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Long-Term Unemployment and the Great Recession in the Netherlands: Economic Mechanisms and Policy Implications

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Abstract A decomposition of GDP changes during the Great Recession shows that a relatively large part of the economic shock in the Netherlands translated into unemployment. Wages absorbed a larger part of the shock in Germany, the UK, and the US. The Netherlands has faced more long-term unemployment than other countries, particularly in recent years. Long-term unemployed workers are on the margins of the Dutch labour market. Neither real wages nor the number of vacancies respond to an increasing rate of long-term unemployment. Long-term unemployment is for an important part a problem of older unemployed workers. In the Netherlands, 40 % of the long-term unemployed workers are over age 50, which is almost twice as much as in the EU and the US. We identify three possible avenues for labour market reform: unemployment insurance, employment protection legislation and active labour market policies.

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1 Introduction

The Dutch labour market suffered severely from the Great Recession. Unemployment increased substantially, from 3.1 % in 2008 to 7.4 % in 2014. Of particular importance was the surge in long-term unemployment, especially among older workers. It was 20 years ago that the Netherlands last experienced such a high rate of unemployment. Compared to many of its Northern European peer countries, the Netherlands had stronger unemployment growth following the Great Recession. This paper documents and interprets these recent developments in the Dutch labour market.

The Dutch labour market response to the Great Recession can be characterised by two distinct phases (Van den Berge et al. 2014). In the early phase, the rise in unemployment was relatively mild, but after the "double dip" in 2012, unemployment growth accelerated rapidly. Labour hoarding was an important factor behind the limited response of employment in the Netherlands in the early phase of the crisis, mostly fuelled by the tight labour market before the crisis and the existence of substantial financial reserves by employers. In addition, the large and still growing number of self-employed responded by reducing their income rather than becoming unemployed. The Dutch labour market was, however, less able to absorb the second recession, which resulted in high and persistent unemployment.

Long-term unemployment is of specific interest, since it may result in permanent damage to the labour force participation rate of the long-term unemployed become discouraged workers (Krueger et al. 2014; de Graaf-Zijl et al. 2015). Currently, more than one third of all Dutch unemployed jobseekers have been looking for work for over a year, of which a large fraction has been looking for a job for more than 2 years. Of specific interest is the high share of older jobseekers among the long-term unemployed; while the young unemployed typically only suffer short periods of unemployment before finding employment with a temporary contract, older displaced workers often end up in long-term unemployment.

This paper analyses how the drop in GDP affected the labour market and how it led to the rise in long-term unemployment (Sect. 2). Section 3 analyses to what extent Dutch long-term unemployed are on the margins of the labour market. Section 4 reviews current labour market policies in the Netherlands and discusses options for policy reforms. Section 5 concludes.

2 Long Term Unemployment in the Great Recession

This section investigates the extent to which the reduction in GDP over the period 2008–2013 resulted in long-term unemployment. We decompose the change

in GDP into changes in employment, profits and wages and show whether the reduction in employment was absorbed by shorter working hours, limited participation or resulted in higher unemployment and thereby also in higher long-term unemployment.

We use a decomposition technique to shed more light on the economic adjustment mechanisms at play during an economic recession.[1] This decomposition attributes the change in gross domestic product (GDP) to changes in employment, hours worked per employee, wage costs per hour, short and long-term unemployment and mixed income. Mixed income includes the income of self-employed, income from capital provision and profits.

According to the income approach of the national accounts, GDP (in market prices) is equal to:

$$p_y y = w\overline{L} + T + Z \tag{1}$$

where p_y represents the market price of real production y, w is the nominal compensation for every hour worked $\overline{L}$, T represents the total nominal value of taxes and subsidies and Z measures the total nominal operating surplus and mixed income.[2] GDP growth can be decomposed accordingly:

$$\overset{\circ}{y} \approx \omega_{l,-1} \left\{ \frac{\overset{\circ}{w}}{p_y} \right\} + \omega_{l,-1} \overset{\circ}{l} + \omega_{T,-1} \left\{ \frac{\overset{\circ}{T}}{p_y} \right\} + \omega_{Z,-1} \left\{ \frac{\overset{\circ}{Z}}{p_y} \right\} \tag{2}$$

in which $\omega_{l,-1}$, $\omega_{T,-1}$ and $\omega_{Z,-1}$ are the respective shares in GDP of labour income, taxes and subsidies and operating surplus, as measured in the previous period.

In order to investigate the labour market responses of the Great Recession, the contribution of the compensation of employees can be further decomposed. Total hours $\overline{L}$ is the result of hours per employee h and the number of employees L^d: $\overline{L} = h\,L^d$. Labour demand is the product of labour supply L^s(in persons) and the employment rate: $L^d = (1-u)\,L^s$. The unemployment rate u is the sum of short-term unemployment u^S and long-term unemployment u^L. Labour supply is the product of the total working-age population N and the participation rate q: $L^S = qN$. Applying these definitions and rewriting in terms of growth rates leads to:

$$\overset{\circ}{l} \approx \overset{\circ}{h} + \overset{\circ}{q} + \overset{\circ}{N} - \left\{ \frac{\Delta u^S}{1-u_{-1}} + \frac{\Delta u^L}{1-u_{-1}} \right\} \tag{3}$$

The decomposition is applied to annual data for 15 OECD countries (Austria, Belgium, Germany, Denmark, Finland, France, Ireland, Italy, Japan, the Netherlands, Portugal, Spain, Sweden, the UK, the US) for the period 1970–2013 (2014 in the

[1] Erken et al. (2015a) provides a complete derivation of the decomposition and an extensive description of data sources.

[2] Taxes and subsidies refer to charges on production and imports such as the value added tax, import tax and excises. Direct taxes such as corporate tax and income tax are not part of this term.

case of Germany and the Netherlands) taken from the OECD National Accounts. The main advantage of using the national accounts is the international comparability of the data series. The OECD Labour Force Survey is used for detailed employment data.

The analysis relating long-term unemployment to GDP is related to the literature on Okun's law (relating GDP growth and unemployment, see Van den Berge et al. (2014) for a recent application to the Netherlands) and Verdoorn's law (relating GDP growth and employment, see Klinger and Weber (2014) for a recent application to Germany). The advantage of the decomposition approach is that it puts the unemployment response to a GDP decline in a richer perspective, including the response of wages, productivity and labour supply. The complement to our empirical approach are structural models relating unemployment to economic growth. Recent examples in the DSGE-tradition are Galı et al. (2011) for the United States and Elbourne et al. (2015) for the Netherlands. These models are single country models, which limits the investigation of the heterogeneous labour market response to the severe demand shock in the Great Recession.

Figure 1 shows a break-down of the *cumulated GDP decline* over the period 2008-2013/2014, based on Eq. (2). In all countries, the recession translated into a reduction in employment and profits, whereas real wage costs continued to grow.

The decomposition shows considerable heterogeneity. In Spain, Portugal, Ireland, Denmark and the US, there was a relatively large contribution of decreasing employment to cumulative GDP losses. In the case of the Netherlands, Germany, Japan, Italy and Finland on the other hand the contribution of the employment decrease was relatively mild, due to labour hoarding and/or a drop in income of self-employed (mixed income). In these countries, the decline in operating surplus at the start of the recession may imply that firms sacrificed profits in order to avoid lay-offs and subsequent re-hires in the short-run.

Figure 2 decomposes the *cumulated negative employment effect*, based on Eq. (3). Again, there is considerable heterogeneity in how the labour markets in different countries mitigated the negative (cumulative) employment effect. Germany, Austria, Japan and especially Denmark showed large reductions in hours worked per employee. These countries have fairly generous short-time working schemes (see Hijzen and Venn 2011). Discouragement, measured by participation rates did not strongly contribute to the negative employment effects. Moreover, in some countries, the severity of the crisis even forced labour market entrance of people who were previously not active on the labour market, such as Italy and Spain.

The Netherlands stands out as a country where the reduction in employment largely translated into unemployment, combined with a limited reduction in hours worked per worker. During the Great Recession, Dutch long-term unemployment increased more than in the surrounding countries. Even though the rise was slower than the European average, it surpassed the increase seen in Anglo-Saxon and Scandinavian countries, France and Belgium. Particularly notable is the fact that the Netherlands was one of the few countries where in 2014 unemployment-and long-term unemployment in particular - continued to rise. The main reason was that the Netherlands struggled more than other Northern European countries with a second economic dip in 2012–2013 (de Graaf-Zijl et al. 2015). In fact, this prolonged increase in unemployment

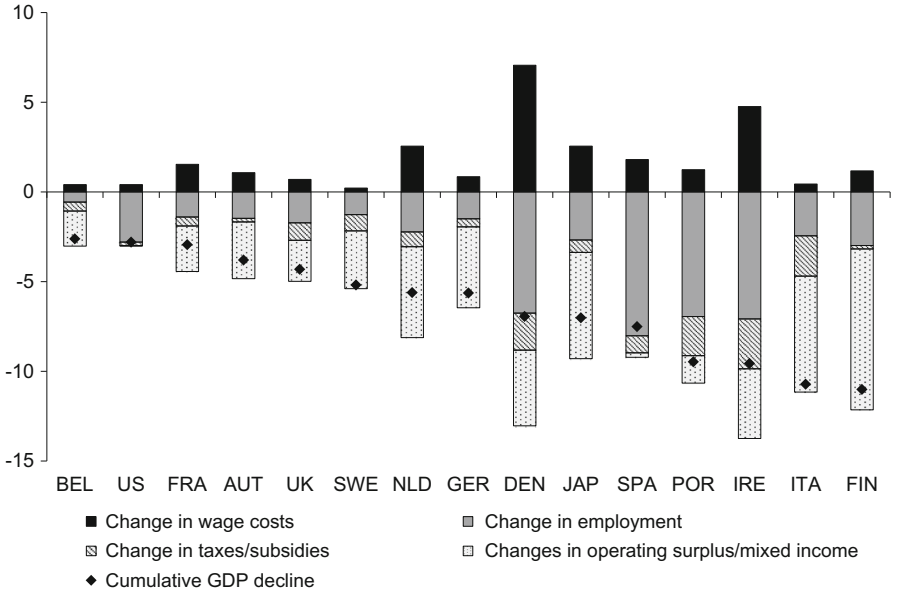

Fig. 1 Decomposition of cumulated GDP decline (2008–2013/2014) for selected number of countries. Contribution of components in percentage points

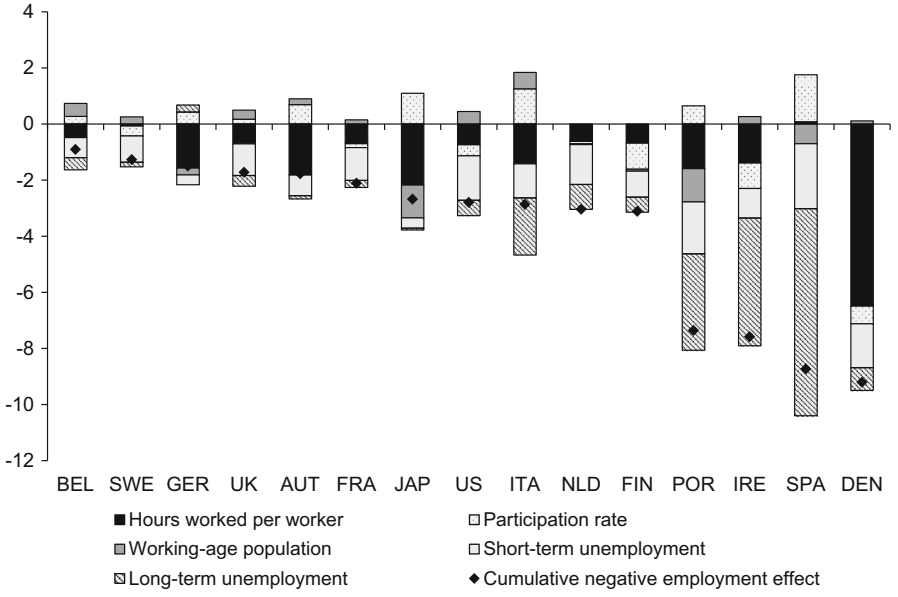

Fig. 2 Decomposition of cumulative negative employment contributions (2008–2013/2014) for selected number of countries. Contribution of components in percentage points

is more in line with such countries as Portugal, Ireland, Spain and to a lesser extent Italy, where a deep and long-lasting recession resulted in high rates of long-term unemployment.

2.1 Wages and Productivity

Figure 1 demonstrated that real wage costs *per hour worked* continued to increase despite the reduction in GDP. What matters for firms, however, is the unit labour cost. In order to assess the development of unit labour costs, we compare real wage cost with the productivity per hour worked. Figure 3 illustrates the development of real wage costs in the Netherlands and the development of productivity per hour, where labour productivity is measured as the HP-filtered real output per hour worked.

During both recession periods, real wage costs increased faster than labour productivity, which implies that unit labour costs increased. Stated differently, the decline in GDP did not translate into a negative contribution of real wage costs during the recession period or the subsequent years. This observation leads to the conclusion that wages were not an important adjustment mechanism during the Great Recession in the Netherlands. Figure 4 shows that this also holds for most other OECD-countries. The horizontal axis shows the wage costs adjustment measured as the difference between real wage costs per hour and structural real labour productivity per hour, cumulated over the period 2007–2013.

Fig. 3 Real wage costs per hour vis-à-vis structural labour productivity per hour in the Netherlands, 2005 = 100. Explanation: the length of the recession is determined by negative employment contributions to GDP development. The HP-trend for productivity is based on observations of real GDP per hour for the total sample period (i.e. 1970–2013/2014). We use a lambda of 100 to execute the HP filter

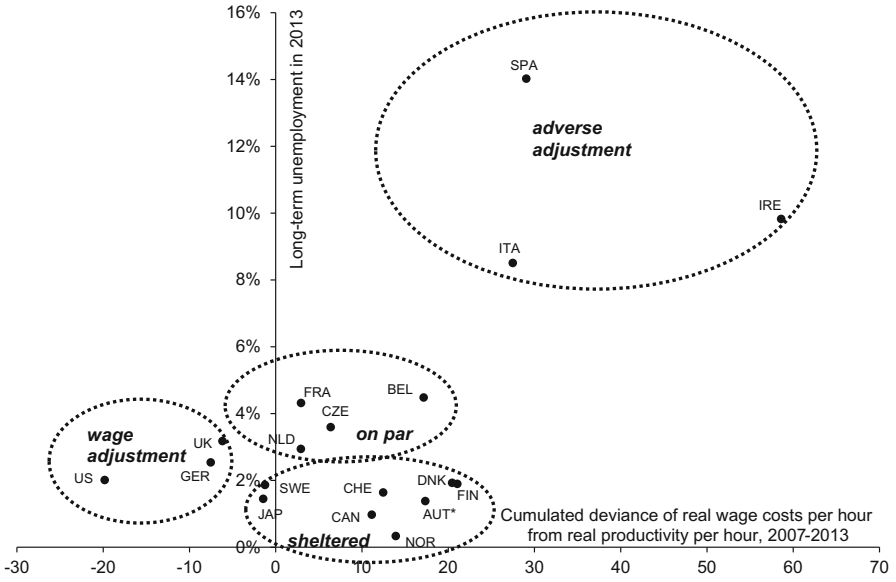

Fig. 4 Cumulated deviation of the real wage costs from structural real productivity over 2007–2013 (vis-à-vis the long-term unemployment rate (excluding self-employed) in 2013

Figure 4 relates the deviation of wages costs with labour productivity during the Great Recession to long-term unemployment in the aftermath of the recession period. Based on this simple correlation, there appear to be four different groups of countries:

1. *Wage adjustment countries (UK, US and Germany)*: these countries combined a relatively low level of long-term unemployment with a relative large decline in real wage costs as a result of lower structural productivity levels. The situation in Germany, however, was somewhat different than the situation in the Anglo-Saxon countries. In Germany wage costs were already below structural productivity levels when the crisis hit the global economy. There was therefore room for upward wage adjustments without significant erosion of competitiveness in the German economy. This was not the case in the US and the UK, where wage cost levels were (approximately) on par with the productivity level at the start of the crisis and the adjustment took place during the crisis.
2. *Countries where wage adjustment was on par with productivity (the Netherlands, France, Czech Republic, Belgium)*: this group contains countries with moderate levels of unemployment and wage costs which moved in concordance with structural productivity levels. These countries showed little real wage adjustments (via changes in productivity) in response to the Great Recession.
3. *Sheltered countries (Finland, Japan, Norway, Denmark, Canada, Switzerland)*: the sheltered group were those countries that showed a limited (i.e. Japan and Sweden) or a positive (Canada, Austria, Denmark, Finland, Switzerland, Norway) wage costs gap, but did not pay the penalty in terms of a high long-term unemployment level. One important reason why a positive deviation of wage costs from

structural productivity did not translate in a relative high level of long-term unemployment was that most of the countries are so-called "sheltered" economies. A deviation between wage costs and structural productivity within economies which are exposed to foreign competition will be penalized by a lower international market share due loss of competitiveness. Export subsequently drops, as well as demand for labour. This translates into higher (long-term) unemployment. Countries which produce largely for the national market (i.e. sheltered economies) are able to maintain a situation where wage costs (temporarily) deviate from structural productivity, since firms can pass on higher labour costs by raising prices, with smaller implications for employment.

4. *Adverse wage adjustment countries* (Italy, Spain, and Ireland): these countries showed a large deviation of wage costs from structural productivity, as well as a high level of long-term unemployment. Although each of these countries tells a different story, we elaborate on the case of Spain to exemplify the situation in this cluster. The problems with long-term unemployment in Spain related to a core problem on the Spanish labour market, being the pronounced insider–outsider divide. Workers under standard open-ended contracts are subject to high firing costs and are covered by collective bargaining agreements that protect wages and working conditions against inflation and adverse productivity shocks (Bentolila et al. 2012). As workers under fixed-term contract have little employment protection, adjustments to productivity and demand shocks are absorbed mainly by dismissal of temporary workers. When the crisis hit the global economy, Spanish unemployment reacted dramatically and shot up from 8.2 % in 2007 to a staggering 26.1 % in 2013. The long-term unemployment already was quite prominent in 2009, but the situation deteriorated rapidly in the period 2010–2013.

3 Long-Term Unemployed on the Margins of the Labour Market

This section provides empirical evidence that long-term unemployed put limited pressure on the wages and labour demand, which hampers their return to employment. The longer workers remain unemployed the weaker their ties to the labour market become. On the demand side, Kroft et al. (2013) argue that employers are likely to discriminate against the long-term unemployed, believing that long-run employment may well be the result of the worker's own lower productivity that has caused the longer spell of unemployment. On the supply side Krueger and Mueller (2010) argue that longer spells of unemployment increase the probability that a worker will become discouraged and search for work less actively.

We investigate whether the Dutch long-term unemployed are on the margins of the labour market in the sense that they put less pressure on wage inflation by estimating a Phillips curve that includes measures of both the short-run and long-run unemployment rates. This specification, also employed in Krueger et al. (2014), is as follows:

$$w_t - \pi_{t-1} = a + \beta_1 u_t^{duration<d} + \beta_2 u_t^{duration>d} + \epsilon_t, \tag{4}$$

where π is inflation and where $u_t^{duration<d}$ is a measure of the unemployment rate for those workers who were unemployed for less than d years, $u_t^{duration>d}$ is a measure

of the unemployment rate for those workers who were unemployed for more than d years. Unemployed exert downward pressure on wages if $\beta_i < 0$ for $i = 1, \ldots, 2$. For the United States, Krueger et al. (2014) find a significantly negative impact of short-run unemployment on real wages ($\beta_1 = -1.0$ with duration <1/2 year), but no impact of long-term unemployed (duration more than 1/2 year).

For the Netherlands, we estimate this equation for different demarcations of duration. The first column of Table 1 shows that the total unemployment rate exerts a negative though insignificant impact on real wages. In the other columns, the estimated values for short-run unemployment, β_1 with $d = 0.5$, 1 and 2 years, are significant (at 1 %-level), whereas the estimated coefficients on the long-run unemployment rate, β_2, are insignificant.[3]

It is interesting to note that the estimates for β_1, the coefficient on the measure of the short-run measure of the unemployment rate, follow a consistent pattern. The estimates become more negative as the value for d gets smaller, that is as the duration becomes shorter. This is consistent with the idea that workers who are only unemployed for short spells remain more closely tied to the labour market, whereas workers who remain unemployed for longer periods exert less influence on the labour market.[4]

The Beveridge curve reveals that unemployment and labour demand (number of vacancies) interact, as indicated by a significantly negative relation between the unemployment rate and the number of vacancies. For long-term unemployed workers in the United States, Krueger et al. (2014) argue that they are on the margins of the labour market, by showing that their number is insignificantly related to the number of vacancies. Either because more vacancies don't lead to a reduction in long-term unemployment or because a high unemployment rate doesn't induce firms to open more vacancies. We investigate whether this also holds for the Netherlands.

We follow Krueger et al. (2014) by adjusting the standard relation between vacancies and unemployment separating shorter and longer unemployment spells:

$$v_t = a + \beta_1 u_t^{duration<d} + \beta_2 u_t^{duration>d} + \epsilon_t, \tag{5}$$

where v_t is the fraction of vacancies relative to the sum of vacancies plus employment. We estimate this Beveridge Curve with Dutch data, with a quarterly sample from the first quarter of 2003 until the fourth quarter of 2014.[5]

Our estimation results in Table 2 confirm that long-term unemployed are on the margins of the labour market. For $d = \infty$ we obtain the standard Beveridge Curve, with a significant negative relationship between unemployment and vacancies. For short-term unemployment, all but one of the estimates of β_1 are significantly different from zero. The pattern of declining negative values for β_1 as d increases seen in the results for the real wage Phillips Curve is also present here. None of the estimates of the impact of the long-term unemployment rate on vacancies (β_2) are significantly different from zero.

[3] The Wald test rejects the Null hypothesis that $\beta_1 = \beta_2$, with the exception of $d = 3$.

[4] We are however unable to test the significance of this pattern in the estimates of β_1.

[5] See Luginbuhl (2015).

Table 1 Real Wage Phillips Curve, quarterly data

	d=∞	d=0.5	d=1	d=2	d=3
Wages					
a	0.40	1.90*	1.30	0.66	0.41
t value	0.47	2.54	1.75	0.94	0.52
p value	0.64	0.015	0.09	0.35	0.61
β_1	−0.25	−1.52***	−0.88**	−0.60**	−0.37*
t value	−1.49	−3.47	−2.90	−3.14	−1.83
p value	0.07	0.0006	0.003	0.002	0.04
β_2		0.35	0.53	1.16	0.67
t value		1.23	1.34	1.70	0.46
p value		0.89	0.91	0.95	0.67
Wald ($\beta_1 = \beta_2$)		−1.87**	−1.42*	−1.76*	−1.04
t value		−2.77	−2.18	−2.22	−0.66
p value		0.004	0.02	0.02	0.26

The t values and *p* values are based on Newey-West standard errors with the lag length determined by AIC
* significance at 95 % confidence level
** significance at 99 % confidence level
*** significance at 99,9 % confidence level

Table 2 Beveridge Curve in the Netherlands

	d=∞	d=0.5	d=1	d=2	d=3
Quarterly data					
a	3.59***	4.74***	4.33***	3.79	3.54***
t value	6.39	9.10	7.76	1.98	11.73
p value	0.0000	0.0000	0.0000	0.054	0.0000
β_1	−0.34***	−1.32***	−0.88***	−0.66	−0.57***
t value	−4.13	−5.66	−4.62	−0.84	−6.95
p value	0.0001	0.0000	0.0000	0.20	0.0000
β_2		0.13	0.34	1.00	1.73
t value		1.35	2.51	0.47	4.23
p value		0.91	0.99	0.68	1.0000
Wald ($\beta_1 = \beta_2$)		−1.44***	−1.22***	−1.66	−2.30***
t value		−4.90	−3.84	−0.57	−4.81
p value		0.0000	0.0002	0.29	0.0000

The t values and *p* values are based on Newey-West standard errors with the lag length determined by AIC, or when AIC fails, the lag length is set to one
* significance at 95 % confidence level
** significance at 99 % confidence level
*** significance at 99,9 % confidence level

We note that some of the estimates for β_2 are large. It could be argued that the long-run unemployment measures lag behind the short-run measures because a change in the job separation rate will initially influence only the short-run unemployment rate,

and a fraction of the change in the short-run unemployment measure will ultimately spill over into the long-run unemployment rate. Such a lag could in theory induce a spurious correlation with vacancies via the business cycle. This in turn could be responsible for the large positive estimates. But this is only half of the story. A change in the separation rate will typically correspond to a change in the job finding rate. As the job finding rate changes, the long-run unemployment rate will also be effected as more or fewer long-run unemployed are able to find a job as a result in the change in the job finding rate. As a result the long-run unemployment measures should also be immediately effected by the business cycle in the same manner as the short-run measures albeit less strongly so.

The Beveridge curve in Eq. (5) and the Phillips curve in Eq. (4) represent reduced form outcomes of supply and demand forces. In this sense we cannot claim that unemployment causes real wages or the vacancy rate to change. The reverse is of course also the case. For example, an increase in the number of job vacancies will tend to cause the unemployment rate to fall, a drop in real wages will likewise tend to result in a drop in the unemployment rate, and a fall in prices will increase the real wage, which in turn will generally result in a rise in the unemployment rate. But a finding of no significant relationships in the case of long-term unemployment indicates that long-run unemployment neither causes changes in real wages or vacancies, nor do real wages or vacancies have any influence on long-term unemployment. Our results therefore support the idea that the long-term unemployed become separated from the labour market.

4 The Aftermath of the Great Recession: Labour Market Reforms?

4.1 Long-Term Unemployment

Unemployment tends to fall when the economy picks up again. Unemployed workers who have kept strong ties to the labour market will benefit first. But not all groups will benefit equally from economic growth. Long-term unemployed workers in particular with weaker ties to the labour market may still have trouble finding a job. On the demand side, employers may discriminate against them, believing that long unemployment spells signal low productivity (Kroft et al. 2013). Especially older unemployed jobseekers may face discrimination by employers (Van Dalen et al. 2009, 2010). On the supply side, longer spells of unemployment discourage the individual from actively searching for a job (Krueger and Mueller 2010). Spells of long-term unemployment may persist and lead to detachment from the labour market if skills no longer match with firms' demands, if wages are higher than what firms want to offer, or if firms simply overlook the long-term unemployed.

The labour market for older workers may witness a weaker recovery than other parts of the labour market. The share of long-term unemployment concentrated among workers aged 55 and above has risen from 15 % in the early 2000s to 25 % in recent years (Fig. 5). This increase has already begun before the start of the recession in 2008. It coincided with a sharp increase in the labour participation of older workers. Labour participation between the ages of 55 and 64 has increased more rapidly over the past

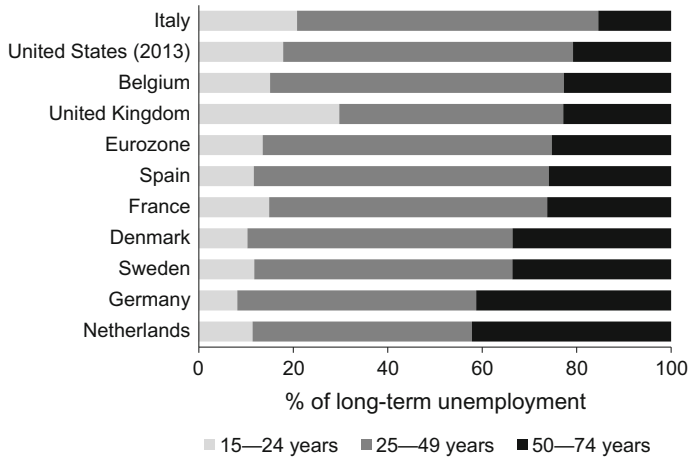

Fig. 5 Share of older workers among long-term unemployment in the Netherlands higher than in other countries (year = 2014). *Source* Eurostat (year = 2014) and for the US OECD (year = 2013)

10 years than in other countries and is currently one of the highest in Europe. Older people remained active on the labour market and have kept looking for work, even when they lose their jobs. This is largely the result of the abolition of early retirement schemes and the reform of disability insurance and unemployment insurance schemes (Euwals et al. 2012). The higher labour participation of older people, however, did not involve an equal increase in employment for this group. In particular, displaced older workers have much lower probabilities of regaining employment than prime-age displaced workers (Deelen et al. 2014).

The share of older workers among the long-term unemployed is higher in the Netherlands than in other countries. In the EU, on average, around a quarter of all long-term unemployed are over the age of 50. In the Netherlands, this is more than 40 % (Fig. 5). Only Germany has a similar share of older workers in long-term unemployment, though at a much lower overall rate. This is related to the Hartz-reforms (including unemployment benefits reforms) (Burda and Hunt 2011) and the relatively small impact of the Great Recession on the German economy.

During the Great Recession, various measures were taken to combat the rise in unemployment in general and improve job-finding probabilities of older unemployed workers in particular. A part-time working scheme, hiring subsidies for older workers, special job application training for older unemployed workers and subsidized retraining programs were introduced. Although these measures have not formally been evaluated, they do not appear to have been very effective given the limited budgets allocated and the unfavourable labour market outcomes observed.

The problem of long-term unemployment among older workers appears to be a structural problem. The share of the older unemployed in long-term unemployment had already started to increase before the start of the Great Recession (Fig. 6). It therefore makes sense to look at structural labour market reform rather than the introduction of temporary measures. Adjustments in unemployment insurance (Sect. 3.2) and employment protection (Sect. 3.3) could help, as well as active labour market poli-

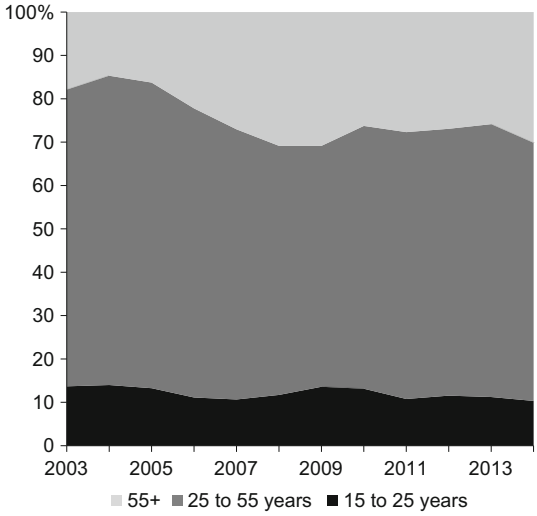

Fig. 6 Long-term unemployment in the Netherlands has become more concentrated among older workers. *Source* Statistics Netherlands

cies (ALMPs; Sect. 3.3). Apart from these policies, changes in employers' attitudes towards older workers and older jobseekers, the steep age-wage profiles and other elements in collective labour agreements that make older workers more expensive or less productive[6] may help to improve the labour market opportunities of older jobseekers.

4.2 Unemployment Insurance

The unemployment benefit system affects search effort and the reservation wages[7] of individuals, and therefore their unemployment spells (Mortensen 1977). Empirical studies confirm that both the level of benefits and the duration of unemployment benefit entitlements positively affect the duration of unemployment (Nickell et al. 2005). High levels and long lasting unemployment benefits enable the unemployed to hold on to a high reservation wage (Feldstein and Poterba 1984; Addison et al. 2009; Krueger and Mueller 2014).

The empirical literature shows that job-finding rates increase near the timing of benefit exhaustion. In the US, the job-finding rate increases by 200–400 % close to the benefit exhaustion date (Katz and Meyer 1990; Meyer 1990; Krueger and Mueller 2010). For Sweden, an increase by 170 % has been found. This smaller effect is the result of a smaller incentive: Swedish unemployed workers whose benefit period has expired are entitled to temporary public jobs or training programs, thereby reducing the risk of actually losing income support (Carling et al. 1996). Other studies include Ham and Rea (1987) for Canada and Lalive (2008) for Austria. The implication of this literature is that unemployed workers are sensitive to the duration of unemployment

6 E.g. additional days off, fewer shift work obligations.

7 The reservation wage is defined as the lowest wage that an unemployed worker wishes to earn in a new job.

benefits, and are therefore also likely sensitive to a decrease in unemployment benefits when the unemployment spell increases.[8]

In the presence of moral hazard, decreasing benefits during the unemployment spell are considered optimal (Fredriksson and Holmlund 2006; Tatsiramos and van Ours 2015). In this way unemployed workers receive stronger incentives to search.[9] The argument is reinforced if job finding rates deteriorate as a result of human capital depreciation (Shimer and Werning 2006; Pavoni 2009). Long-term unemployed workers might lose skills and therefore become less attractive on the labour market (see e.g., Ljungqvist and Sargent 1998). The desirability of a declining benefit profile has however been challenged by some authors. If unemployed workers are able to offset a declining benefit profile through borrowing and saving, then the incentive effect might vanish. This was found to be relevant in the US (Chetty 2008). It is however likely less important in European labour markets, most notably the Netherlands.[10] With a longer maximum unemployment insurance duration, the moral hazard effect and human capital depreciation effect are relatively important compared to the liquidity constraint effect.

The reservation wages of Dutch long-term unemployed workers appear not to decrease over time. According to surveys conducted by the Netherlands Institute for Social Research (SCP), reservation wages increase with age and unemployment duration. Reservation wages increase from 8 euros per hour for a young worker (aged 16–24) to 13 euros for an older worker (aged 55–64). This age effect is robust even after accounting for education and gender.[11] Workers with a longer unemployment spell report slightly higher reservation wages than short-term unemployed workers. After controlling for age, education, gender and household income, the reservation wage curve becomes flat, but still does not decline with unemployment duration. This is likely related to the Dutch unemployment scheme (see the earlier mentioned literature).[12] The maximum duration of Dutch benefit payments, at 3 years and 2 months is long from an international perspective. This maximum duration was shortened to 2 years under the new Dutch Employment and Security Act (WWZ), which was implemented on 1 July 2015. This brings the Netherlands in line with countries such a Denmark, Finland and Germany. Other countries, such as the United States (5 months) and Sweden (1 year and 2 months), have shorter maximum durations.

Bringing down the maximum unemployment duration is perhaps not the most obvious policy option, given that it has just been shortened. An alternative policy option

[8] The termination of unemployment benefits may either lead to a drop from UI benefits to zero or to some other form of (lower) benefits, usually social assistance.

[9] This conclusion is based on a literature started by Shavell and Weiss (1979). Further references are discussed in Tatsiramos and van Ours (2015).

[10] Chetty (2008) finds that an optimal unemployment insurance in the US would last for 6 months and pay out a constant benefit of 50 % of pre-unemployment wages. Kolsrud et al. (2015) have recently argued that a declining benefit profile may lower unemployment, but may not be welfare improving in general.

[11] See de Graaf-Zijl et al. (2015). Of course, the age effect is related to the higher wages that senior employees generally earn.

[12] Another explanation for the non-decreasing reservation wages is selection. Workers with lower reservation wages find a job more quickly, leaving workers with high reservation wages behind in long-term unemployment.

aimed at lowering the reservation wages of long-term unemployed would be the introduction of a declining benefit profile as has more recently been introduced in Sweden and Belgium. Current unemployment insurance benefits are constant over time.[13] With a declining profile, the Dutch long-term unemployed would be stimulated to lower their reservation wage and accept a job more quickly.[14] This would prevent human capital depreciation, in particular by older and experienced workers, who are overrepresented in Dutch long-term unemployment.

From a behavioural economics perspective a wage loss insurance may be more effective than declining benefit profiles, due to the fact that individuals tend to procrastinate in their job finding activities even if it is against their own long-run self-interest (Babcock et al. 2012). In the Netherlands such wage loss insurance has been enacted as part of the unemployment benefits scheme since the recent implementation of the Employment and Security Act in July 2015. Since then unemployment benefit recipients receive a wage supplement up to 70 % of the difference between the old and the new wage provided the new job has a monthly wage that is at least 12.5 % below the wage earned at their previous job, and the new working hours are no more than 5 hours less than in their previous job. Part of the income loss is thus covered by the unemployment insurance.

4.3 Employment Protection and Temporary Contracts

Employment protection legislation (EPL) is associated with long-term unemployment. The empirical literature has not established a causal link between EPL and the level of unemployment in general. The effects of the hiring rate and the firing rate more or less cancel out.[15] But EPL does seem to have an effect on *long-term* unemployment. More EPL is associated with both less firing and less hiring. On the one hand, this leads to less short-term unemployment, but on the other hand, more workers become long-term unemployed. Indeed, in countries with lower EPL, the structural level of long-term unemployment is lower (OECD 2004), it peaks at a lower level during a recession, and it decreases faster after a recession (Duval et al. 2007). A higher level of EPL on the other hand is associated with higher long-term unemployment. When it is difficult for employers to fire employees or when firing costs are high, they are hesitant to hire new workers. With high EPL, employers run the risk of incurring firing costs of their newly recruited employees, particularly if the recovery is fragile and uncertain.

The negative association between strong EPL for regular contracts and the hiring rate is, however, mitigated by the presence of temporary contracts. In the Netherlands, the share of temporary employment contracts and self-employment (usually without personnel) has grown substantially over the last decades (Fig. 7). The high incidence of these non-standard work arrangements may mitigate the influence of

[13] Benefits equal 75 % of the last earned wages in the first 3 months of unemployment, and remain constant thereafter. Benefits are therefore by definition constant for the long-term unemployed.

[14] Note that even in the US, with less generous unemployment insurance than in the Netherlands, Krueger and Mueller (2014) find that unemployed workers do not sufficiently lower their reservation wages in order to find a job.

[15] See, e.g., Deelen et al. (2007).

Fig. 7 Share of flexible and self-employment in total employment in the Netherlands

stringent employment protection among regular workers on long-term employment. In Spain, for instance, the use of fixed-term contracts has led to more hiring, which has reduced structural long-term unemployment (Dolado et al. 2002). According to Dolado et al. (2002) there is, however, also a drawback to a high rate of temporary employment, which may result in higher long-term unemployment. Workers who become unemployed due to the termination of permanent contracts may suffer from stronger duration dependence than in labour markets without temporary contracts. In the authors' view this stems from the crowding out of this group by frequent job-to-job shifters on fixed-term contracts. Comparable results have been found for the Netherlands. Deelen et al. (2014) find that especially older displaced workers have much smaller re-employment probabilities than younger workers.

In the Netherlands employers have ample possibilities to hire new workers on short-term contracts, as independent professionals or temporary workers. The share of temporary workers is one of the highest of all OECD countries.[16] Of the OECD countries, the differences in employment protection levels between temporary and permanent contracts are the greatest in the Netherlands (OECD Employment Protection Database, 2013 update). No restrictions or severance payments apply to the termination of temporary contracts with a duration shorter than 2 years. Dutch employers therefore have no reason to hesitate to hire workers on a temporary contract, because the expected costs of termination of these contracts is so low.

EPL may however be an indirect cause of long-term unemployment due to the stronger duration dependence of workers displaced out of permanent contracts (Dolado et al. 2002) and due to the fact that EPL increases with job tenure. The increase of EPL with job tenure lowers job mobility and therefore the employability of workers who have remained in the same job longer than the employment period that would have been consistent with their optimal future labour market prospects. In the Netherlands people who change jobs are the first to get fired in a round of redundancies at their

[16] Only Spain, Portugal and Poland have a higher share of temporary workers.

new employer, and in addition they receive lower severance payments. The increment of severance pay with job tenure has been somewhat reduced since July 2015, when the new Employment and Security Act (WWZ) was implemented. As it now stands severance pay is no longer related to age. Nevertheless, even under the new Act, employees have an incentive to continue working at the same employer. This may however weaken their structural labour market position, and thereby hinder the decline of long-term unemployment after a recession, especially among older workers.

4.4 Active Labour Market Programs

A recent meta-analysis of active labour market programs (ALMPs) indicates that program effects are larger for the long term unemployed than for other jobseekers (Card et al. 2015). The evidence suggests that training and private sector employment subsidies work relatively well for the long-term unemployed, especially during recessions.[17] The effects of ALMPs are larger in the long run than in the short run.

Training may be a useful policy for the long-term unemployed whose skills poorly match labour demand. Not all unemployed workers will be able to benefit from economic recovery, as some will not be able to return to their previous profession. In the Netherlands, workers displaced from the financial sector and from postal services have a lower chance to return to their previous occupation (Erken et al. 2015b). These sectors are structurally declining due to lower demand (postal services) and technological changes (finance). A well-targeted training might help reemployment especially among this group.

Temporary wage subsidies may also help the long-term unemployed find employment. According to the meta-analysis by Card et al. (2015), private subsidies have the largest effect of all program types in the longer run (i.e. more than 2 years after program completion).[18]

Financial incentives for long-term unemployed workers to search for work increase the net gain from accepting a jobs and may help in lowering long-term unemployment (Katz et al. 2014). Experiences in the UK with Britain's Employment Retention and Advancement (ERA) program have shown that financial incentives can help the long-term unemployed to regain employment. The ERA was launched in 2003. It is one of the largest randomized social policy trials ever undertaken in Britain. It was designed to improve the labour market prospects of low-paid workers and long-term unemployed people by encouraging human capital development. This was done by supporting and incentivizing training among low-wage workers. To accomplish this, the program provided personal adviser support and financial incentives to complete training and work full-time. Unemployed workers received a bonus when they accepted a job and managed to keep it (in 6 tranches) and they received a bonus for following and finishing a training program while at work. Due to the ERA scheme, job finding probabilities

[17] On the other hand, job search and sanction/threat programs have a relatively small effect on the job finding probabilities of the long-term unemployed.

[18] In contrast, subsidized public sector employment has only small effect, both in the short and in the long run.

increased, income rose and the average unemployment benefits received decreased. According the cost-benefits analysis by Hendra et al. (2011), both program participants and the government benefitted financially from the program.

5 Conclusion

The economic shock caused by the Great Recession was not particularly large in the Netherlands compared to other countries. But the shock did cause an important rise in unemployment, in particular long-term unemployment. From 2008 until 2014, employment in the Netherlands fell by 3 %, which was equal to the decline experienced in the US and Finland. Long-term unemployment however rose by twice as much as in these peer countries. The Netherlands was one of the few countries where long-term unemployment continued to rise in 2014.

Compared to Germany, the decrease in employment in the Netherlands was large. A GDP decomposition suggests that this was related to the smaller rise in wage costs in Germany. A comparison of wage and productivity developments suggests that Germany—as well as the UK and the US—adjusted their wages downward. In the Netherlands, on the other hand, the wage development during the Great Recession was on par with productivity growth.

Long-term unemployed workers are on the margins of the Dutch labour market. Both the Beveridge curve (the relation between unemployment and vacancies) and the Phillips curve (the relation between unemployment and real wages) are largely insensitive to the rate of long-term unemployment. The implication is that the labour market appears unable to solve the problem of long-term unemployment by itself.

Long-term unemployment is to a significant extent a problem of older workers. In the Netherlands, 40 % of the long-term unemployed workers are over age 50. In the EU as a whole and in the US, this percentage is 20–25 %.The problem of long-term unemployed older workers appears to be a structural problem, as their numbers had already started to increase before the start of the Great Recession. Participation rates above age 50 have risen quite spectacularly in the Netherlands, but once unemployed, this group generally finds it very hard to regain employment.

We identify three possible avenues for labour market reform: unemployment insurance, employment protection legislation (EPL), and active labour market policies (ALMPs). Adjustment of the unemployment insurance scheme may be directed at lowering reservation wages of the long-term unemployed. Evidence shows that the reservation wages in the Netherlands barely decline after 1 year of unemployment. A declining benefit profile would stimulate long-term unemployed workers to accept a lower-paid job. Long-term unemployment may be a consequence of the relation between EPL and job tenure as well. Long-tenured (mostly older) workers have weaker incentives to switch jobs, and therefore tend more often to end up in jobs with poor future prospects. Loosening the link between EPL and job tenure could prevent this. Finally, training and financial incentives for both employers and the long-term unemployed may be effective active labour market policies.

Two final comments are in order. Firstly, in addition to being caused by the Great Recession and high and stable reservation wages, discrimination may partly explain the

disproportional rate of long-term unemployment of older workers in the Netherlands (see Van Dalen et al. 2009, 2010). Secondly, Dutch employers are perhaps not yet accustomed to recruiting older workers and to improving their productivity. This may be related to the 'early retirement culture' in the Netherlands that has been present since the early 1980s. Until just some years ago it was common to retire around the age of 60. Future research may reveal whether the labour market position of older workers can be improved by preventing discrimination and stimulating investments in older workers.

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