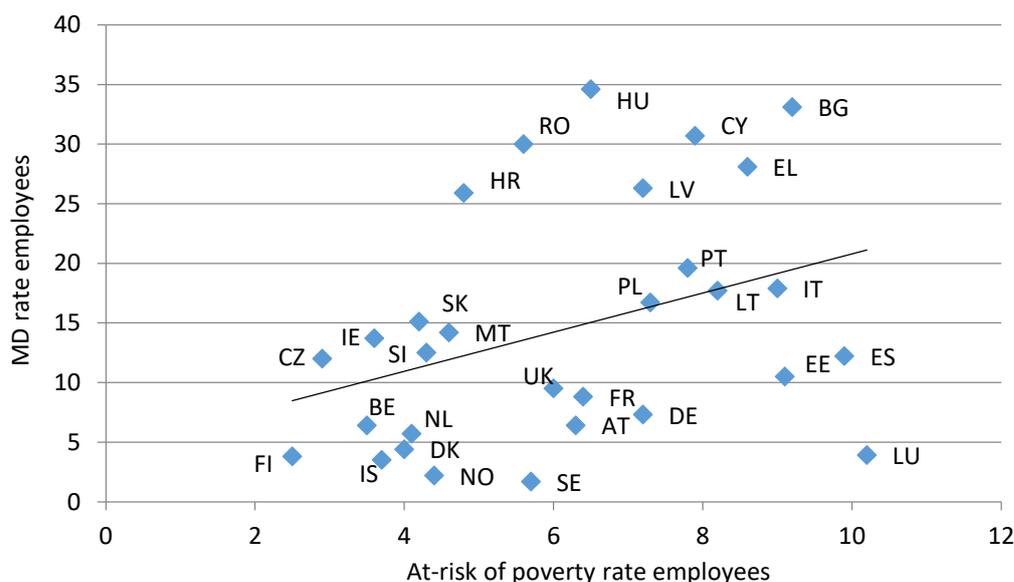
Source: EU-SILC 2014, own calculations.

Figure 10. Correlation AROP and MD among the self-employed (only income from self-employment), individuals aged 18-64, 2014 (r=0.060)
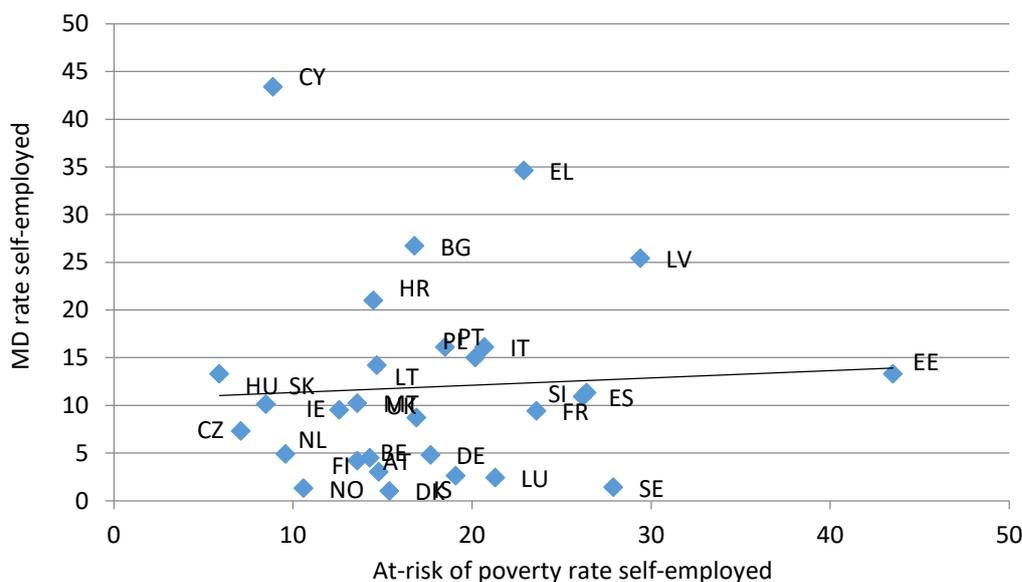
Note: Romania is not included as an extreme case that influenced overall correlation level. Including it gives a correlation of r=0.480.
Source: EU-SILC 2014, own calculations.

Summarizing the results of our analysis of the self-employed, we find that the self-employed in Europe generally face significantly higher income poverty risks than employees. The self-employed constitute a very mixed segment of the workforce and the within-group inequality is quite significant. One group that emerges as being particularly at-risk of poverty are own-account workers. Against a background of 'disruptive trends' highlighted in the introduction, there has been increasing concern about the rise of self-employment, especially own-account work which is particularly at risk, as indicated above. Our research shows that these concerns are founded, to some extent, which warrants further attention.

3.2   Clarifying the policy conundrum

3.2.1   Positioning

The emphasis of the Michel I government has been on jobs creation (its slogan was 'Jobs jobs jobs!'), and the main instrument to accomplish this has been the 'tax shift': a reduction in social security contributions for the employer and for the employee, which favours low incomes. This is similar to the 'work bonus' that already exist and also has the goal to 'make work pay' and to increase the incentive to work.

In the policy trilemma (Figure 11), we explore two options: one is to increase out-of-work benefits, or to complement wages with benefits (e.g. negative income taxes). In the graph we move from a situation in poverty N to the position G, where work covers only part of the income. The other stylized measure is to make work cheaper and more rewarding through tax reductions. This would increase demand to point F, and for a higher wage, more workers will be willing to work. However, both solutions come at a cost to the government: either a direct cost for social spending, or an indirect cost through reduced income from taxes, which is larger to the extent that there are deadweight loses, and the increase in employment does not take place. There is a lot of debate in Belgium on whether or not the policy measures are the cause for the job growth in recent years, or whether the country has actually been performing worse than other similar economies. If this was the case, the direct expenditure might have been a better policy choice.

**Figure 11. The policy trilemma: the case of government intervention**
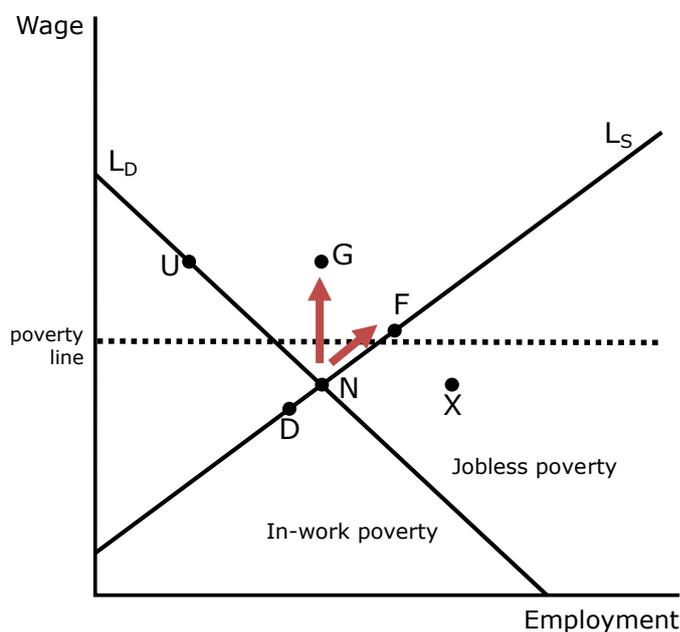
We have evaluated the principle behind this reasoning, and the relation between in-work benefits and out-of-work benefits (the 'policy conundrum') in two working papers, examining a) financial incentives for the long-term unemployed (WP3), and b) tax-benefit forms and the anti-poverty marginal benefit of public funds (WP4). For both cases, data were derived from the European Union Statistics on Income and Living Conditions (i.e. EU-SILC) and fed into the tax-benefit micro-simulation model EUROMOD. With EUROMOD, it is possible to calculate net incomes, given

gross incomes and personal and household characteristics. EUROMOD is used to obtain the counterfactual net income distributions in which policies from one year are applied to another year, and the observed distributions. With EUROMOD, financial incentive measures can be calculated (by modelling what the level of the household income would be for different levels of hours worked, including zero hours).

This approach is used to further clarify the common policy approach of 'making work pay'. As indicated above, in dealing with poverty, policy-makers have argued that employment offers the best protection against poverty. While this observation is generally supported by empirical research, multiple policies can be used to encourage (increased) labour market participation. Regardless of the policy, however, research has shown that the gain of (increased) labour market participation has to be large enough to offset the costs. Especially for groups such as the long-term unemployed, the difference between out-of-work incomes and in-work compensation has to be considered. Raising out-of-work benefits to avoid social exclusion, for example, may reduce employment chances; and this effect would need to be compensated by increasing compensations for workers.

In Belgium, several policy measures have recently been adopted that follow this logic of encouraging (increased) labour market participation as a means to tackle poverty. The 'work bonus' is one example of such measures. Other important tax-benefit reforms included increases in unemployment benefits (especially in 2009 and 2014), changes in social contribution reductions and social assistance, and a number of smaller changes in childcare benefits. Note that only households composed of couples or singles, with or without (non-working) children are considered in the analysis. The main changes in the parameters of the social contribution rebates are shown in Figure 12. As shown in the figure, these rebates start from a basic amount that remains constant until a certain level of full-time equivalent (FTE) monthly earnings, after which the rebate is withdrawn at a certain rate. That the rebate is based on FTE earnings imply that the withdrawal rate does not affect work incentives to work more hours; however, people working more than full-time do not receive a higher rebate; therefore, there is a kink at this point of the budget constraint.

Figure 12. Main changes in social contribution rebates

Source: EUROMOD

IPSWICH examines the effects of such measures on different groups, including long-term unemployed and part-time workers. In Belgium, the long-term unemployment rate is high (especially in comparison to other North-Western EU Member States), and many of them report household incomes below the at-risk-of-poverty threshold. In fact, among households with a member who has been unemployed for at least 12 months, the at-risk-of-poverty rate during period 2005-2012 was around 37% according to calculations based on EU-SILC, compared to 15% in the whole population. The long-term unemployed are, therefore, a particularly interesting group to examine.

3.2.2   Method

In the research on **financial work incentives and tax-benefit reforms**, both the intensive and extensive margins are considered. The *extensive margin* captures changes in the likelihood of taking up work as it measures binary changes from moving from unemployment into work. The *intensive margin* refers to the intensity of work supplied by those in work (e.g. extent to which part-time employed increase the numbers of hours they work in response to a measure).

Work incentives are then operationalised by the *participation tax rate* (PTR) and the *effective marginal tax rate* (EMTR). The participation tax rate measures the proportion of household earnings taken in tax and withdrawn benefits when a household member moves from unemployment to employment and is thus linked to the extensive margin. This is equivalent to one minus the difference between in- and out-of-work household net incomes in relation to the potential gross earnings of that household member. This is illustrated in the following equation:

$$PTR = \frac{(hh.\,tax - hh.\,benefits)^{in} + (hh.\,benefits - hh.\,tax)^{out}}{gros\;earnings}$$

$$= 1 - \frac{hh.\,inc.^{in} - hh.\,inc.^{out}}{gross\;earnings}$$

PTR takes into account household incomes but represents an individual measure. That is why it is calculated separately for each (working) partner in a couple: one time modifying the earnings of one partner, keeping constant the income sources of the other, and then vice versa.

The EMTR follows the same logic as PTR, but for increasing work intensity: it measures the proportion of household earnings taken in tax and withdrawn benefits when a household member increases her hours of work by 5%. This measure is useful to investigate the impact on the intensive margin.

Next to this focus on PTR and EMTR, we analyze tensions between work incentives, redistribution and net revenues by reviewing the tax-benefit reforms adopted in period 2005-2014 on the basis of the poverty gap index reduction per euro of net revenue (or 'anti-poverty marginal benefit of public funds') achieved by these reforms. The poverty gap index is defined as the mean poverty gap across the whole population (Ravallion, 2017). This measure is estimated empirically for those in the bottom of the income distribution, by estimating the effect of reforms on both the poverty gap index and net revenue, and subsequently calculating the ratio between them. The poverty gap index reduction is also calculated accounting for the labour supply reactions that reforms induced (derived with PTR and EMTR, as explained above). This exercise is done for households with members available for the labour market in the bottom half of the income distribution.

To isolate the poverty and revenue effects of reforms from the environment in which they operate, these two dimensions are decomposed using the *counterfactual decomposition framework* of Bargain (2012). Decompositions compare poverty and revenue indicators based on the income distribution of 2005 and based on a counterfactual distribution in which the policies of 2014 are applied to the population of 2005. More specifically, by applying different policies to the same population, the *policy effect* is derived. By comparing the counterfactual distributions simulating and not simulating labour supply responses, the *policy-driven behavioural effect* is obtained. By applying the same policies to different populations (already including policy responses) *other effects* are obtained.

A similar empirical strategy is used to assess **financial incentives and tax-benefit reforms**. In the study of financial incentives for the long-term unemployed, the *baseline model* consists of a micro-economic framework with two types of goods: 1) consumption and 2) leisure. In its basic form, working is generally associated with higher levels of consumption (and income) and lower levels of leisure than not working. This means that changes in labour supply can be decomposed in *substitution and income effects*. Substitution effects are captured by changes in PTRs and EMTRs; income effects by changes in the log income. This baseline model is further enriched with variables to control for time-variant elements or their initial levels.

To study the effect of changes in PTRs on the likelihood of taking up work, a *first difference logit model* is used. With a logit model, we can capture the probability of transitioning from unemployment into employment (introduced in the model as a binary dependent variable). By taking first differences, we can control for unobserved time-invariant heterogeneity such as individual characteristics. This model is then further complemented with transition fixed effects, regional changes in employment rates by age and education, income changes, a dummy variable for people unemployed in the previous year, interaction effects, as well as region and age. To estimate EMTRs, a similar approach is used. The main differences between the two models are that, in this case, the tercile in the initial hours' distribution is added and that the change in the EMTRs is instrumented (this is done to account for potential endogeneity).

The decomposition exercise, without including labour supply responses, reveals that policy effects have decreased net revenue as well as poverty. To understand which specific tax-benefit components drove policy effects, the proportional contribution of each tax-benefit component is assessed, based on the household work intensity. This exercise shows that policy effects were stronger for households with jobless members and that policy effects have been mainly driven by unemployment benefits. To analyze the effect of policies on the evolution of work incentives, two approaches are used. The first approach involves focusing on a selection of hypothetical household to remove compositional effects. The second approach consists of analyzing the evolution of the average incentive for different policies.

Figure 13 illustrates the effect of policies on the evolution of work incentives for a selection of different households. At the top left corner, we show the evolution of PTRs by unemployment benefit recipient type. We see that the evolution of PTRs was similar for singles and head of households, while PTRs increased in 2009 for cohabitants (due to large increase in unemployment benefits for this category). In the top right corner, we see that PTRs have evolved somewhat similarly for people working for different levels of hourly wages, except in 2006. This household correspond to a cohabitant and thus the curves are generally driven by increases in unemployment benefits. The somewhat different evolutions in 2006 are due to the expansion of social contribution rebates which made work pay more at medium and low FTE earnings. Moving to the bottom left corner, we do not see many differences between a single person with or without children, except in 2007. This was due to the introduction of the special mean-tested supplement for single-parents which for specific earnings levels could affect how much work paid. Lastly, in the bottom right corner, we see the evolution of EMTRs. The increase in social contribution reductions in 2006 had a small impact on EMTRs. The increase in EMTRs for people with high hourly wages in 2011 was caused by special social contributions based on taxable income. More specifically, the brackets for these contributions were not uprated during the whole period and this hypothetical household happened to cross the exemption limit in this year.

Figure 13. Policy effects on work incentives of hypothetical households, 2005-2014
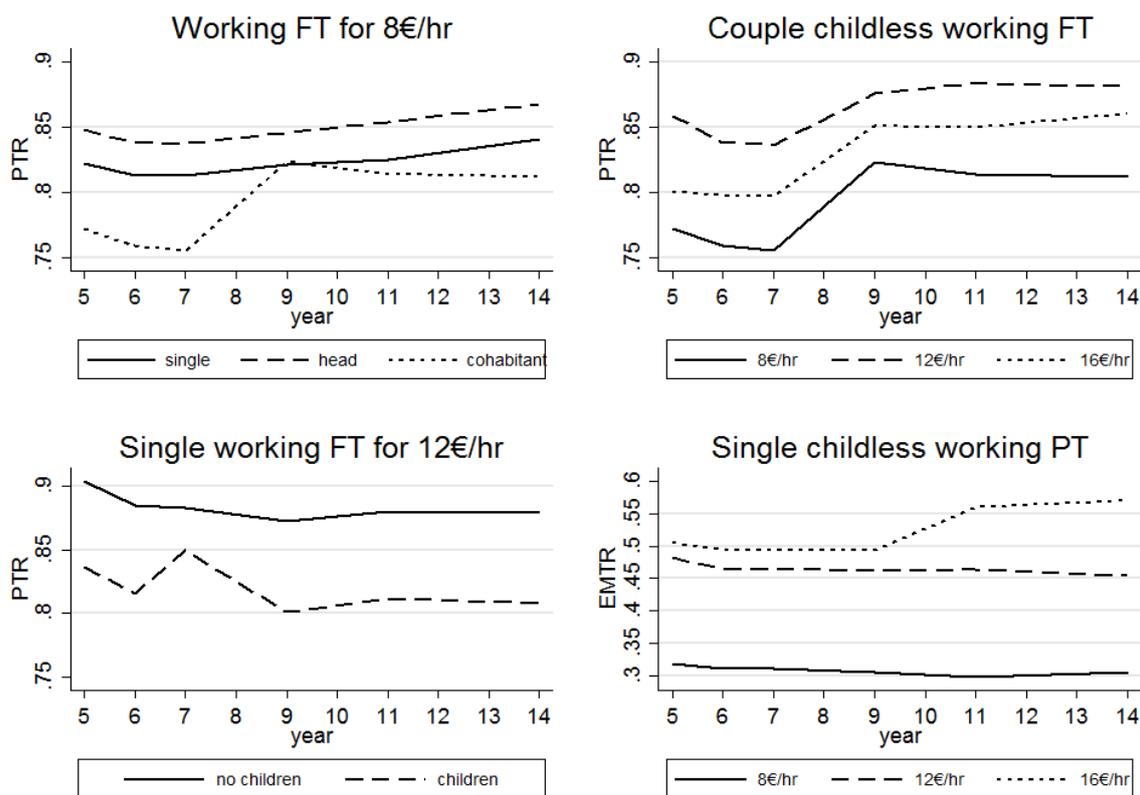
Note: we analyzed hypothetical household formed by singles and couples, with and without children, with different hourly wages, and here present some selected results. Full-time (FT) means working 38 hours per week, while part-time (PT) 30. Families with children have two children of 7 and 14 years old. The analyzed cohabitants have working partners.
Source: EUROMOD's Hypothetical Households Tool (HHoT)

The decomposition exercise is further complemented with *regression analysis*, to explore the relation between reform-driven changes in budget constraints and labour participation. A first regression links the probability of being employed to individual PTRs (instrumented to account for omitted variable bias), year fixed effects and other controls. A second regression connects the probability of being employed to net-of-PTR earnings, which is the net gain in euros of transitioning to employment. Once these relationships have been estimated, the probability if being employed or unemployed under the policies of a given year can be predicted. Also expected incomes, taxes and benefits can be calculated and fed into the decomposition analysis.

3.2.3 Results

Focusing on financial incentives for the long-term unemployed, the likelihood of transitioning from unemployment into more than a half year of employment is examined. The likelihood of making such a transition without specific policy measures in place stood at 9% over the period 2005-2012. When the initial level of work incentives is included into the model, the level of the PTRs indicates that a transition into employment implies that, on average, 76% of the potential earnings would go to taxes and withdrawn benefits. In addition, it has to be noted that 93% of the long-term unemployed relied on unemployment benefits, whereas 7% was dependent on social assistance, a combination of unemployment benefits and social assistance, or neither of the two.

The effect of changes in PTRs on the likelihood of taking up work are then evaluated in the regression analysis. Regression results show that a 10 percentage point increase in the PTR lowers the likelihood of transitioning from unemployment to over half a year of employment by 3.7 percentage points. This effect is sizable given that the baseline probability of this transition was 9%. People not unemployed the whole previous year and from Flanders were more likely to change employment status. Elderly people were less likely to do so. These results are robust across different estimation models. Based on these results, it is clear that potential substitution effects, driven by changes in the difference between the incomes obtained when working and not working, affect the likelihood of taking up work among the long-term unemployed. Raising out-of-work incomes (i.e. the unemployment benefits) would thus need to be combined with increases in in-work compensations. To offset these surges in expenditure, the targeting of current in-work compensations based on full-time equivalent earnings could be increased, or progressive tax credits based on actual earnings could be raised. This, however, implies that the EMTRs of some people would rise.

Turning to the part-time workers, a similar approach is used. As a starting point, the level of the EMTRs is analyzed. The EMTRs levels reveal that if a household member had worked 5% more hours in period 2005-201, on average, 53% of the potential earnings would have been taken in taxes and withdrawn benefits. Regressions for these workers on the impact of changes in the EMTRs, however, return no statistically significant results. Combined with the findings for the long-term unemployed, this might leave some room to compensate increases in out-of-work transfers with changes in in-work transfers.

When considering tax-benefit reforms more broadly between 2005 and 2014, the results suggest that these reforms reduced the poverty gap index in €0.09 for each euro of net revenue decline per person in the bottom half of the income distribution, when labour supply reactions are not accounted for. This reduction in poverty with a concomitant increase in budget deficit was mainly due to large increases in unemployment benefits and augmentations in social contribution reductions and child benefits. When labour supply reactions are taken into account, the poverty gap index reduction stood at €0.05. At a broader level, results show the difficulty of dealing with a social trilemma: reducing poverty, while not discouraging work nor running large public deficits. Furthermore, 'other effects' also decreasing net revenue and are running against the pro-poor effects of policies. This implies that anti-poverty strategies inevitably have to also address other drivers of rising income inequality.

3.3 Institutional barriers against low-wage work and wage inequality

3.3.1 Positioning

Another belief by the Michel I government and previous governments was that wage costs in Belgium relative to trading competitors were too high and, since the monetary route to devaluate the currency cannot be used, 'internal' devaluation should take place through the forced non-application of wage indexation, following a study on the employment effects of this mechanism (Konings, Van Aarle, & Vandeweyer, 2012). The non-application is equal to a nominal wage freeze

and a real wage decline. Moreover, a stronger ideological opposition and the politicization of collective bargaining continue to target the institutional structure of collective bargaining in Belgium (Van Herreweghe, Vandekerckhove, & Van Gyes, 2018; Vandekerckhove, 2018a). One consequence is that the 'Wage Norm', which is the upper bound for wage growth that is negotiated at the national level for all sectors, has been made stricter so as to avoid any divergence from the wage developments in the neighbouring countries (Van Gyes, Van Herreweghe, Smits, & Vandekerckhove, 2018).

The idea from the perspective of the policy trilemma is that wages had evolved to a level where the unemployment rate is not internalized by the social partners that set wages in collective bargaining agreements (point U). Similarly, the abolishment of youth minimum wages below the national minimum wage has been scaled back in terms of wage costs to the employer (this is in line with the previous paragraph). On the other hand, other countries like the UK and Germany have made the opposite movement by introducing a national minimum wage in 1999 and 2014, following social concerns in the workforce and academic literature that minimum wage are not necessarily harmful to employment.

Figure 14. The policy trilemma: the case of collective bargaining
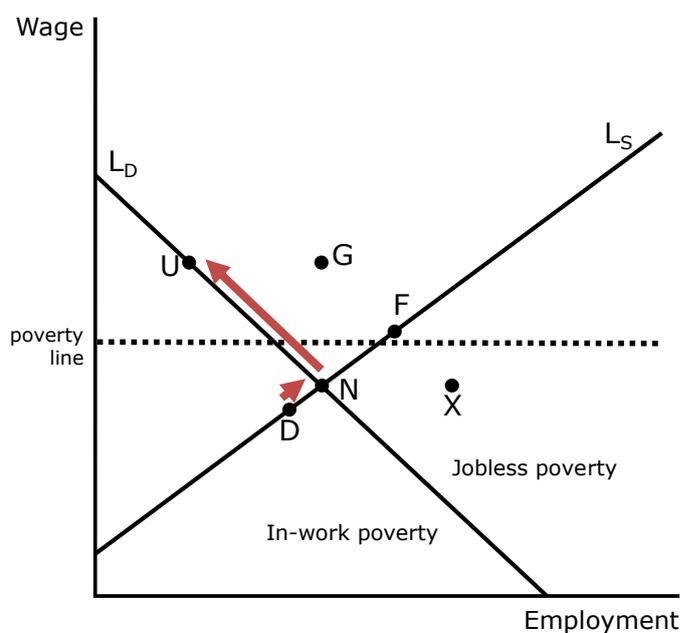
Working Papers 5, 6 and 7 expand on the role of collective bargaining in reducing inequalities on the labour market. WP 7 in particular discusses the effect of centralized wage bargaining on converging wage trends between sectors and simultaneous wage evolutions across the wage distribution. It examines whether trends such as a dualization of the workforce or job polarization, for example as technological progress not only increases job demand in low-paid sectors, but also because of a more elastic supply of workers through migration or virtual platforms, would tilt the labour supply curve to point X, at risk of poverty (Autor, 2015).

3.3.2 Method

We use quarterly administrative wage data from the National Social Security Office for the period 1996-2015, sourcing from a sample of 20% of all workers, and tracing these workers over time. The wage concept is the full-time equivalent wage, which can be compared to the low-wage threshold of two thirds of the median wage in the private sector. The same minimum wages apply to temporary agency workers, but their workplace is not known by the social security administration, so we had to discard this group from the analyzes. As these workers are not only in short-term, nut also in low-paid jobs, estimates will underreport the number of low-wage workers.

The collectively agreed wage levels are gathered in the new Belgian minimum wage database (BMW-database), combining minimum wage information from the Ministry of Labour (minimumlonen.be and the ICL index of conventional wages) and from HR service provider Acerta. The database covers 44 of the largest joint committees from 2000 onwards. It holds information on 1370 wage changes, of which 77% includes wage indexations, 23% includes real wage increases, 15% are real wages increases, and 85% are percentage wage changes. The ICL index was used to extend the time series backwards to the period 1996-1999, based on the wage settlements available in the Acerta data.

We investigate three questions related to collective bargaining: the employment effects of minimum wage changes, the distributional effects of minimum wages, and converging or diverging wage trends related to multi-level collective bargaining.

There is a big and inconclusive debate on the employment effects of minimum wages (Neumark, 2017; Neumark, Salas, & Wascher, 2014; Schmitt, 2013). To add more perspective, we follow two strategies. The first approach is a regression of the total employment in the sector and the number of low-wage workers on the relative minimum wage or Kaitz index (Brown, 1999; Kaitz, 1970). This is the ratio of the minimum wage over the median in a sector, or the difference between the logs, and it represents the bite of the minimum wage in the (latent) sectoral wage distribution. Because sectors may have persistent differences in wage levels, minimum wages, and wage dispersion, we should not rely on pooled OLS, but need to use fixed effects. Moreover, as there is a possible feedback loop between employment levels and minimum wages, where one explains the other, we want to instrument the minimum wage. We propose three different instruments: two natural instruments based on a) whether the wage change was an indexation or a real wage change on the one hand, and b) based on the evolution of consumer prices and the different impact on wage evolutions by sector on the other hand, and one technical instrument, the Arellano-Bond estimator (Arellano & Bond, 1991).

The second approach is to estimate the probabilities of worker flows in and out of the workforce caused by changes in the level of the minimum wage, using a probit model. Because of the ambiguity in minimum wage effects reported in this strand of research, as mentioned above, we also estimate the marginal effects by sector to see if there is variation within the economy. We split up the analysis for the total workforce and for low-wage work only.

The next step is to analyze the distributional effects of minimum wages. The question is up to which point in the distribution minimum wages have spillover effects, meaning that if minimum wages increase, percentiles where the minimum wage is not binding move along. For this, we follow the approach of Autor, Manning, & Smith (2014), who discovered two sources of bias in the seminal

model of Lee (1999): one is endogeneity bias as explained above for employment effects, to be solved by using fixed effects, the other is division bias, as both inequality and the Kaitz index are measure using the median in the denominator. The natural solution for this is to instrument the Kaitz index by the minimum wage level. In IPSWICH Working Paper 5, we discuss the econometric properties of this estimation and verify that effects are not due to compositional changes in the workforce. Finally, using the effects we have obtained, we can simulate the impact of minimum wage changes on the share of low-wage work in the economy by applying the effects on individual workers' wages depending on their position in the wage distribution.

In the analysis of the evolution of inequality, we use the same data to control whether sectoral wage growth diverges or converges, and what impact collectively agreed wage setting has on wage growth. For this we compare the effect of the Wage Norm, of sectoral wage floors, and of the margin between both – a margin that can be used for company agreements or individual wage raises and should lead to more variation in wage growth. Because the growth of median wages is not the same as the median wage growth due to changes in the composition of the workforce, we examine both separately. As the median wage growth will be stronger than the collectively agreed wage growth because of seniority wage scales, we estimate this seniority effect for each sector, taking into account worker's abilities, and subtract it from the wage changes. The models show that this is indeed the best approximation of collectively agreed wage changes.

3.3.3   Results

Figure 15 shows the rate of low-wage work, defined as full-time equivalent wages below two-thirds of the median, in the left panel. We see that there is some business cycle fluctuation, but the overall tendency – under regular working contracts – is downward. The right-hand panel shows inequality trends over time, which are – as has been noted before with respect to employment levels and the rate of in-work poverty in Belgium – very stable. Not only is the decile ratio (p10/p90) and the quintile ratio (p10/p80) almost constant, we also see that effective wages, i.e. labour earnings, hold constant ratios, which implies that there is no growing inequality in the number of working hours. This does not take away the possibility of inequality in the distribution of work over households (Corluy & Vandenbroucke, 2015, 2017). Finally, we also report the p40/p60 ratio, which are quantiles close to the median that should be driven apart if job polarization would cause a flattening of the wage distribution through less job demand for mid-paid jobs. This, as well, is not the case.

**Figure 15. The share of low-wage work in Belgium between 1996 and 2015**
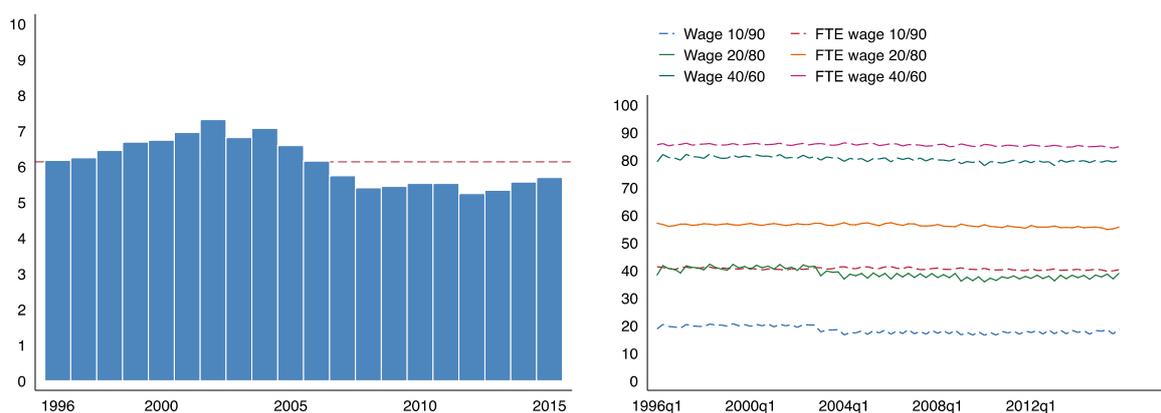
Source: National Social Security Office

The estimation of minimum wage effects on employment levels and job flows returned some ambiguous results. At the sector level, there is a strong negative effect on both low-wage work and overall employment numbers in the uncontrolled models. When adding fixed effects the estimates switch sign and the reported elasticities are high, in a number of models above one. This raises doubts on the quality of the proposed natural instruments. The preferred Arellano-Bond panel-IV however returns an insignificant effect of minimum wages on total employment, and a positive and significant elasticity of .896 on low-wage work.

The probit regression on the job transitions between sectors or in and out of (private-sector) employment return much smaller estimates. At the population level for the total workforce, we find net negative effects, but at the sector level, the moderating effect on in- and outflows is equal. Amongst low-wage workers only, the effects are substantially larger, and point to a net outflow out of the workforce when comparing year to year, but a net inflow on a quarterly basis, and net inflows into the sector that sets higher minimum wages at any interval. It therefore appears that minimum wages are attracting workers, although low-wage workers are more mobile across sectors and do have short employment spells of less than one year.

Figure 16 shows the marginal effects on the job flows among low-wage workers in four different setups for all sectors. If a sector is found above the upward dividing line, the net effect is positive. Insignificant results are set to zero, which often occurs on just one of both axis. This implies that in different sectors, minimum wages correlate with different job dynamics, and often there is no effect at all. Because of the smaller likelihood of quarterly job flows, the marginal effects in those models are smaller, while the yearly flows are more scattered and again confirm that the impact of minimum wages at the aggregate hides important variation between sectors.

Figure 16. Marginal effects of minimum wage changes on worker flows for low-wage workers
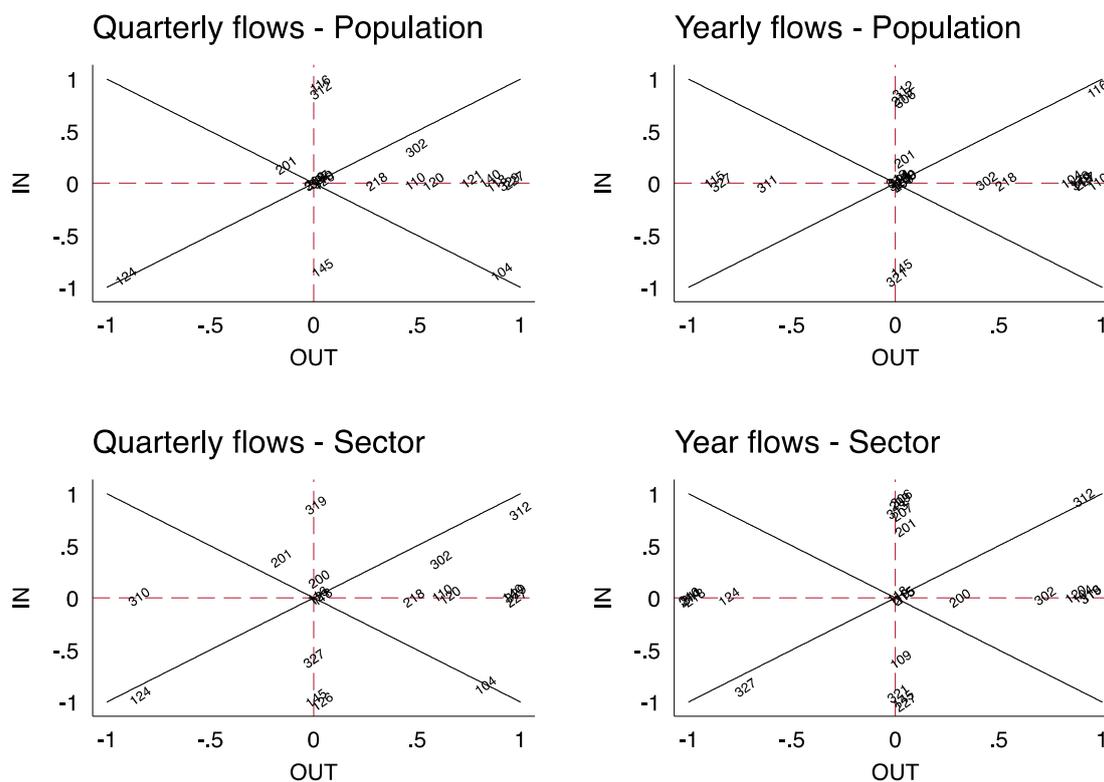
Source: National Social Security Office

Figure 17. Spillover effects of minimum wages across the wage distribution: OLS (left) and IV estimates (right)
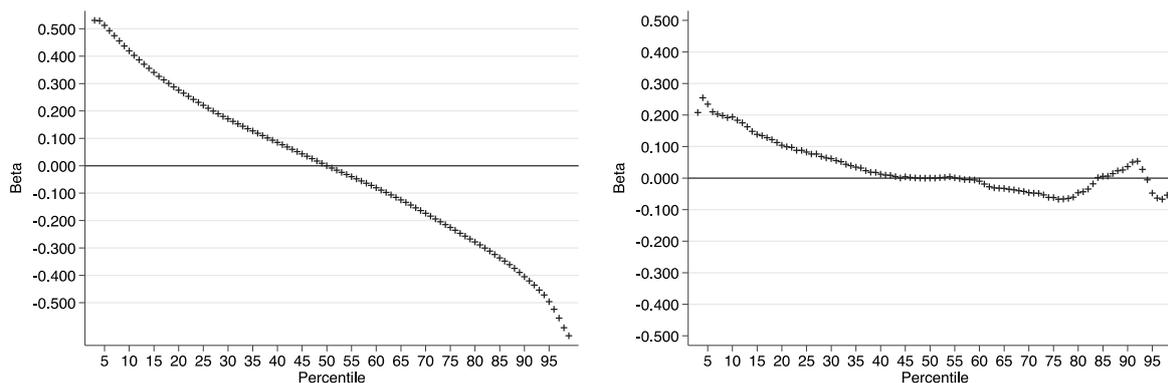

Data: National Social Security Office

The next question is whether minimum wages created spillovers. Figure 17 shows OLS and IV estimates, demonstrating that de endogeneity bias is very strong: it appears that sectors with high minimum wages have persistent narrow wage distributions, but also that sectors with low minimum wages have higher pay levels (notably the service sector). In the IV model, this effect is attenuated, but there is still, contrary to earlier research and perhaps specific to Belgium, a negative effect above the median, meaning that higher wages move closer to the median when minimum wages increase.

This might be a compensation for the increased wage costs that is part of the collectively bargained agreement.

In the last analysis on the effect of collective bargaining, we look at the divergence or convergence of wages between sectors. In the left-hand panel of Figure 18, we see that the variance in the median and mean wages across sectors is stable over time, but the variance increases when the price levels change, so the real mean and median wages of sectors actually converge. Moreover, if we look at the evolution of different quantiles within sectors (right-hand panel), it appears that the average evolution over sectors is synchronous at every quantile.

Figure 18. Annual growth of different quantiles: mean (left) and standard deviation (right) of selected sectors (1997-2015)
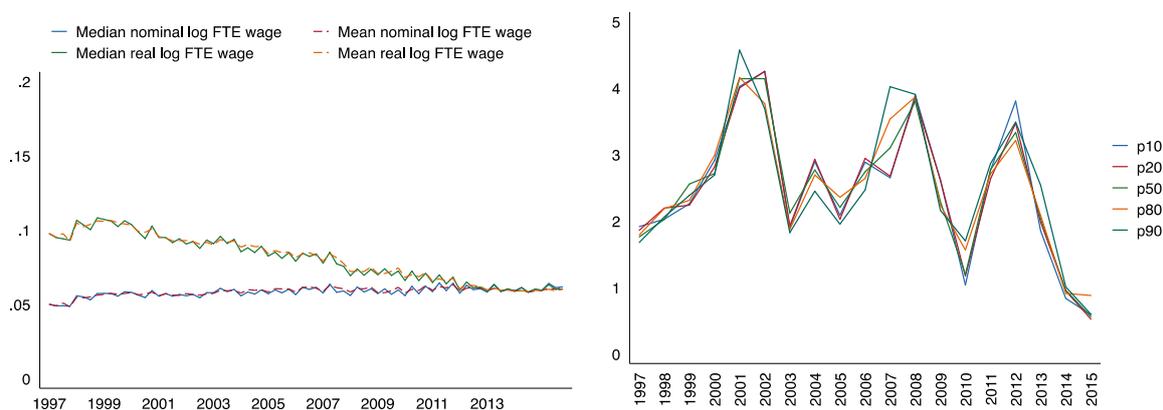
Data: National Social Security Office

From the analyses, we conclude that wage inequalities in Belgium are stable, but wage growth follows the business cycle and wage levels differ between sectors. Regressions of the wage growth on national and sectoral agreements show that collective bargaining explain those synchronous trends, and decreasing margins for company negotiations and individual negotiations are part of the real convergence between sectors, despite potentially diverging technological evolutions and productivity trends.

3.4   Workplace heterogeneity and wage discrimination

3.4.1   Positioning

The recent surge in migration from Africa and the Middle East into the EU has renewed controversies about the impact of a more diverse workforce on labour market outcomes of both native and foreign workers. Among the national workforce, there may be fears for losing job opportunities and downward pressure on the wages, which may be aggravated in the future as climate change, armed conflicts, persisting underdevelopment in the world and demographic growth are potential causes for further increases in the number of migrants. Future immigration could add to an already relatively high stock of foreign population in Belgium: only 62.3 % of the population between the ages of 18 and 64 is of Belgian origin.

At the same time, the integration of migrant workers in the labour market has not been smooth in Belgium and previous studies have pointed out a series of problems: the employment rate of foreigners is very low; there are entry barriers into the labour market, partly due to discriminatory hiring; there is some evidence for labour market segregation, with foreigners concentrated in low-

paying occupations, non-standard jobs (like part-time or interim work) and sectors, as well as other forms of discrimination (Baert, Cockx, Gheyle, & Vandamme, 2015; Martens et al., 2005). Through these different channels, some groups of foreigners are more likely to be exposed to the risk of poverty – even if they work.

Nevertheless, in Belgium series of laws and regulations exist that go further than other countries in protecting workers against discriminating practices, such as paying exceedingly low wages based on personal characteristics. Watchdog institutions such as UNIA take action against discrimination and monitor inequalities based on ethnicity, while other institutions like the Institute for the Equality of Women and Men do the same for gender inequality. There is an ongoing debate on the use of 'mystery shoppers' to take legal action in case of discrimination at the shop floor or in recruitment procedures.

Figure 19. The policy trilemma: the case of ethnic pay gaps and gender pay gaps
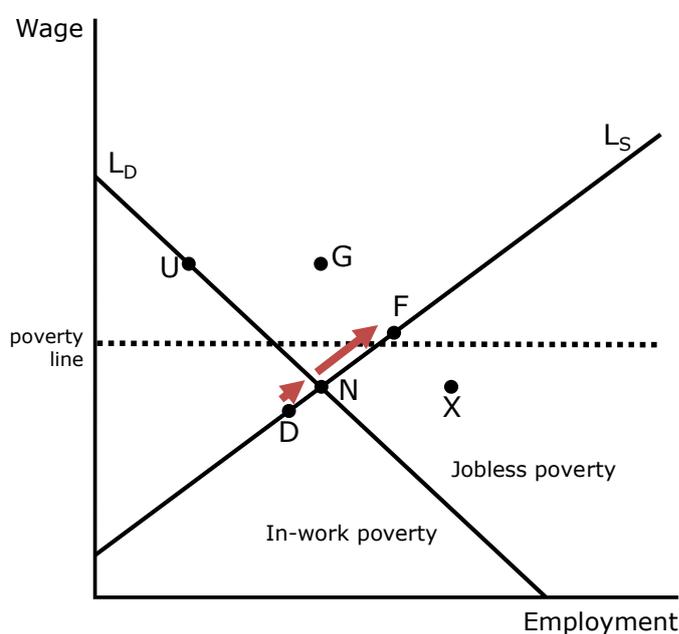
In this project, we make a methodological distinction between segregation and discrimination. The strict definition for discrimination in the labour market is not being paid equally for equal work. Segregation can take place on the basis of differences in objective characteristics, such as human capital, which may also stem from discrimination outside of the labour market. Going back to the conceptual framework of the project using the figure below, strict discrimination pushes wages below the equilibrium, and hinders higher wage claims by the migrant workforce (point D). Segregation, on the other hand, means that there is a migrant labour market with equilibrium wage N, at risk of poverty, and a labour market for nationals with equilibrium F, with higher wage levels driven by a higher demand as, for example, skills and productivity levels would be higher. It is particularly important to understand that the magnitude of those differences depends on the composition of the migrant workforce.

Working papers 8 and 9 investigate whether there is indeed discrimination on the Belgian labour market, and to what extent a growing heterogeneity of the workforce has an impact on wages.

3.4.2   Method

Our empirical analysis is based on two large datasets spanning the period 1999-2010. The first dataset is the Structure of Earnings Survey (SES), which covers all firms operating in Belgium that employ at least 10 workers and with economic activities within sections C to K of the NACE nomenclature (Rev. 1). SES contains information provided by human resource departments on the characteristics of a firm (e.g. sector of activity, number of workers, level of collective wage bargaining) and its employees (e.g. age, education, gross earnings, paid hours, gender, occupation, etc.). SES provides no financial information and has, therefore, been merged with a firm-level survey, the Structure of Business Survey (SBS). This survey carries information on financial variables such as firm-level added value and gross operating surplus per hour.

All variables in the combined SES-SBS are provided by the firm's management and hence more precise than self-reported employee or household surveys. The SES does not provide information on workers' origin. This information (i.e. nationality at birth, country of birth and current nationality) has been taken from the National Register (NR) and merged by Statistics Belgium to the SES-SBS data.

The earnings measure in the SES corresponds to total gross wages, including premia for overtime, weekend or night work, performance bonuses, commissions, and other premia. Work hours represent total effective remunerated hours in the reference period (including paid overtime hours). The firm's added value per hour in the SBS is measured at factor costs and based on the total number of hours effectively worked by the firm's employees.

Our final sample consists of an unbalanced panel of 9,430 firms and 555,963 individuals, yielding 30,355 firm-year-observations during the 12-year period covering 1999-2010. It is representative for all medium-sized and large, privately controlled firms employing at least 10 employees within sections C to K of NACE Rev. 1, with the exception of large parts of the financial sector (NACE J) and almost the entire electricity, gas, and water supply industry (NACE E).

On the basis of this dataset, a measure of workplace diversity is constructed. In the IPSWICH project, we have developed a more nuanced measure of workplace diversity than previous work. The standard approach is to consider two groups: those that are born within the EU (or outside of the EU but with a European nationality); and those of non-EU origin. This essentially boils down to assimilating EU citizens to Belgian workers. Figure 20 compares the wages of workers from the EU and those from outside of the EU. The latter earn, on average, lower wages than "native" Europeans (of which 94% are Belgians and the rest originates mostly from France, Italy, Germany and the Netherlands). During the 2010s, the average hourly wage gap between these two groups was around 11%. The figure further distinguishes between male and female workers of EU and non-EU origin. The average hourly wage is the highest for EU men (€16.3) and lowest for non-EU women (€13.4). On average, EU women and non-EU men earn roughly the same (around €14.25).

Figure 20. Distribution of hourly wages by immigrant status and gender

gross wages SBS 1999-2010, excluding outliers
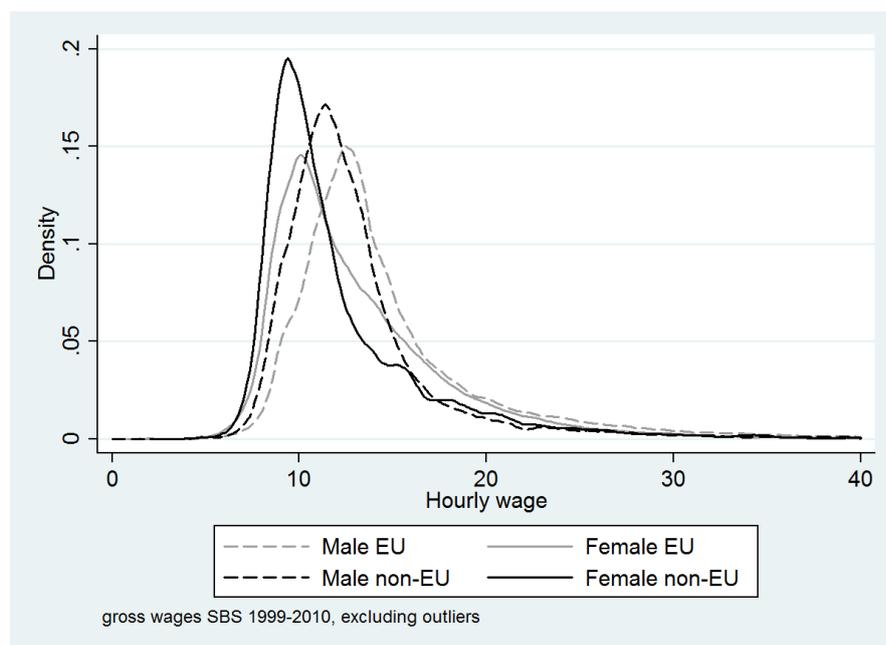
Source: SES-SBS

In this context, we wanted to investigate what factors might influence the productivity and wages of foreigners, focusing in particular on the immediate work environment: being the only non-Belgian employee corresponds to a completely different reality than being employed in a firm with hardly any Belgians at all. What is more, a more accurate understanding of the diversity within firms should account for similarities and differences in terms of economic development in a more nuanced way that the EU vs. non-EU distinction.

To address these issues, we have developed an entirely novel approach based on the conversion of the qualitative information on individuals' countries of origin into an aggregate firm-level diversity indicator based on UNDP's Human Development Index. The latter is a standard harmonized measure of cross-country variations that is available for virtually all countries in the world. Figure 21 shows this indicator applied to the data: the polynomial line is the diversity index, which goes to zero in a firm with only Belgian nationals, and reaches a maximum where about half of the workforce is Belgian, suggesting that in firms with even less Belgians, other nationalities become again dominant and lower the degree of diversity.

Figure 21. Firm-level average Euclidean distances and shares of Belgians
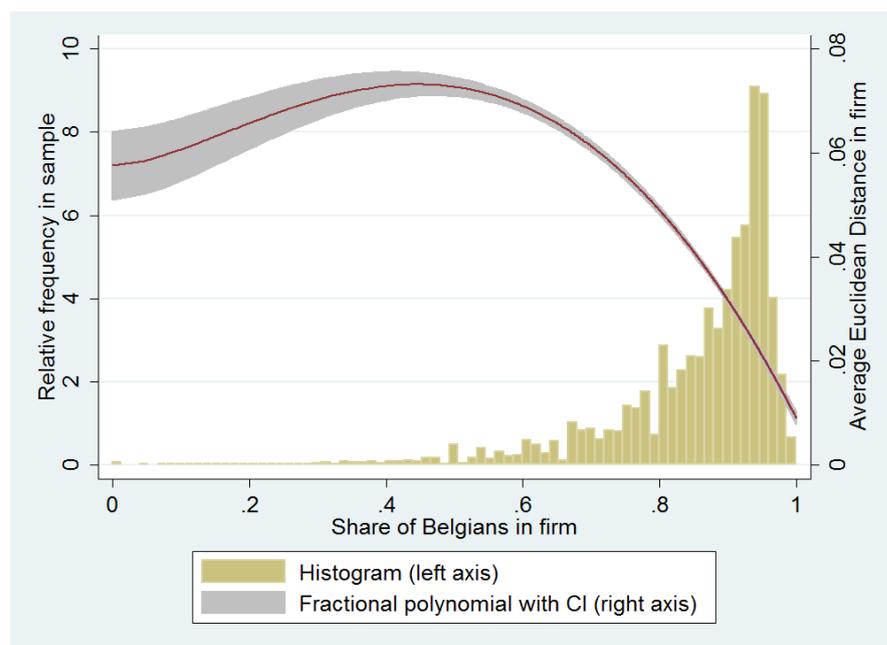
Source: SES-SBS

As a following step in the analysis, we attempt to isolate the discrimation effect from differences in productivity. The increasing availability of firm-level matched employer-employee data facilitates this type of exercise. Traditionally, Oaxaca-Blinder (1973) decompositions are used to measure discrimination. More recently, an alternative method was developed by Hellerstein et al. (1999) and refined by Vandenberghe (2011a,b) and van Ours and Stoeldraijer (2011), among others. This method is based on the separate estimation of an added-value function and a wage equation at the firm level: the added-value function yields estimates for the average marginal product of each category of workers (natives, migrants etc.), while the wage equation estimates the respective impact of each group on the average wage paid by the firm. The logic behind this approach is the following: estimating both equations with the same set of explanatory variables allows comparing the parameters of the (average) marginal product and the (average) wage.

In this project, we build on the approach developed by Bartolucci (2014), which is inspired by this new method of Hellerstein et al. (1999) but comes with a number of advantages. First, the functional form of the productivity equation which underpins the model does not have to be specified under this approach, but is still directly based on firm-level productivity data. Second, it neither assumes perfect competition in the labour market, nor a linear relationship between wages and productivity (or, in other words, it allows for non-unitary wage-productivity elasticities). Third, the approach produces a measure of wage discrimination against immigrants that is robust to labour market segregation.

The wage equation proposed by Bartolucci (2014) is similar to that in the Hellerstein-Neumark model, but directly estimates a parameter for the logarithm of the average firm-level productivity:

$$\log(\overline{w}_{j,t}) = \alpha_j + \beta \log(\overline{p}_{j,t}) + \gamma I_{j,t} + \lambda X_{j,t} + \varepsilon_{j,t}$$

where the dependent variable $\log(\overline{w}_{j,t})$ is the logarithm of the average hourly wage in firm j in year t; the variable $\log(\overline{p}_{j,t})$ is the logarithm of average hourly productivity; I_{jt} is the proportion of

immigrants and γ the parameter that captures wage discrimination; X_{jt} is a vector containing a set of observable characteristics of firm j and its labour force in year t.

In addition to this wage equation, we estimate a second equation that separates the proportions of male immigrants, female immigrants and female natives (respectively denoted as IM_{jt}, IW_{jt} and NW_{jt} – male natives are the reference category):

$$\log\left(\overline{w}_{j,t}\right) = \alpha_j + \beta \log\left(\overline{p}_{j,t}\right) + \gamma_{IM}\ IM_{j,t} + \gamma_{IW}\ IW_{j,t} + \gamma_{NW}\ NW_{j,t} + \lambda\ X_{j,t} + \varepsilon_{j,t}$$

In this way, we can derive the impact for each of these specific groups, in comparison to male natives.

When it comes to the estimation of these equations, researchers can rely on several methods. Basic pooled OLS estimators of productivity models have been criticized for their potential "heterogeneity bias" (Vandenberghe 2013). This bias results from the fact that both firm productivity and mean wages depend on firm-specific, time-invariant characteristics that are not measured in micro-level surveys (i.e. that we cannot observe in our dataset). Such unobserved firm characteristics may simultaneously affect the firm's added value (or wage) and the composition of its workforce.

To overcome this issue of unobserved firm characteristics, earlier empirical work has used firm-level fixed-effects. This approach has been used in estimations of wage differentials between male natives and male immigrants in a model with unobserved firm characteristics (Aydemir & Skuterud 2008). Adding firm-level fixed effects to the model, however, is insufficient to address potential endogeneity of the explanatory variables. In order to tackle both issues, we use a GMM-IV specification in first differences with instrumental variables (Black & Lynch, 2001; Daerden et al., 2006).

3.4.3 Results

Table 5 shows the results for the regressions with the standard diversity measure. The most basic model is presented in column (1), which shows a negative effect of the share of non-EU workers on the log average wage. We find that, when accounting for individual and job characteristics in column (2), the majority of these observed wage differentials is due to the segregation of foreigners into occupations and sectors with relatively low wages. Part of the wage gap might of course result from differences in labour productivity, for instance when foreigners have lower language skills. Yet, the fixed effects regression in column (5) shows that not all of the overserved wage differences between EU and non-EU workers can be explained in this way (Kampelmann & Rycx, 2016a, 2016b). Despite Belgium's strong anti-discrimination legislation, this means that – in addition to strong and persistent segregation – there is some wage discrimination against immigrants.

The wage gap between women and men similarly cannot be reduced to mere productivity differences. In fact, when compared to the native-immigrant gap, there is arguably even less of a theoretical case for productivity differences between men and women to begin with. Interestingly, foreign women do not cumulate the wage penalties associated to gender and origin (i.e. no double discrimination is found in our estimations). Foreign women are faced with roughly the same wage penalty as native women. A possible explanation for this result might be that origin is of lesser

importance among women than among men. Indeed, the educational profile of women with foreign origin resembles closely the one of native women, whereas this is not the case for men.

Table 5. Firm-level wage-setting equation without gender-immigrant interaction

Log av. hourly wage	OLS (1)	OLS (2)	OLS (3)	OLS (4)	Fixed-effects (5)	GMM-IV (6)
Labour productivity	–	–	–	0.10*** (0.01)	0.01** (0.00)	-0.00 (0.00)
Share of non-EU workers[a]	-0.24***[i] (0.02)[j]	-0.02 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.02* (0.01)	-0.07 (0.06)
Share of women	–	-0.19*** (0.01)	-0.20*** (0.01)	-0.17*** (0.01)	-0.09*** (0.03)	-0.13** (0.05)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Individual and job characteristics[b]	No	Yes	Yes	Yes	Yes	Yes
Sectors and regions[c]	No	No	Yes	Yes	Yes	Yes
Firm characteristics[d]	No	No	No	Yes	Yes	Yes
Observations	23712	23712	23712	23712	23712	8333
Adjusted R^2	0.06	0.63	0.65	0.70		0.30
Within R^2					0.36	
Between R^2					0.61	
Underidentification test[e]						0.00
Weak identification test[f]						68.4
Overidentification test[g]						0.37
Endogeneity test[h]						0.54

Data source: SES-SBS 1999-2010. a) Omitted reference: share of EU workers. b) Individual and job characteristics include share of workers younger than 40 years, share of 8 occupational groups (reference: service occupations); 3 educational levels (reference: ISCED 1-2); share of fixed-term contracts; share of workers with more than 5 years of tenure. c) Sector and regional controls include 9 sectors (reference: manufacturing) and 3 regions (reference: Flanders). d) Firm controls include the logarithm of firm size, logarithm of capital and a dummy for firm-level collective bargaining. All regressions include year dummies. e)) Underidentifcation test reports p-value of Kleibergen-Paap rk LM statistic. f) Weak identification test reports Kleibergen-Paap rk Wald F statistic. g) Overidentification test reports p-value of Hansen J statistic. h) Endogeneity test shows probability that endogenous regressors can actually be treated as exogenous. i) ***,**,* significant at 1, 5 and 10% levels, respectively. j) HAC standard errors in parentheses.

Certain institutional factors, such as firm-level collective bargaining and smaller firm sizes, tested in other estimations, appear to attenuate wage discrimination against foreigners, but not against women. Overall, our research suggests that wage discrimination against immigrants remains a problematic issue on the Belgian labour market, just as the discrimination against (native and foreign) women.

Using the more advanced metric developed in this study, our results suggest again that foreigners are primarily strongly segregated into low-paying jobs and that there is some wage discrimination. The discrimination against foreigners is particularly prevalent in firms that are very diverse in terms of countries of origin. We interpret this finding that it is not diversity *per se* that sparks a mechanism of discriminatory wage setting, but rather levels of diversity that lie far above the composition of the average firm.

A central contribution of our research is that we go beyond previous studies in acknowledging not only the relevance of diversity in the Belgian labour force, but also *the diversity among foreign labour market participants.* The starting point of our investigation was the observation that "being foreign" confounds a range of contrasting realities with rather different economic consequences for both firms and individual workers: the category "foreigner" can refer to a high-skilled corporate expat from a neighbouring EU country, but also to a minimum wage earner from developing countries with poor formal education. Even within the EU, there are still considerable differences in terms of education and productivity, so it is worthwhile to distinguish between immigrants from countries whose overall development is closer to Belgium from those that are more removed.

4 RECOMMENDATIONS

Although the level of in-work poverty in Belgium is comparatively low, the number of working poor needs to be closely monitored to prevent that it increases in the future, a trend that has already been found in several other EU Member States. This notion was the starting point of the IPSWICH project, which examined the incidence of in-work poverty in Belgium, as well as the mechanisms in place that manage to contain the number of working poor in the country. The IPSWICH project focused on the dynamics at the labour market, investigating the effects of contract forms, taxation and wage incentives, minimum wages and collective bargaining, and (ethnic) diversification of the workforce.

The IPSWICH project stresses the distinction that needs to be made between *current* in-work poverty, and *future* in-work poverty. This leads to an important paradox: the same measures and institutions that cannot further decrease in-work poverty nor alleviate jobless poverty today, may bolster poverty issues in the future if they are given up. In other words: caution is advised when advocating policy changes to reduce overall poverty, as this may increase in-work poverty without alleviating current in-work poverty nor overall poverty level. However, even though the incidence of in-work poverty is low, this nevertheless implies that a share of the working population is faced with poverty and a targeted approach is advised.

Within the Belgian context, it is recognized that having a job is the best protection against poverty, and this is supported by empirical evidence, even if work by itself is not necessarily sufficient to provide for the family needs. While Belgian policy makers understandably focus on job creation, we stress that those jobs should not come at any price. In fact, our research suggests that the main risk factor for in-work poverty is the incidence of atypical contracts or non-standard work, which includes temporary or part-time work. In those cases, research confirms that additional income sources, from the family or the state, are needed. Increasing flexibility in the labour market would thus shift the duty to provide sufficient income from the employer to household members or the state, effectively increasing taxes. We emphasize that while this is a valid policy option, which is even at the core of the Swedish Rhein-Meidner type of social-democratic welfare state, flexibilization is not a free lunch and it implies a bigger state to guarantee the same social standard. From an economic perspective, this also requires a tax on more productive industries to subsidize less productive industries. It is clear that over time, such systems will also be under pressure, certainly if social cohesion and solidarity are decreasing.

In the IPSWICH project, we have analyzed the nature of the Belgian labour market, which is strongly institutionalized through collective bargaining and functions independently from the state, but within a legal framework and benefiting from political and administrative support. The long-run stability of the wage distribution, in contrast to other countries, and the low share of working poor could be related, directly and indirectly. Workers receive decent wages, but there also is a stronger protection of the middle class that can act as a buffer against household poverty and precariousness, and which funds the social security system. Policies oriented at alleviating poverty based on a discrete measure, for instance the 60% threshold, may therefore overlook the larger distributional importance of fairness in the distribution of income. There is a scope for further research into these more complex longitudinal micro- and macro-level insurance mechanisms.

Besides safeguarding the distribution of wages at aggregate level, collective bargaining further creates fairness in the sense that there is "equal pay for equal work". Another way of formulating this idea is that there is an objectification of remuneration, based on tasks, occupations and the value of a function, and not on the personal characteristics of the workers (e.g. gender, ethnicity) or the individual negotiation power, all of which prevent discrimination between workers, also within the same firm.

This is not to say that there are no reasons for concern. While traditional groups that were at risk of poverty, such as the low-schooled, are less numerous but more precarious, immigration will remain a challenge, and we see that increasing diversity at the workplace may put pressure on wages. Taking an insider-outsider perspective, workers with discontinuous careers remain outsiders who do not fully benefit from the virtues of work. Furthermore, a substantial number of workers is found in low-wage jobs and may not be motivated to further progress in work. Finally, while the short-term unemployed may behave rationally and respond to work incentives, there are hard to reach groups who are only loosely connected to the labour market, and not helped by minimum wages, tax reductions, or job creation. Often those linear instruments (wage rates, tax rates, EPL) fall short in tackling the issue of existing, almost residual, in-work poverty. This is because the first beneficiary of policy changes will not be the people who are most at risk of poverty – for example because work incentives attract the short-term, but not the long-term unemployed, or because minimum wages affect secondary breadwinners. To further reduce in-work poverty below the current level, targeted and almost 'tailor-made' solutions would be needed in very diverse fields: health care, family support, motivational training, integration.

The main focus of the IPSWICH project, however, lies in transitions between jobs and unemployment, transitions between jobs, and changes in the workforce of companies. This research has demonstrated why in-work poverty is low and how decent working standards could be safeguarded in the future, in light of the challenges presented by 'disruptive trends' such as technological changes, globalization, and migration. The two uncontested causes of in-work poverty today, discontinuous careers and insufficient personal income in single-parent households, demonstrate the need for decent standards.

We conclude by suggesting a list of policy recommendations that follow from the research findings and highlight the strengths and threats in Belgium with respect to in-work poverty, ordered by theme.

Managing poverty risks in non-standard work

- To better protect temporary workers and agency workers against the risk of in-work poverty, fixed contracts (with the agency) and higher wages to compensate for flexibility would be helpful instruments. Temporary agency workers already imply higher costs for the businesses that hire them, but this difference does not go to the worker.

- Discontinuous careers and less than full-time full-year employment are risk factors for poverty. Policy should improve employment security and reduce inequality in working hours. Policies and institutions that ensure a smooth transition between jobs or between unemployment and employment should be identified and fostered.

- Because non-standard workers form a heterogeneous group, it would be difficult to implement policies that fit the group as a whole. The research shows differences in the at-risk-of-poverty and material deprivation indicators for temporary workers, part-time

workers and the self-employed. As a result, there may also be limits to the levels of solidarity that can be mustered within the group. Additional research on the causes of poverty and deprivation among the self-employed is necessary, to attain more insight into how these issues could be circumvented.

- Further research is needed into more appropriate indicators to measure poverty, both at the household level but also individually, in order to avoid the gender bias.

Improving work incentives and rewards

- To maintain the work incentive, changes in out-of-work benefits and in-work compensations should be linked. If out-of-work benefits are raised to combat jobless poverty, tax reduction or higher minimum wages should increase along.

- To offset surges in expenditure that result from increasing work incentives, the targeting of current in-work compensations based on full-time equivalent earnings could be increased, or progressive tax credits based on actual earnings – as they exist in other developed countries – could be raised. Although this would increase the effective marginal tax rates of some people, this might have less of an effect in hours worked, as was shown for the case of part-timers.

- Future research should study the effects of making individually-based social contribution rebates more targeted to low-income households. This would require taking into account the work incentives for (potential) second earners.

Coordinating the labour market

- Multi-level collective bargaining, including a national minimum wage and sectoral wage floors should remain the basis of wage setting in Belgium. This is because collectively agreed minimum wages are adjusted to the economic market of each industry, which explains the negligible effects on employment. Wage floors protect against precariousness and in-work poverty and should therefore not only be enforced in the formal economy, but minimum wage jobs should also replace informal work and bogus self-employment.

- Work should guarantee a decent living standard and minimum wages and employment protection legislation contribute to this. The harmonization of job categories creates further transparency on employment conditions. Complex labour legislation, on the other hand, may increase uncertainty and lead to precariousness and in-work poverty.

- Single thresholds ('poverty lines') for either low-wage work or poverty hide larger distributional changes, such as job polarization, growing inequality, or extreme poverty. Policy makers should be aware that headcount poverty figures have these limitations, and that the full wage distribution contributes to ensuring individual worker's welfare and to financing social security.

- Collective bargaining may substitute for subsidized, sheltered employment such as service vouchers if the demand for the service is inelastic and labour legislation is enforced. Platforms of temporary or independent workers, whether virtual or tangible, should not be used to bypass social security. The question should be raised whether some forms of employment (e.g. the service voucher systems or the reduced social security contributions for young workers) should be subsidized, considering that across the board, wages grow at a similar pace.

Fighting discrimination

- Diversity should be approached as a multi-faceted labour market issue: "foreigners" are a very mixed group and policy interventions need to be targeted at those that are most likely to suffer from discrimination.

- Foreigners are subject to wage discrimination and this should be tackled; the labour market is strongly segregated, with non-Belgian workers, especially from outside the EU, being employed in low-paying jobs, occupations and sectors. Efforts to curb wage discrimination should, therefore, not divert the attention from the more structural and very substantial issue of segregation.

- Discrimination can be alleviated through stronger presence of collective bargaining and/or interventions aimed at avoiding or reducing the clustering of foreigners from countries with low economic development. For example, our research suggests that collective bargaining at the firm-level – like wage renegotiation in addition to national and sectoral wages – should be strengthened as it has the effect of curbing discriminatory wages.

5   DISSEMINATION AND VALORIZATION

The IPSWICH project included a number of dissemination and valorization tasks, which aimed to raise awareness of the project results and establish a three-way dialogue between the project network, the scientific community and the stakeholder community. In order to do so, the output of the project was presented in several ways, including different types of publications and meetings. A detailed overview of the dissemination and valorization activities is presented below.

Internal project meetings: three internal meetings were held (13/4/2016, 15/3/2017, 22/1/2018) which counted on the participation of representatives of all active project partners. These meetings were particularly important as they served to maintain a consensus about the objectives of the research project, to meet as an interdisciplinary team for constructive scientific discussions and the exchange of expertise in the respective phases of the project and to plan and develop the project valorization with respect to decisions made by at the follow-up committee.

Meetings with the follow-up committee: three meetings with the follow-up committee were held (13/6/2016, 19/6/2017, 18/5/2018) to set interim deadlines, follow up on the progress and delays, discuss the results and conclusions, and organize the final conference. The minutes of the follow-up committee meetings are attached to this report.

Final policy conference: On 27 September 2018, the final conference of the IPSWICH project was held in Brussels, at the BELSPO premises. This conference had a strong policy focus, as it aimed to disseminate the project results to and discuss its recommendations with participants from the scientific, policy and stakeholder communities. The conference began with a welcome note and introduction by the project coordinator, laying out the policy context and conceptual framework for the research. The first session consisted of four presentations by project partners on each of the different work packages and objectives, followed by initial remarks by two discussants (Henk Van Hootegem, director of Steunpunt Armoedebestrijding and Louise Callier of UNIA) and a Q&A session. This session was followed by two keynote presentations meant to complement the insights from the project, which are very structural in kind, with other approaches. Prof. dr. Ides Nicaise presented the ReInvest project, combining multiple paradigms in poverty research and quantitative and qualitative comparative work, and Sophia Hoornaert and Melek Sahin of Groep Intro explained how their organization activates people at risk of poverty. The final session of the conference consisted of a panel debate, with representatives from four political parties. The panel debate centred on several issues in the area of in-work poverty, including employment measure, fair wages, job quality, with a particular focus on the role of policy makers (both the government and social partners). The conference brought together 30 participants, including policy makers, researchers, social partners and social actors from the field of poverty, discrimination and equality programmes.

The presentations delivered by both project partners and keynote speakers at the final conference are available at: https://hiva.kuleuven.be/sites/ipswich/presentations. A forthcoming issue of *Science Connection* will feature an article on the conference (Lenaerts & Vandekerckhove, 2018a, 2018b).

Project webpage: a project website was developed and later merged into the HIVA KU Leuven website to guarantee the access to all working papers and various other documents and proceedings from the project. The goal is to further link the project to past and future research on the topic, and to highlight this on the HIVA KU Leuven website. The project website can be consulted through:

https://hiva.kuleuven.be/sites/ipswich
http://www.workingpoor.be

Working paper series: The IPSWICH project results in nine working papers, three more than originally foreseen in the list of objectives. To improve the quality, the papers have been peer reviewed within the consortium, and were discussed at the internal meetings. The list of papers is mentioned under 'publications' and papers are included in annex, as well as freely accessible on the website.

Policy notes: Building on the findings report in the working papers, three policy briefs were prepared on the most pertinent topics, which synthesize the core results and make them easily accessible to a non-expert audience. They have been circulated to the members of the follow-up committee and their networks. The policy briefs cover work incentives, discrimination, and minimum wages and collective bargaining. These documents are short and follow a similar structure (context, methods and data, key results, policy recommendations). All policy briefs are available on the project webpage.

Scientific dissemination: the working papers go through a cycle of conference presentations and submission for publishing in peer reviewed academic journals.

- May 26, 2016, Leuven: Poster-presentation Dag van het Onderzoek, Fair and flexible? The effects of institutional wage setting on wage dispersion, employment, and responsiveness in Belgium. (WP3 objective 4)
- June 19-26, 2016, Sigtuna: FISS-Conference: An Empirical Investigation of the growing symbiosis and contradiction with capitalism in rich European democracies. (WP2 objective 3)
- June 30, 2016, Dublin: Discussion of our preliminary findings during the Expert meeting on the "European Jobs Monitor", organized by the European Foundation for the Improvement of Working and Living Conditions (Eurofound). (WP3 objective 6)
- November 28, 2016, Den Haag: Presentation at the SCP/Eurofound Expert Workshop on In-Work Poverty: 'In-work poverty in Belgium: structure, trends and policy' (WP2 objective 1 and 2)
- November 30, 2016, Antwerp: CSB lunch seminar: The missing link between financial incentives to work and employment (WP 2 objective 3)
- October 20-21, 2016: Brussels: host country paper (Vandekerckhove & Knipprath, 2016) and presentation for the EU Mutual Learning Programme on "Tackling the Gender Pay Gap" (WP 3 objective 4 and 5)
- February 22, 2017: Brussels: Presentation for Decenniumdoelen (An active cooperation between 13 civil society organizations with the aim to reduce Poverty in Belgium): 'Werk voor lagergeschoolde mensen: lessen en vragen uit een vergelijkende analyse voor België en Nederland' (WP 2 objective 1 and 2)

- March 8, 2017: Amsterdam. AIAS and CSB expert seminar on a comparison between Belgium and Dutch social situation and social policy. The research consortium presented four contributions (by Ive Marx on the relation between the labour market and income inequality, Bea Cantillon on poverty, poverty reduction and social policy, Sem Vandekerckhove on recent changes in the labour market, and Guy Van Gyes on industrial relations).
- March 26-27, 2018, Manchester: peer review paper (Vandekerckhove & Pollet, 2018) for the EU Mutual Learning Program on "In-work progression – approaches and challenges" (WP 3 objective 4 and 5)
- October 23-24, 2018: Brussels: host country paper (Vandekerckhove, 2018a) and presentation for the EU Mutual Learning Program on "The organisation, outcomes, and effectiveness of social dialogue" (WP 3 objective 4 and 5)

Other valorization activities: in various networks, the research results of the IPSWICH project have been used for academic and policy purposes:

- The IPSWICH project has strongly inspired, with support of Torsten Müller of the follow-up committee, an European Commission grant project of the TURI network on the role of collective dialogue in Europe, where similar topics were explored in eight EU Member States based on qualitative interview with policymakers. The output of this project can be found on the website https://hiva.kuleuven.be/sites/cawie3. Of particular interest in light of the IPSWICH project are the Belgian case report (Van Herreweghe et al., 2018), the comparative report (Vandekerckhove, 2018b), and the research on inequality and poverty in Europe (Birindelli, 2018).
- Together with the Dynam-team at HIVA KU Leuven, we have worked on the data and expanded the data set with additional social security information. Besides an analysis of employment dynamics and institutional measures such as part-time economic unemployment (Struyven & Vandekerckhove, 2017), specific attention is currently being directed at the topic of service vouchers, leading to:
    o A spending review on service vouchers (The profile of service voucher employees in Flanders), consisting of two notes (work in progress)
    o A conference paper presented at the 2018 Annual Symposium in Labour Economics 2018 in Charleroi: "At work at all costs? The employment effects of the Belgian service voucher scheme." (Sam Desiere, Tim Goesaert)
    o A presentation during the SERV Academy on the topic of flexibilization on 14-11-2017, entitled 3Trends in flexibilisering op de arbeidsmarkt in België3.
    o The Labour Market Policy Thematic Review 2018: "An analysis of Personal and Household Services to support work life balance for working parents and carers – Belgium." (Sam Desiere, Tim Goesaert)

- A publication in Over.Werk (2018): "Zeer kortlopende jobs, een al dan niet vermeende trend op de Belgische arbeidsmarkt?" Over.Werk. Tijdschrift van het Steunpunt Werk, 28(1), 145-155. Leuven: Steunpunt Werk / Uitgeverij (Tim Goesaert, Ludo Struyven).

- A thematic review for the European Social Policy Network (ESPN) on "In-work poverty in Europe" (by Veerle Buffel of HIVA KU Leuven).
- Synergies between the ImPRovE project (FP7/2012-2016) and the tasks of objective 3 allowed further analysis and updates of working papers to be prepared for publication, resulting in three publications (one accepted, and two are entering a final stage before publication). Drawing on the framework established in this research, one paper looked specifically at the position of single parents.
    - Cantillon, B., Collado, D., & Van Mechelen, N. (2017 forthcoming). The Glass ceiling of poverty reduction. In: Cantillon, B. Hills, J., & Goedemé, T. (eds.). *Improving Poverty Reduction in Europe.* Oxford: Oxford University Press.
    - Cantillon, B., Collado, D., & Van Mechelen, N. (2017 forthcoming). The structural nature of inadequate social floors for single parent families. In: Nieuwenhuis, R. & Maldonado, L. C. (Eds.). *The Triple Bind of Single-Parent Families,* Bristol: Policy Press
    - Cantillon, B., Marchal, S., & Luigjes, C. (2016). Decent Incomes for the Poor: Which Role for Europe? *Journal of Common Market Studies, 55(2),* 240-256.
    - Collado, D.,, Cantillon, B., Van den Bosh, K., Goedemé, T., & Vandelannoote, D. (2017 forthcoming).The end of cheap talk about poverty reduction: The cost of closing the poverty gap while maintaining work incentives. In: Cantillon, B. Hills, J., & Goedemé, T. (eds.). *Improving Poverty Reduction in Europe.* Oxford: Oxford University Press.

Besides these activities, the project team has been in contact with experts from UNIA, the steering committee of Steunpunt Armoedebestrijding and other stakeholders, and has been consulted a number of organizations on the topic (including Statistics Belgium on measuring gender wage gap, the Central Economic Council on the organization of social dialogue, the RJV/ONVA on addressing discrimination between blue-collar and white-collar workers). Also, the project team suffered some brain drain – or extended its network - with the departure of project manager Guy Van Gyes who is now head of the department of Industrial Relations at the Federal Public Service Work Employment and Social Dialogue, and researcher Jeroen Horemans, who joined the administration of the State Secretary for Combating Poverty and Equal Opportunities Zuhal Demir.

Media advocacy: A final valorization strategy consists of media advocacy. Bilingual national press has been contacted and agreed to devote an article to the publication of the research. A press release to reach out to other media has been drafted in Dutch for commentary by BELSPO.

Prof. Ive Marx holds a regular column in the leading newspaper De Standaard where he discusses social and economical issues.

6 PUBLICATIONS

IPSWICH Working paper series:

- Horemans, J., & Marx, I. (2017). Poverty and material deprivation among the self-employed in Europe: an exploration of a relatively uncharted landscape (Working Paper No. 2) (p. 61). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Collado, D. (2018a). Financial work incentives and the long-term unemployed: the case of Belgium (Working Paper No. 3) (p. 28). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Collado, D. (2018b). Tax benefit reforms and the anti-poverty marginal benefit of public funds in Belgium (Working Paper No. 4) (p. 26). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Horemans, J. (2018). Atypical employment and in-work poverty (Working Paper No. 1) (p. 29). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Vandekerckhove, S., Goos, M., & Van Gyes, G. (2018). The effect of minimum wage spillovers on wage dispersion in a strongly institutionalized wage bargaining system. (Working Paper No. 5) (p. 26). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Vandekerckhove, S., Van Gyes, G., & Goos, M. (2018). Minimum wages and low-wage work in Belgium: an exploration of employment effects and distributional effects (Working Paper No. 6) (p. 29). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Vandekerckhove, S., Goos, M., & Lenaerts, K. (2018). The institutional pull towards intersectoral wage convergence (Working Paper No. 7) (p. 29). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
- Kampelmann, S., & Rycx, F. (2016). Wage discrimination against immigrants: measurement with firm-level productivity data (Working Paper No. 8) (p. 61). Leuven: KU Leuven - HIVA Research Institute for Work and Society.
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- Lenaerts, K., & Vandekerckhove, S. (2018a). Travailleurs pauvres et changements dans l'emploi, les revenus et la composition de famille. Rapport de la conférence de clôture du projet IPSWICH. Science Connection, 59, 35-38.
- Lenaerts, K., & Vandekerckhove, S. (2018b). Werkende armen en veranderingen in werk, inkomen, en de gezinssamenstelling. Verslag van de IPSWICH-slotconferentie. Science Connection, 59, 35-38.

Other working papers:

- Collado, D. (2018), Financial work incentives and the long-term unemployed: the case of Belgium, EUROMOD Working Paper Series, EM1/2018.
- Collado, D. (2018). Tax-benefit reforms and the anti-poverty marginal benefit of public funds in Belgium (Working Paper) (p. 30). Antwerp: CSB.
- Grinza, E.; Kampelmann, S & F. Rycx (2018), L'union fait la force? Evidence for Wage Discrimination in Firms with High Diversity. (IZA Discussion Paper No. 11520)
- Horemans, J. (2017). Atypical Employment and In-Work Poverty: A Different Story for Part-Timers and Temporary Workers? (Working Paper No. 17/01) (p. 32). Antwerp: CSB.
- Horemans, J., & Marx, I. (2017). Poverty and Material Deprivation among the Self-Employed in Europe: An Exploration of a Relatively Uncharted Landscape (Discussion Paper No. 11007) (p. 60). IZA.
- Vandekerckhove S., Goos M., & Van Gyes G. (2017) 'The effect of minimum wage spillovers on wage dispersion in a strongly institutionalized wage bargaining system.' Paper submitted for the 2017 ECINEQ conference.

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- Van Lancker, W. & Horemans, J. (2018). 'Childcare policies and in-work poverty.' In H. Lohmann & I. Marx (Eds.). Handbook of research on in-work poverty, Cheltenham: Edward Elgar.
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ANNEXES

- The executive summary in three languages (Dutch, French, English).
- The minutes of the three follow-up committees.
- The series of nine working papers (see 'Publications').
- Three policy notes (see 'Publications').