



CPB Netherlands Bureau for Economic
Policy Analysis

Uncertain supply

Fragile demand



Roads to recovery

Chapter 5

Labour market responses to the Great Recession

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5 Labour market responses to the Great Recession

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- Dutch unemployment has shown an unusual pattern, rising slowly in the first phase of the Great Recession but quickly from 2012 onwards.
- When aggregate demand recovers, employment follows suit and the unemployment rate returns to the natural rate of about 4%.
- The Great Recession does not permanently affect labour supply, but may have affected the human capital of the long-term unemployed.

5.1 Introduction

The Dutch labour market has witnessed two distinctive phases of rising unemployment during the Great Recession. In the early phase of the crisis, the rise in unemployment was relatively mild, but after the “double dip” in 2012, unemployment accelerated rapidly to over 7%, the highest level in decades. Academics, policymakers and forecasters have been puzzled by both the pattern and timing of these developments. Specifically, one might wonder which part of the rise in unemployment is due to specific elements of the Great Recession, and which part is due to specific labour-market elements. This chapter documents and interprets what has happened in the Dutch labour market during the Great Recession, and examines the implications for the recovery from the crisis.

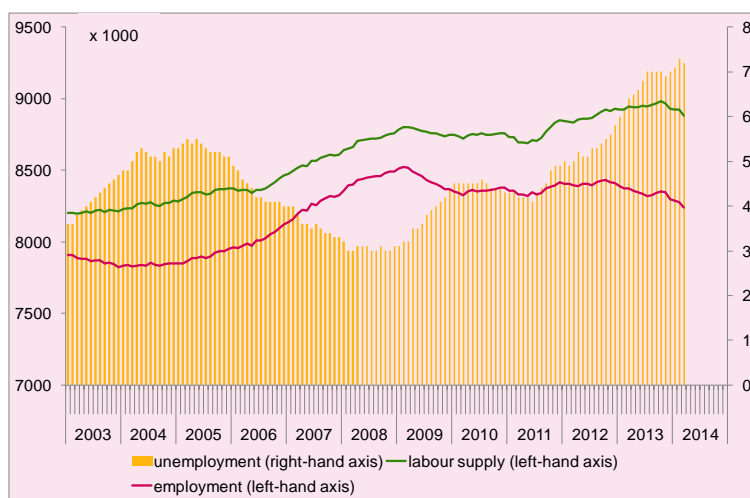
To determine what has happened, we first document the development of the rise in unemployment during the Great Recession, and show in what way this pattern differed from the usual unemployment response to a recession (Section 5.2). The two phases in the crisis, before and after the second dip, differ in terms of employment and labour supply patterns, which is elaborated upon in Section 5.3. Section 5.4 continues by exploring whether we expect long-run effects from the current losses in employment and labour supply, and whether we expect hysteresis in unemployment levels. We show that most losses are likely to be temporary, with scarring effects on the quality of human capital as one of the most likely elements to have a permanent effect on labour market outcomes. Section 5.5 discusses the factors that seem to be most important for recovery of the labour market.

5.2 What happened on the Dutch labour market?

Since the beginning of the Great Recession, Dutch unemployment has increased substantially (Figure 5.1). Within five years, the unemployment rate has more than doubled from 3.1% in 2008 to 7.2% in the first quarter of 2014. Forecasts show that it is likely that the peak in unemployment has not yet been reached (CPB, 2014a). Unemployment growth has not only been substantial; its timing has followed a remarkable pattern. In the early phase of the crisis, unemployment grew relatively slowly, especially considering the depth of the recession. After a phase of stabilisation, when the economy seemed to recover from the Great Recession, unemployment grew once more and this time more severely.

To be able to document and interpret the developments in the Dutch labour market, we investigate a number of trends. First, changes in unemployment are the result of developments in labour supply, on the one hand, and changes in employment levels, on the other. Figure 5.1 shows how labour supply, employment and unemployment developed before and during the Great Recession. The rise in unemployment in the first phase of the crisis (2009-2011) was the result of a decline in employment that surpassed the drop of labour supply. The second phase of the crisis (2011-2014) has been characterised by growing labour supply in combination with a decrease of employment. Only by the end of 2013 did labour supply start to decrease somewhat, slowing down the rapid increase of unemployment.

Figure 5.1 Moderate increase of unemployment in the first phase of the Great Recession (2008-2011) due to moderate employment response, rapid increase in unemployment in the second phase (2011-2014)



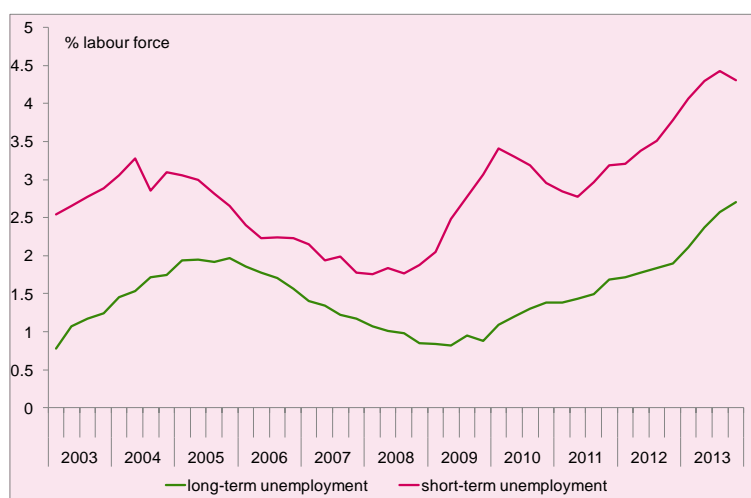
Source: Statistics Netherlands.

Second, the level of unemployment can be decomposed into long-term and short-term unemployment. During the Great Recession, long-term unemployment has increased substantially (Figure 5.2). Long-term unemployment encompasses all people who are unemployed for more than a year. The level of long-term unemployment in the Netherlands was approximately 1.0% prior to the Great Recession. During the crisis, long-term unemployment has gradually increased to 2.0% by late 2012. After that, it accelerated to 2.7% by late 2013. Short-term unemployment has developed in a more volatile way: it increased rapidly between late 2008 and mid-2010, and then decreased for a few quarters before starting to rise a second time from mid-2011 onwards.

Investigation of the composition of the group of long-term unemployed reveals that the increase in long-term unemployment is especially prominent among older workers (50 years and older) and the prime-age group (25-50 years). Between late 2009 and late 2013, long-term unemployment among workers aged 50-65 years rose from 1.3% to 3.4%. In contrast, short-term unemployment was especially prominent among young workers (15-25 years), reaching more than 9% by late 2013. In the prime-age group, both long-term and short-term unemployment show approximately the same pattern as the one depicted in Figure 5.2.

Third, it is interesting to document the flows of people between employment, unemployment and non-participation (that is, people voluntarily outside the labour force). These flows are substantial.

Figure 5.2 Especially long-term unemployment has grown substantially during the Great Recession



Source: Statistics Netherlands, data seasonally adjusted.

Figure 5.3 decomposes unemployment changes into contributions from employment and from non-participation. Unemployment growth in the period 2008-2009 seems to have been due to changes in employment (green bars): more people lost their job than unemployed people found work. After mid-2011, unemployment started to rise again. This time, the increase was mainly driven by flows from non-participation into unemployment (red bars). This suggests that there was a relatively large flow of unsuccessful entrants into the labour

force (e.g. students), which outpaced the discouraged unemployed leaving the labour market. The increase in unemployment was aggravated by a second wave of layoffs towards the end of 2012, which can be observed from the green bars in Figure 5.3.

Figure 5.3 Unemployment developments decomposed into flows from/to employment and flows from/to non-participation



Source: Statistics Netherlands, data seasonally adjusted.

Finally, the rise in unemployment should be accompanied by falling wages in a perfectly flexible labour market. When demand for labour falls, both quantities and prices are under pressure. In that sense, there seems to be a trade-off between wage adjustments and employment losses: unemployment rises more slowly if wages are adjusted downward (Bakker and Zeng, 2014). In the Dutch case, nominal wage growth slowed down after 2009, and real wage growth was negative and kept up with the decline in labour productivity (CPB, 2014a, pp. 51). Such adjustments help firms to also adapt to demand shocks via wages, not only through dismissing workers.

Figure 5.4 Growth in total real labour costs and labour productivity growth have moved in par during the Great Recession (1990=100)

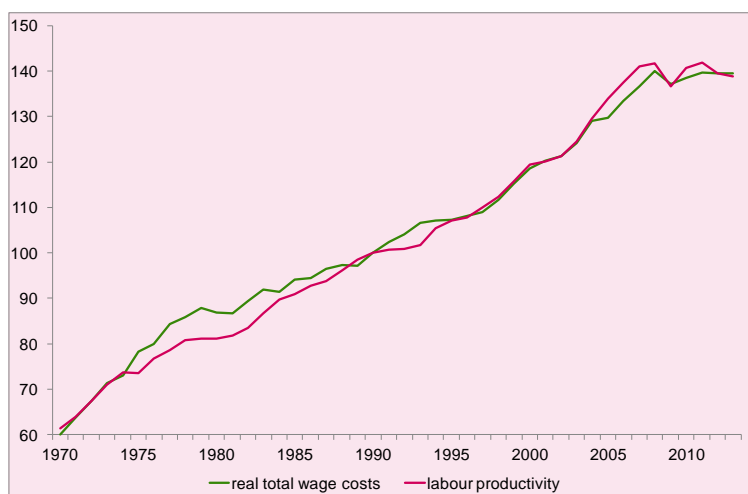


Figure 5.4 illustrates real wage costs and labour productivity developments in the Netherlands from the early 1970s onwards. Focussing on the period since 2008, we observe that real wages and labour productivity have moved in tandem. The slowdown of the rise in real wage costs does not seem to exceed the slowdown in labour productivity. This suggests that, for the Dutch economy as a whole, the downward pressure as a result of rising unemployment and deteriorating possibilities of finding work (for new entrants and those who had to find work again after being dismissed), was not fully absorbed in the wage costs. Most of the labour-market absorption of the crisis seems to have occurred in terms of quantities, not in prices.

5.3 Two distinct periods of rising unemployment

The unemployment response during the Great Recession seems to have deviated from the typical way unemployment reacts to growth slowdowns. In general, there exists a negative correlation between GDP growth and unemployment, which is commonly known as “Okun’s Law” (Okun, 1962). Gordon (2010) transformed Okun’s Law into a model that can be tested empirically, while taking into account the long-term steady state of the labour market. We follow Erken *et al.* (2014) who estimated this model for the Netherlands (see Figure 5.5). The results of this analysis show that the model fit during the period 1985-2008 captures the actual pattern accurately. The Dutch unemployment development during the Great Recession deviated from the model forecasts, however, which suggests that this time is different.

Figure 5.5 Unemployment developments deviated in the two phases of the crisis from expectations based on Okun’s Law: unemployment growth below expectations in first phase (2008-2011), and above expectations in second phase (2011-2014)

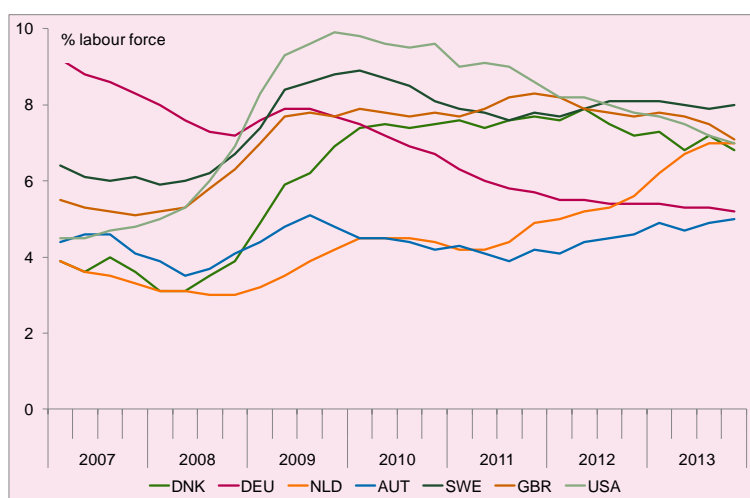


Source: Statistics Netherlands and own calculations (Van den Berge *et al.*, 2014).

As the numbers in the previous section suggest, there seem to be two phases of unemployment during the period after 2008. In the early phase of the crisis, the upward slope of unemployment was much smaller than was predicted by the Okun-Gordon model. In the second phase, the slope was much steeper than expected. We are now at the level predicted by the Okun-Gordon model, but the transition to this level seems to have been different and not in line with the usual way unemployment develops during a recession.

The Dutch unemployment pattern is atypical compared to other countries as well. Figure 5.6 shows the development of the Dutch unemployment rate vis-à-vis the US and some of its Northern-European peers, such as the UK, Denmark, Austria and Germany. These countries are identified as peers since they all have a low level of structural unemployment in combination with a high level of labour productivity.³⁷ Before the crisis, the Netherlands had one of the lowest unemployment levels. In the first phase of the crisis, Dutch unemployment remained below that of most of its peers. This changed considerably in the second phase of the crisis. In most of the peer countries, unemployment stabilized or even declined, while in the Netherlands unemployment grew rapidly after 2011. This is partly due to the fact that the Netherlands went through a second dip, which many of the peer countries did not. As a result, the level is now on-par with or even above that of its peers. In addition, expectations are that unemployment will continue to rise up until the fourth quarter of 2014, while it is already decreasing in many other countries.

Figure 5.6 Dutch unemployment was lowest in comparison with some peer countries before the Great Recession, but the Netherlands is worst performer in 2014



Source: Eurostat.

³⁷ The structural unemployment is measured by the Non-Accelerating Inflation Rate of Unemployment (NAIRU) of the OECD. The threshold value is set at the OECD average of 7.1%, based on observations for 2013. The level of labour productivity is based on the Total Economy Database of the Conference Board, with a threshold value of \$50 per hour in 2013. Iceland, Luxembourg and Norway are left out of the comparison, to simplify the benchmark analysis.

5.3.1 The first phase: unemployment declined slower than expected

To understand the pattern of rising unemployment, we must understand what happened to employment and labour supply. The slow rise in unemployment in the first phase of the crisis (2008-2011) seems to have been the result of a mild employment drop, relative to the decline in GDP, while labour supply showed no strong or unanticipated movements. Most of the slow decline in employment is likely to be due to labour hoarding among firms that were financially able to do so, and a relatively high absorption capacity among the self-employed, who seem to have cut back on hours worked and hourly fees. Labour supply behaved as expected by declining somewhat, partly due to school leavers who postponed labour-market entrance and continued studying to enhance their labour market opportunities (Bouma *et al.*, 2011).

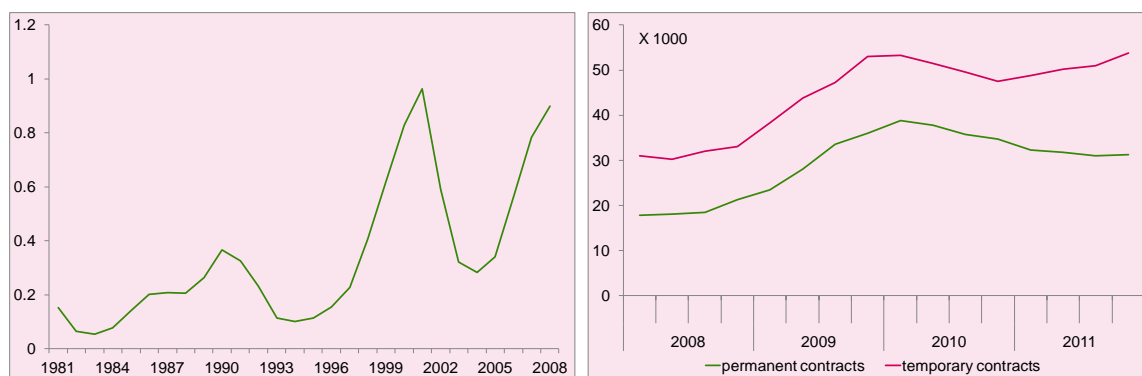
Labour hoarding

Labour hoarding plays an important role in the response to an economic downturn. It implies that firms refrain from lay-offs of redundant workers during a recession. Even though it is impossible to observe labour hoarding directly at the macroeconomic level, there seem to be clear indications that it was adopted by many Dutch firms, especially during the first phase of the crisis. Surveys among employers illustrate that almost 75% of those firms that did experience a drop in demand in 2009 did not lay off workers proportionally (Intomart, 2010; Van der Ende *et al.*, 2010a, b). Another indicator of labour hoarding is the decline of Dutch labour productivity, as documented in Figure 5.4 and the topic of Chapter 4. Labour hoarding was not specifically a Dutch phenomenon; several European countries witnessed a sharp drop in productivity during the beginning of the crisis.

Labour hoarding by firms in the early phase of the crisis can be explained from the pre-crisis situation of low corporate debt levels in combination with the tight labour market just before the crisis (De Jong, 2011; Van der Ende *et al.*, 2010a,b; Josten, 2011). In contrast to many other countries, Dutch firms did not finance their growth in the pre-crisis years with extensive debts (Bakker and Zeng, 2014). It was this high indebtedness and the ensuing need to deleverage that caused firms in other countries to cut employment. The fact that Dutch firms had many financial resources when the crisis started allowed firms to hoard labour.

The motivation of employers to hoard labour was to hold on to redundant workers with firm-specific human capital that were scarce just before the crisis hit the global economy (Van der Ende *et al.*, 2010). Many firms, anticipating what they expected to be a shortly-lived crisis, sought ways to be able to reallocate their personnel as quickly as possible when the crisis was over. This was reinforced by the fact that employers struggled to find appropriate personnel prior to the crisis. Indeed, the vacancy-to-unemployment ratio was very high in 2008 (Figure 5.7, left-hand panel). During this time, unemployed workers quickly returned to the labour market and students were picked from school to enter the labour market even before they graduated.

Figure 5.7 Vacancy/unemployment ratio boomed prior to the Great Recession (left) and high inflow into unemployment of persons with temporary contracts (right)



Source: Statistics Netherlands (left) and own calculations on the Labour Force Survey (right); moving average of four quarters.

Strict employment protection legislation (EPL) might be a reason for labour hoarding as well. It prevents firms from immediately changing their demand for labour in response to changes in product demand.³⁸ However, there does not seem to be strong empirical evidence that employers were holding on to redundant workers due to the strict EPL regime. Although EPL for permanent contracts in the Netherlands is above the OECD average, as it has been for a long time, employers hardly mentioned EPL as a motive to hold on to redundant workers (Josten, 2011 and Van der Ende *et al.*, 2010a,b). The high share of temporary contracts in employment (17.5% in 2008) probably cushioned regular workers. Such contracts provide flexibility to employers. Indeed, nearly 60 percent of all inflow into unemployment came from temporary employment (Figure 5.7 right).

In other countries (e.g. Germany and Italy), short- working-time schemes also seem to have contributed significantly to preserving jobs during the crisis (Hijzen and Venn, 2011; Hijzen and Martin, 2013; Boeri and Bruecker, 2011). In the Netherlands, two short-working-time schemes sequentially were put in place between late 2008 and mid-2011. Evidence is weak, however, that these schemes have contributed to the mild unemployment response during this period of crisis (Hijzen and Venn, 2011; De Jong, 2011; De Groot *et al.*, 2012).

Self-employment

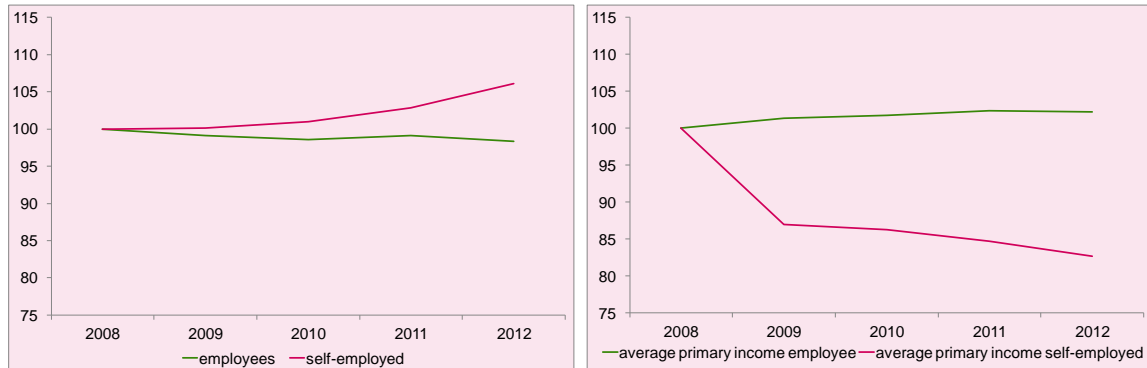
Another factor that cushioned the effect of a declining GDP on employment is the high share of self-employment in the Netherlands. In contrast to most other countries, the share of self-employed in Dutch employment has grown steadily over time (Figure 5.8, left-hand panel). In 2013, more than 15% of all people at work were self-employed. In economic downturns, self-employed workers cushion the effect of the slowdown in activity by means of lower income rather than being registered as unemployed (OECD, 2012; CPB, 2014a). Figure 5.8 illustrates this phenomenon. The number of self-employed grew, while the number of employees declined.³⁹ For average incomes, the opposite occurred. So while employees seem to have absorbed the shock in term of volumes, the self-employed seem to have absorbed it

³⁸ See e.g. Nickell (1978); Bentolila and Bertola (1990); Blanchard and Wolfers (2000) and Bassanini (2012).

³⁹ The increasing number of self-employed may partly be caused by the crisis itself, since self-employment is now a more attractive outside option for unemployed job seekers. But it is not the only reason behind the growth in the number of self-employed (Van Es and Van Vuuren, 2010).

in terms of their income. Average real income per self-employed person dropped considerably by 13% in 2009.

Figure 5.8 The number of self-employed grew, while number of employees declined (left), and the average real income of self-employed declined while that of employees remained constant (right), indices (2008 = 100)

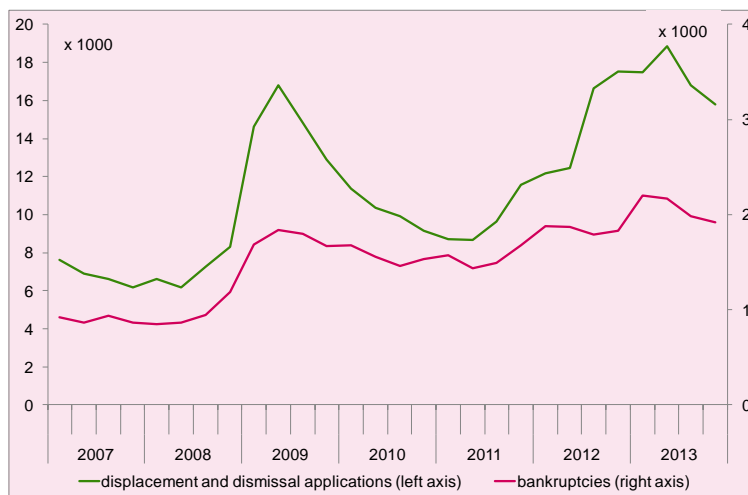


Source: CPB, 2014a (p.46).

5.3.2 The second phase: unemployment grew faster than expected

Part of the explanation for the deviant Dutch unemployment pattern seems to be the fact that the Great Recession in the Netherlands is characterised by a double dip, with two subsequent periods of negative growth. Most other Northern European countries did not experience such a double dip, and seem to have been witnessing a stabilisation of their labour market in recent years. But the Dutch double dip cannot explain the entire difference with our peer countries. In the second phase of the crisis, unemployment grew faster than expected on the basis of the decline in GDP (Figure 5.5).

Figure 5.9 Displacements and bankruptcies increased especially in the second phase

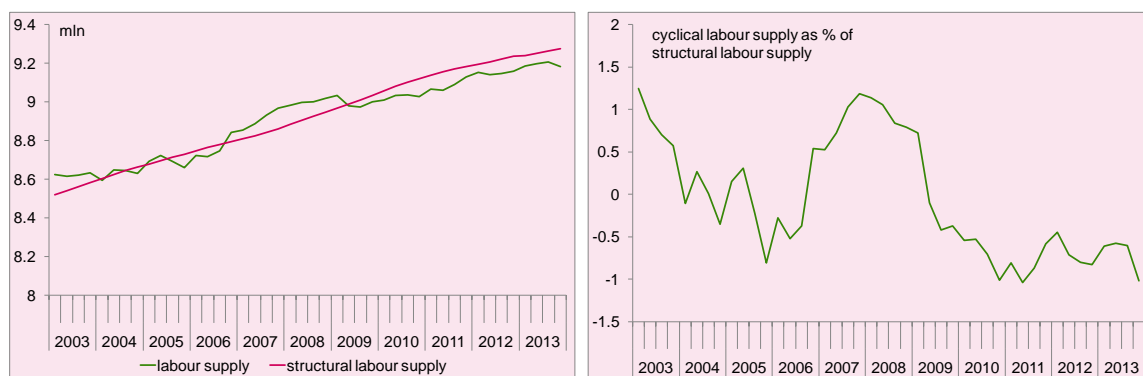


Source: Statistics Netherlands.

It would be a matter of common sense to attribute the strong rise in unemployment in this second phase (2011-2013) to a catching-up process of delayed lay-offs from the first phase of the recession. When employers that hoarded labour in the first phase of the crisis were faced with a prolonged length and depth of the crisis, their financial buffers might have vanished, leading them to consequently opt for massive lay-offs in the second phase. Indeed, displacement increased substantially (Figure 5.9), and the income of self-employed declined at a much slower pace in the second phase (Figure 5.8). But this stronger employment response cannot fully explain the substantial upward shock in unemployment. There is an additional effect that comes from the labour supply side (the red bars in Figure 5.3 are substantial).

Labour-supply developments seem to be responsible for most of the aberrant movement in the Dutch unemployment figures in the second phase (CPB, 2011 pp. 13; CPB, 2013 pp. 47). Actual labour supply always deviates from its structural growth path due to business cycle fluctuations. The cycle influences both the necessity and the attractiveness of (looking for) work. The net effect of the cycle on labour-force participation is not clear theoretically, because two opposing effects are at play: the added-worker and discouraged-worker effects. The added-worker effect implies that household members outside the labour force will look for a job when faced with a reduction in household income (e.g., when their partner loses his/her job) in order to avoid a severe drop in income. The discouraged-worker effect implies that job seekers are discouraged when they are confronted with poor job-finding opportunities, and as a result leave the labour market.

Figure 5.10 Actual labour supply moved below its trend during the Great Recession in the early phase, hardly any further decline in the second phase (left). Cyclical labour supply is now about -1% (right)



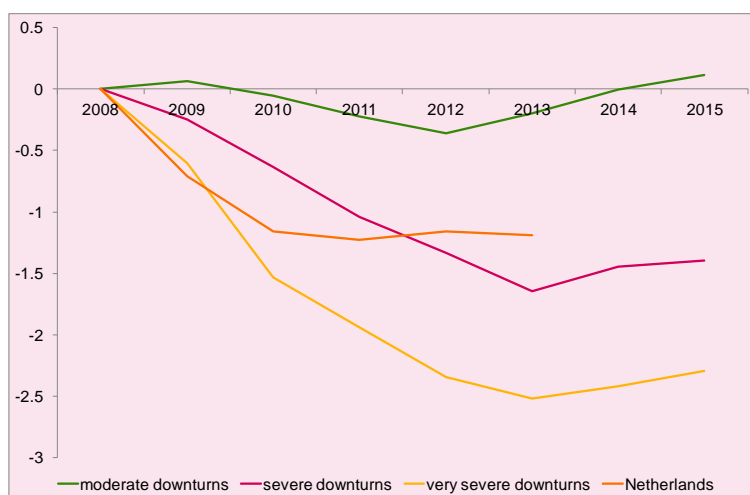
Source: Statistics Netherlands. Structural labour supply is based on CPB calculations in which structural participation rates are calculated by applying an HP-filter on the realised participation rates by age and gender, 1987-2013. An extensive explanation of the applied methodology can be found in Van den Berge *et al.* (2014).

As in most recessions, the discouraged-worker effect has dominated over the added-worker effect during the Dutch Great Recession (Figure 5.10 left). Many studies find that labour-force participation declines during downturns and increases during upswings (Van den Berge *et al.*, 2014). Figure 5.10 (left) illustrates that actual labour supply has moved below the structural trend during the Great Recession. As a result, labour supply is now about 1% below its structural trend (Figure 5.10, right). What is most striking is that cyclical labour

supply did not decrease further in the period mid-2011 to 2013. This is the period in which the aberrant labour-supply behaviour seems to have been most eminent.

The decline in cyclical labour-force participation was small given the severity of the economic downturn (Figure 5.11). Cyclical labour supply effects can be categorized depending on the severity of a downturn. According to the definition of Duval *et al.* (2011), the Great Recession in the Netherlands can be characterised somewhere in between a ‘severe’ downturn and a ‘very severe’ downturn.⁴⁰ Hence, the predicted path of cyclical participation loss for the Netherlands based on their estimates would lie somewhere between the red and green line in Figure 5.11, with an aggregate maximum decline of about 2 percentage points in 2013.

Figure 5.11 Dutch cyclical labour supply did not react as it normally does in a severe downturn (cumulative effects in %-points)



Source: own calculations based on estimates by Duval *et al.* (2011) and on CPB calculations of trend growth in Dutch participation rate. The estimates of Duval *et al.* are based on downturns in a group of 30 countries, in the period 1960-2008. Please note that the numbers for the Netherlands in this figure are not comparable to those in Figure 5.10 above. In figure 5.11, the cyclical labour supply is expressed as a percentage of the potential labour force, whereas in Figure 5.10, it is expressed as a percentage of structural labour supply.

Indeed, during the first phase of the crisis up till 2011, the decline in cyclical labour participation in the Netherlands followed that of a very severe downturn. However, whereas a further decline would be the expected pattern according to the estimates by Duval *et al.* (2011), the cyclical part of labour participation has changed little from 2011 onwards. In 2013, it was above the severe downturn path and far above the very severe path. This means that fewer people withdrew from the labour market than expected, and, as a result, unemployment rose faster than expected (also see Erken *et al.*, 2014)

Both the high number of labour-market entrants in the period mid-2011 to mid-2013 and the lower levels of early retirement are consistent with the observation that the participation loss is relatively mild. The high number of labour-market entrants could be due to

⁴⁰ The severity of a crisis is defined by Duval *et al.* (2011) as the output gap difference between peak and trough. A moderate crisis is defined as a gap between 3 and 6 %-points; a severe crisis between 6 and 9 %-points and a very severe crisis more than 9 %-points. In the Netherlands, the output gap loss was roughly around 8¼ %-points.

individuals entering the labour market in order to absorb income shocks that result from the partner's job loss, or wealth shocks that result from the drop in housing prices. Even though such shocks may in principle be small in terms of lifetime income, people might not perceive the shocks as transitory, and may instead act upon them (see also the section on precautionary savings in Chapter 6) especially in case of low wealth, strong credit restrictions, long perceived duration of the income shock and limited access to benefits (Bryan and Longhi, 2013). Most, but not all, of these elements seem to be present in the Dutch Great Recession, with its financial character (in which deleveraging banks imposed credit constraints upon consumers), the loss of housing wealth and its long duration (which caused long-term unemployment). In addition, Dutch pensioners suffered major losses in real pensions, which made clear that a stable pension is not a guarantee. The rising uncertainty might have induced older workers to remain longer in the labour force (Erken *et al.*, 2014), although the increase in the participation rate of older workers is to a large extent structural, as a result of changing institutions (Van Erp *et al.*, 2014).

To understand the labour-supply response to the Great Recession, Van Loon *et al.* (2014) studied labour-market flows from non-employment to employment and unemployment in the Netherlands. Their data seem to point to evidence in favour of substantial increases in the number of labour-market entrants in the period from mid-2011 to mid-2013 (see Figure 5.3). The vast majority of entrants was unsuccessful, in the sense that they entered into unemployment and did not find work shortly afterwards. It is hard to label this as an added-worker effect (in the strict sense, due to partners' job loss), since many of these new workers were either single or had a working partner. Those added workers might react upon the higher uncertainty regarding the income of partner or parent or upon the lower (in many cases, even negative) housing wealth (Henley, 2004).

5.4 Long-run effects of the crisis

There are two contrasting views about labour-market prospects after the Great Recession. The first view is that the Great Recession has wrought permanent damage to the labour market; the second view is that the damage is only temporary. The permanency of the labour-market effects is important for the interpretation of how the Dutch labour market will recover from the Great Recession. In this section, we analyse the strength of the evidence suggesting long-run effects. In addition, we identify what we think are the key elements that should help determine the speed of recovery. We examine the possibility of hysteresis in unemployment, scarring effects and long-run labour-supply effects, and explore whether or not there is evidence pointing to long-run damage.

5.4.1 Unemployment: hysteresis versus natural rate hypothesis

The hysteresis hypothesis

According to the hysteresis hypothesis (Blanchard and Summers, 1986), cyclical unemployment affects structural unemployment. The term "hysteresis" (borrowed by economists from studies examining electromagnetism) encompasses the idea that transitory

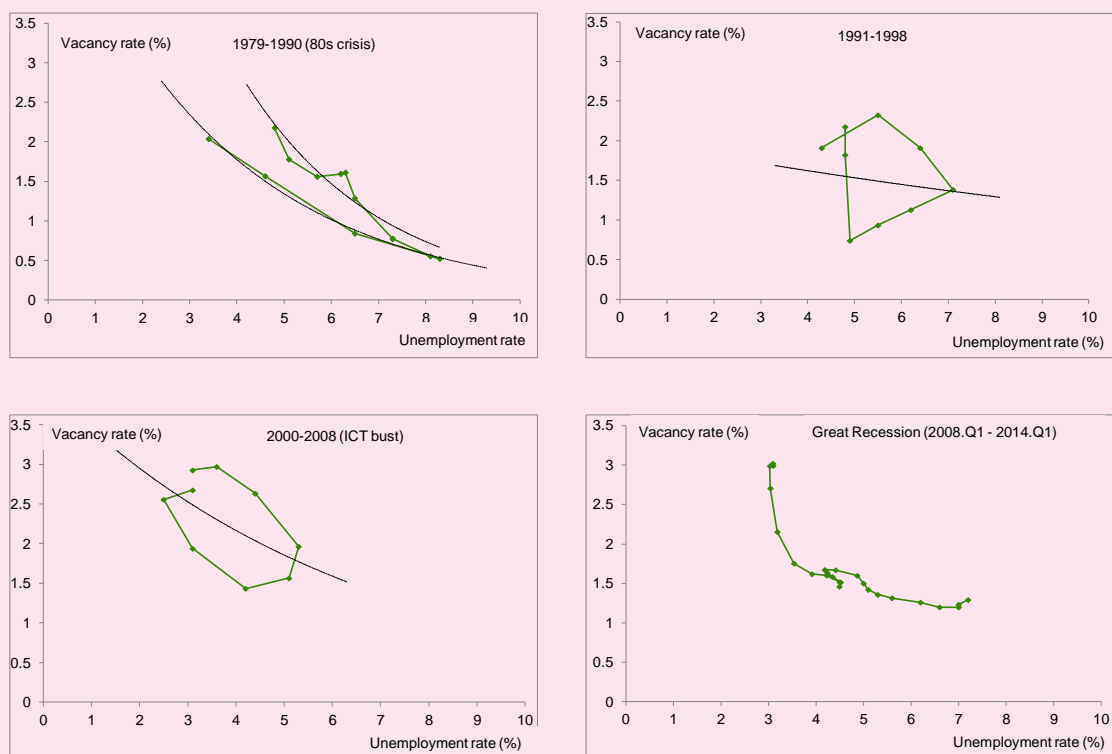
causes may have permanent effects. In theory, hysteresis could be the result of wage bargaining processes or human capital depreciation.

The Beveridge curve

Hysteresis might be visible in terms of a higher number of vacancies per unemployed job seeker, especially if it is the result of qualitative mismatching between labour demand and labour supply. The relation between vacancies and unemployment is commonly described by the Beveridge curve. Figure 5.12 shows this curve during four economic downturns. In each economic cycle the curve starts one year *after* the peak in GDP growth and ends one year after the next peak. During the crisis, the number of vacancies decreases, while unemployment grows. When the economy recovers, the opposite occurs. But the path is not symmetrical, since vacancies react more quickly than unemployment.

The recession in the 1990s and the ICT crisis in the early 2000s show the expected counter-clockwise adjustment pattern. The movement along the curve, with almost identical values at the beginning and end of the cycle, indicates that the deterioration on the Dutch labour market was primarily cyclical in nature, rather than structural. But the recession of the 1980s is different. After the 1980 recession we witnessed an outward shift of the Beveridge curve from the origin. Besides a lack of appropriate training and skills, the OECD (1993) attributes the outward shift of the Beveridge curve in the Netherlands to supply-side problems related to incentive and motivation. There were difficulties in filling low-skilled jobs, while unemployment among the low-skilled was high as well. Replacement rates in the Netherlands were among the highest of the OECD in this period (OECD, 1993). Evidence of an outward shift in the Beveridge curve after the recession in the 1980s due to high long-term unemployment is also reported by Driehuis (1990).

Figure 5.12 The Beveridge curve followed the regular counter-clockwise pattern during the Dutch recessions in the 1990s and early 2000s, but witnessed a structural shift in the 1980s



The Beveridge curve (continued)

Figure 5.12 illustrates the development of the Beveridge curve in the Netherlands during and after the Great Recession. Unknown as yet is whether the vacancy-to-unemployment rate will recover by its usual counter-clockwise pattern, or whether the long-term unemployed will have lost so much human capital that the pattern of the 1980s will be repeated. The replacement rates are no longer the problem; this time, the length and depth of the recession might be the problem, since this led to a high rate of long-term unemployment (see Figure 5.2). The first quarter of 2014 shows a slight upward jump in vacancies, without a decline in unemployment. It is too early to tell whether this is the start of a counter-clockwise adjustment pattern or of a shifting Beveridge curve. The same happened at the end of the ICT-crisis, and back then it was the start of a regular return.

In the 1980s, hysteresis as a result of wage rigidity seemed relevant for continental Europe but not for the US (Blanchard and Summers, 1986). Back then, the labour income shares were quite high in the Netherlands, which led to the wage moderation agreement (the Wassenaar agreement) in 1982. Currently, there are no signs that the labour income share is too high, and real wage costs have increased only moderately during the Great Recession (CPB, 2014a, pp. 51). Labour-market institutions have changed considerably since that time. Replacement rates are much lower and policies provide strong incentives to continue working and to minimize periods of unemployment and inactivity. Regarding the second explanation for hysteresis, some evidence suggests loss of human capital during downturns (see discussion below in Section 5.4.2, and the Beveridge Curve argument in the box above). Hobijn and Şahin (2012) and Bonthuis *et al.* (2012) show that mismatches are more prominent in countries (such as Spain, Portugal, the UK and the US) that witnessed housing market busts and disproportionate job losses in the construction sector. In that respect, the Dutch economy seems to run some risks.

Most empirical studies do not seem to find evidence pointing to hysteresis (See Van den Berge *et al.* (2014) for an extensive overview of the literature). In particular, Van Ours (2009) shows that the Dutch unemployment gap that resulted from the recession in the 1980s closed over time, which makes long-term hysteresis in unemployment unlikely, even in the aftermath of the 1980s recession. There is some evidence of a hysteresis effect in the medium run, but not in the long run. Hence, even if a crisis leads to an upwards shift in structural unemployment, it is unlikely to last.

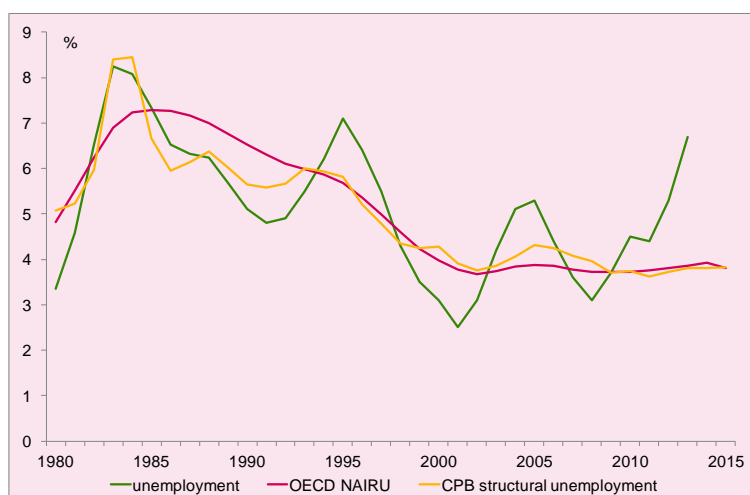
The natural rate hypothesis

The natural rate hypothesis argues that, in the long run, unemployment returns to its natural rate. In this view, the natural rate is solely determined by labour-market frictions arising from labour-market institutions (Friedman, 1968; Stiglitz, 1997). This implies that structural unemployment is unaffected by changes in aggregate demand.

For the Netherlands, the natural rate hypothesis appears to be more likely than the hysteresis hypothesis. Both the structural unemployment indicator calculated by CPB and the NAIRU from the OECD are unaffected by the Great Recession (Figure 5.13).^{41,42} Neither CPB nor OECD have thus far seen any indications for a revision of the Dutch NAIRU. The OECD has not revised the estimates for the Dutch NAIRU because they estimated the risk of hysteresis for our country small. They did revise their NAIRU estimates for other countries, such as Portugal, Spain, Italy, Greece and Slovenia, because it is believed that hysteresis is a potential risk in those countries.

The Dutch NAIRU will likely remain at a relatively low level compared to other countries, and compared to the previous period. The level has declined substantially since the 1980s. Policies were undertaken in the past 20 years to reduce benefit dependency (Vendrik and Cörvers, 2009): replacement rates have been brought down and unemployment benefit durations have been shortened; active labour-market programmes have been implemented for all benefit schemes; and the tax system has been reformed in order to make work pay for all, with special incentives for specific groups.

Figure 5.13 The estimated NAIRU did not increase during the Great Recession, according to both OECD and CPB



⁴¹ The CPB and OECD indicators are computed in a different way. CPB uses solely structural factors in order to determine structural unemployment. Key factors behind the equilibrium rate of unemployment are the tax wedge, the replacement rate and capital costs (see Broer *et al.*, 1999). The tax wedge measures the difference between real labour costs for firms and the net wage of workers. The replacement rate represents the fallback position in income of workers that lose their job. Capital costs capture the substitution possibilities between capital and labour. The OECD uses a Kalman filter technique (see Guichard and Rusticelli, 2010), but do not re-estimate if they see no important reason to do so.

⁴² The European Commission (EC) has its own estimates of the NAWRU, the Non Accelerating Wage inflation Rate of Unemployment, which shows many similarities with the OECD methodology. The main difference is the Phillips curve framework. Motivated by previous evidence on the fact that the traditional Keynesian Phillips curve that was used in the EC estimates provides excessively pro-cyclical NAWRUs in times of heightened volatility, the EC has recently modified its estimation approach; the new estimates of structural unemployment are now closer to those of the OECD.

5.4.2 Scarring

There is also a possibility of scarring. Scarring implies that long spells of unemployment negatively affect an individual's future earnings potential. There are three reasons why scarring might be the result of a period of unemployment. First, people might lose some of their skills or knowledge due to inactivity. Second, employers may use past unemployment as a signal of a lower productivity level (signalling effect). Third, long unemployment spells could result in lower reservation wages among the unemployed, inducing them to accept lower-paid jobs from which they are unable to climb the job ladder, or do so at a slower pace.

The empirical literature shows that scarring effects are likely to be significant and persistent especially when the local labour market and the industry from which people were displaced are in turmoil (Carrington, 1993; Hijzen *et al.*, 2010; Huttunen *et al.*, 2011; Deelen *et al.*, 2014). Not only displaced workers suffer from adverse labour-market conditions; also the young who enter the labour market in bad times suffer. Youth unemployment is important in this respect. Gregg and Tominey (2005) examine the impact of youth unemployment on wages twenty years later. They find that early unemployment causes a wage penalty of 10-21%. Kahn (2010) examines the effect of weak labour-market entrances on wages in the US, during the 1980s. Although the negative impact on wages declines over time, the effect is still significant 15 years after graduation.

Dutch studies examining scarring effects in general find long-term effects for individuals who entered the labour market in bad times, or who suffered displacements during such periods. Erpelinck and Van Sonsbeek (2012) find evidence that higher-educated workers who entered the labour market between 1990 and 1994 still have to cope with wage penalties in 2006 which are on average more than 5%. Research by Mooi-Reçi (2008) finds similar results. Wages of unemployed men are 8% below the wages of men that did not experience unemployment; for women, the wage penalty was 13%. For displaced workers, Deelen *et al.* (2014) find a wage penalty of 10% up to six years after displacement. These effects are weaker in industries that are not in structural decline than in industries that suffered structurally.

These empirical findings suggest that it is important to know the extent to which displaced workers were able to find work in their old occupations and sectors. If their type of work has been declining structurally, then the probability of scarring seems to be higher. This will be an important element in understanding the recovery of the labour market from the Great Recession. If there is indeed labour-market restructuring (see Section 5.5.2), then mismatch between labour supply and labour demand may be the result, leading to an outward shift in the Beveridge curve (see the box above) and a higher level of unemployment. At this point, it is unclear what the size of this effect is.

That sectoral restructuring is a real possibility seems to be clear from the labour-market experiences observed in Spain and Ireland. In these countries the crisis caused the collapse of some industries, especially the construction and financial sectors, which are not expected to return to their previous levels. Similar to Spain and Ireland, but perhaps not to a comparable degree, the Netherlands has witnessed a collapse in housing prices, which led to

employment declines in the construction sector. The financial sector has suffered severe losses as well. It is impossible to pinpoint exactly the extent to which the losses in Netherlands will have the same permanent restructuring effect, but the size of employment could be well under pre-crisis levels in some sectors or occupations.

5.4.3 Long-run labour-supply effects

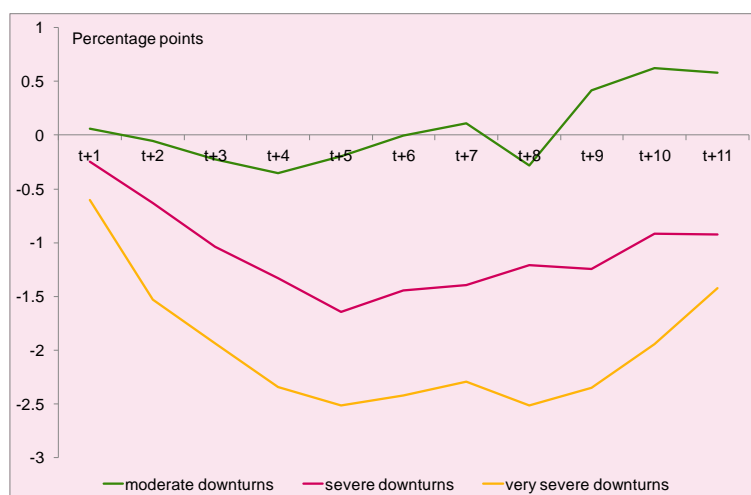
Labour supply may have been affected structurally by the Great Recession. This is the case if discouraged workers remain outside the labour market for good, or if added workers remain on the labour market. Alternatively, social norms regarding participation may have shifted, due to high numbers of discouraged or added workers, which may lead to processes on the macro level. A high number of long-term unemployed and discouraged workers may lead to a higher acceptance of benefit dependency, for example; in that case, labour supply will be structurally lower. Alternatively, if early retirement has become more socially acceptable, the same result is achieved. Both of these examples resemble the labour-supply reaction in the aftermath of the 1980s recession, but seem unlikely now.

In general, both added-worker and discouraged-worker effects appear to be rather persistent on the individual level (See Van den Berge *et al.* (2014) for an extensive overview of the literature). But persistence on the individual level does not automatically imply persistence on the macro level. On the aggregate level, the number of discouraged workers does show a drop when the economic tide improves. This decrease is mostly due to a lower inflow into discouragement (see also Kodrzycki, 2000) in combination with the retirement of the older discouraged workers. So even if discouragement is persistent at the individual level, on the level of the economy this is not the case.

At the macro level, Duval *et al.* (2011) find that severe downturns have long-term effects (see Figure 5.14). At the same time, IMF (2009) finds that financial crises usually lead to an increase in labour-force participation up to seven years after the start of the crisis. This difference between the studies by Duval *et al.* and the IMF could be due to the inclusion of a few less-developed countries in IMF sample, which causes the added-worker effect to dominate: long-term discouragement is simply no option in these countries.

As mentioned before, the Dutch labour-supply reaction during the Great Recession has been relatively mild (see Figure 5.11). This makes the likelihood of long-run negative labour-supply effects small. In addition, Duval *et al.* (2011) show that the persistence of labour-supply effects depends on institutional and policy settings, as well as the age structure of the group of discouraged workers. All of these reduce the likelihood of persistent discouragement in the Netherlands. Early retirement incentives embedded in old-age pension schemes and other social transfer programmes are found to amplify the responsiveness of older workers' participation to economic conditions (Duval *et al.*, 2011); these incentives have been abolished in the Netherlands in the past decade. Also the age structure of the discouraged workers gives no indication that the Netherlands runs a high risk of a persistent negative labour-supply effect from the Great Recession— since nearly two-thirds of all discouraged workers is over 45, and half of those are 55 or older. Only a minor share of discouraged workers is young.

Figure 5.14 Long-term cyclical participation effects of previous downturns vary with the severity of the recession (cumulative effects in %-points in years after the start of a recession)



Source: Duval *et al.* (2011). Estimates based on various downturn in 30 countries in the period 1960-2008.

5.5 Factors that affect the recovery

5.5.1 Permanent damage?

At this point there seems to be only limited evidence for structural labour-market effects of the Great Recession in terms of higher structural unemployment in the Netherlands. The analysis above seems to point towards more support for the natural rate hypothesis than for the hysteresis hypothesis. The possibility of hysteresis seems to be unlikely because the labour share in production has not risen dramatically and real wage costs seem to have developed in line with productivity shocks (but not below productivity levels; see Figure 5.4), replacement rates are relatively low and labour-market institutions are activating.

Empirical evidence does show, however, that scarring effects could occur and become persistent, which makes a case for permanent loss of human capital. If skill mismatches between labour supply and labour demand have increased due to long unemployment spells or structural shifts in labour demand, this could harm the Dutch labour market.

The relatively limited downward labour-supply effect during the Great Recession so far, in combination with reforms of labour-market institutions and the high age of discouraged workers, make structural labour-supply damage unlikely. Expectations are that labour supply will remain below its structural trend for the first few years after the crisis, but will return to its structural path, once discouraged workers retire from the labour market and are replaced by younger cohorts with fewer discouraged workers. A large share of added workers is likely to remain on the labour market, which could even— in the most optimistic scenario— lead to positive labour-supply-side effects of the crisis.

5.5.2 Secular trends

Apart from the effects brought about by the Great Recession itself, several secular trends also determine future labour-market developments. Below, we pinpoint as the most important secular trends possible job polarisation, demographics and structural labour supply of women and older workers.

Job polarisation

There are signs of changes in the structure of employment. Job polarization refers to the decline in employment in occupations in the middle of the skill distribution. In the past, technological development favoured high- and medium-skilled workers at the expense of the low-skilled. Currently, technological progress leads to contracting opportunities in the middle of the skill distribution. This phenomenon has been demonstrated clearly for the US labour market.⁴³ For the Netherlands, evidence in this respect is presented by Akçomak *et al.* (2011) and Ter Weel (2012). But evidence by Goos *et al.* (2012) shows that the rate at which it has occurred is limited— at least so far— compared to other countries (Figure 5.15).

Figure 5.15 Job polarization in the Netherlands is relatively limited, compared to other countries (%-point change in shares of hours worked in different occupations in Europe 1998 - 2010).



Source: Goos, Manning and Salomons (2012).

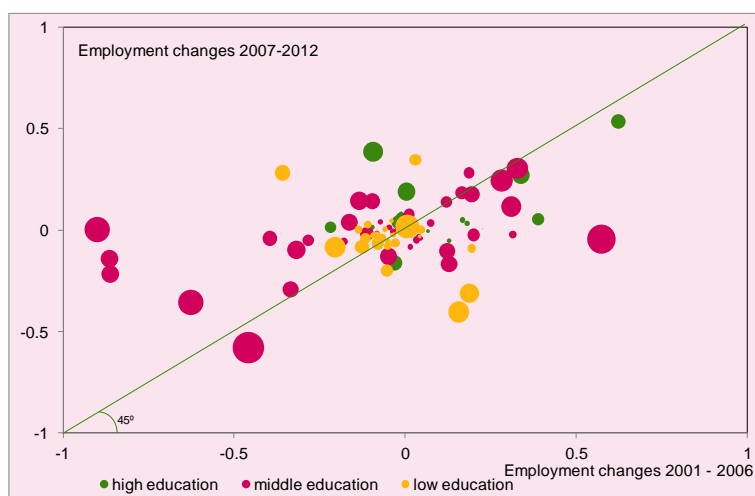
Countries are sorted by the change in the employment share of the medium-skilled occupations.

Some argue that the Great Recession has increased the speed of job polarisation (Goos *et al.*, 2013), and therefore may have contributed to the large employment losses in some countries. In the Netherlands, changes in employment shares of high- and low-skill occupations during the crisis are mostly in line with changes before the crisis: in Figure 5.16 most occupations are not far off the 45-degree line. There are a few middle-skill occupations where employment declined both before and after the crisis (Figure 5.16). Declining occupations include general managers, clerks and secretaries. Those occupations will not likely return to their old levels, and the same might happen to some other occupations for

⁴³ See e.g. Autor, Katz and Kearney (2006), Autor (2011) and Autor and Dorn (2013).

which we do not see the pattern in the data so far. In that sense, there are some important uncertainties for future labour-market development.

Figure 5.16 Employment loss highest in medium-skilled occupations, both before and during the crisis (%-point changes in employment in persons, 2001-2012)⁴⁴



Source: Statistics Netherlands (Labour Force Survey) and own calculations. Size of the dot represents the share in total employment in 2001.

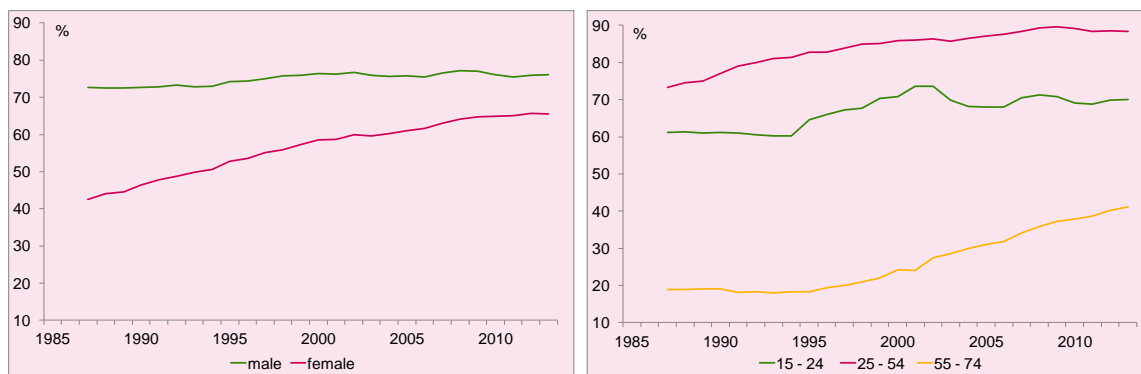
Secular trends in structural labour supply

Both demographic factors and structural shifts in participation rates are important for the development of structural labour supply. Structural labour supply has been growing, due to a combination of a growing potential labour force (demographics) and the trends in female and older worker participation rates (Figure 5.17). But since 2013, demographics exert downward pressure on labour supply due to population ageing. Until 2023 these downward demographic effects will be dominated by the upward effect of rising participation rates of women and older workers. The year 2023 will probably be close to the turning point, after which the negative demographic effect will start to dominate the positive participation-rate effect (CPB, 2014b).

The upward trend in female labour supply that we witnessed in the past decades is due to younger cohorts working more than the older retiring cohorts. The cohort born before 1950 found it more and more acceptable to work. But the generations born in the 1970s or 1980s have approximately the same work values as the women born in 1950 (Portegijs *et al.*, 2006). In the period 2015-2020 the women born in 1950-1955 will reach the statutory retirement age. So in 2020 the replacement of the older birth cohort (with its low participation rate) by younger cohorts (with higher participation rates) will likely be finished (Euwals *et al.*, 2011). From that moment, the participation rate of women is likely to continue to increase only slightly, mostly due to higher educational levels.

⁴⁴ Low educated occupations are defined as those occupations where more than 50% of the employees have a VMBO, MBO1 or AVO diploma in 2001. High educated occupations are defined as those occupations where more than 50% of the employees have either HBO or WO education in 2001. Middle occupations are all other occupations.

Figure 5.17 Increasing labour-force participation rates of women and older workers are important secular trends for labour-supply developments



Source: own calculations based on Dutch LFS-data.

The upward trend in participation among older workers is to a large extent due to policy changes. The financial incentives to retire early have been abandoned, which brought about substantial labour-supply reactions (Euwals *et al.*, 2009). The increase in the labour-force participation of older workers has surpassed even the reaction based on financial incentives solely. Social norms and reference ages have added to it (Van Erp *et al.*, 2014). Since the statutory pension age will rise stepwise from now on, we expect a further increase in the labour-participation rate of older workers in the future.

5.5.3 Speed of recovery

Unemployment is the result of two opposing forces of labour demand and labour supply, so unemployment will recover slowly in the aftermath of the Great Recession if employment is slow to recover, or if labour supply recovers quickly. Below we discuss these and present the uncertainties regarding the factors involved.

The speed of recovery of labour demand

The speed of recovery of labour demand will depend first and foremost on the recovery of aggregate product demand via exports and consumption. If these factors recover, then labour demand will most likely follow with some lag time. Employment growth usually lags behind GDP growth by approximately half a year, since firms do not immediately open new vacancies if demand increases. Even if firms open new vacancies immediately, it takes a while to hire workers (CPB, 2010, p. 34).

In addition to the usual lag between GDP recovery and employment recovery, we cannot exclude the possibility of a longer period of jobless recovery. There are several reasons why this might occur. First, wages may not have declined enough to accommodate both the decline in productivity and the high unemployment rate. Second, firms may still have some redundant employees in their workforce (some labour hoarding may thus still be present). Third, the number of jobs might be low in the transition phase of structural shifts between occupations or sectors (see above). Fourth, firms might not be confident that the recovery of the economy will be strong. In all cases, labour-market adjustments will likely take more time and employment will probably lag further behind GDP recovery.

Wage developments during the crisis affect the pace of recovery of employment. Dutch real wages have developed in tandem with labour productivity (section 5.2), but do not seem to have absorbed the high unemployment rates. As long as wages are high, firms will only slowly increase labour demand. This increases the probability that a period of jobless recovery will be observed in the aftermath of the Great Recession. The current situation is, however, not as severe as it was in the 1980s, when real wages had not even absorbed the productivity slowdown, let alone the pressure that came from the high unemployment rate (see Figure 5.4).

Continued labour hoarding during a recession is associated with an initial period of jobless growth following a recession (OECD, 2010, p. 76). It therefore matters for the speed of employment recovery whether the current low productivity level is due to labour hoarding or to other factors. If there is still labour hoarding at the end of the recession, then employment will recover only slowly because firms have backlogs of workers who can become more productive— in terms of both in doing more productive work and in increasing their number of hours (OECD, 2012, p. 104). The problem is that there is hardly any substantial source of information about the reason for the current low productivity, see Chapter 4. It might be a remainder of labour hoarding, but we cannot be sure. This is an important uncertainty for the speed of employment recovery.

The speed of recovery of labour supply

Labour-market institutions are important for the speed of recovery of labour supply. We have emphasized that Dutch labour-market institutions are currently stimulating participation. Replacement rates are not high compared to other countries; maximum durations of unemployment benefits have been shortened, policy reforms have been adopted to stimulate disabled people to go back to work, early retirement schemes have been abolished, income taxes provide incentives to work and active labour-market policies are actively used to get people into a job. So structurally, institutional settings are stimulating labour supply. What remains to be seen is the extent to which this will stimulate discouraged workers returning to the labour market.

On the other end, the reaction of added workers will be important as well. Labour supply might be pushed further upwards by the financial aspects of the crisis (declining housing wealth, credit constraints, deleveraging by households).

References

- Akçomak, I.S., L. Borghans and B. ter Weel, 2011, Measuring and interpreting trends in the division of labour in the Netherlands, *De Economist*, vol. 159(4): 435-82.
- Autor, D., 2011, The polarization of job opportunities in the U.S. labor market: Implications for employment and earnings, *Community Investments*, vol. 23(2): 11-41.
- Autor, D. and D. Dorn, 2013, The growth of low-skill service jobs and the polarization of the US labour market, *American Economic Review*, vol. 103(5): 1553-97.
- Autor, D.H., L. Katz and M.S. Kearney, 2006, The polarization of the U.S. labor market, *American Economic Review*, vol. 96(2): 189-94.
- Bakker, B.B. and L. Zeng, 2014, Reducing the employment impact of corporate balance sheet repair, Chapter 3 in: *IMF Jobs and Growth: Supporting the European Recovery*, Washington: IMF.
- Bassanini, A., 2012, Aggregate earnings and macroeconomic shocks: the role of labour market policies and institutions, IZA Discussion Paper 6918.
- Berge, W. van den, H. Erken, M. de Graaf-Zijl and E. van Loon, 2014, The labour market during the Great Recession: unemployment, labour supply and employment, CPB Background Document, *forthcoming*.
- Bentolila, S. and G. Bertola, 1990, Firing costs and labour demand: how bad is eurosclerosis?, *The Review of Economic Studies*, vol. 57(3): 381-402.
- Blanchard, O.J. and L.H. Summers, 1986, Hysteresis and the European unemployment problem, in: *NBER Macroeconomics Annual*, MIT Press, Cambridge, MA.
- Blanchard, O. and J. Wolfers, 2000, The role of shocks and institutions in the rise of European unemployment: the aggregate evidence, *The Economic Journal*, vol. 110(462): 1-33.
- Boeri, T. and H. Bruecker, 2011, Short-time work benefits revisited: some lessons from the Great Recession, *Economic Policy*, vol. 26(68): 697-765.
- Bonthuis, B., V. Jarvis and J. Vanhala, 2012, What's going on behind the Euro area Beveridge Curve?, ECB Working Paper 1586.
- Bouma, S., S. van der Kemp, M. van Ommeren and L. de Ruig, 2011, Samen in actie; evaluatie Actieplan Jeugdwerkloosheid, Research voor Beleid/Panteia.

- Broer, P., N. Draper and F. Huizinga, 1999, The equilibrium rate of unemployment in the Netherlands, CPB Research Memorandum 156.
- Bryan, M. and S. Longhi, 2013, Couples' labour supply responses to job loss: boom and recession compared, Institute for Social and Economic Research Working Paper 2013-20.
- Carrington, W.J., 1993, Wage losses for displaced workers: is it really the firm that matters?, *Journal of Human Resources*, vol. 28(3): 435-62.
- CPB, 2010, SAFFIER II: 1 model voor de Nederlandse economie, in 2 hoedanigheden, voor 3 toepassingen, CPB Document 217.
- CPB, 2011, *Macro Economische Verkenning 2011*, Sdu Publishers, The Hague.
- CPB, 2013, *Centraal Economisch Plan 2013*, Sdu Publishers, The Hague.
- CPB, 2014a, *Centraal Economisch Plan 2014*, Sdu Publishers, The Hague.
- CPB, 2014b, Arbeidsaanbod en gewerkte uren tot 2060, forthcoming.
- Deelen, A.P., M. de Graaf-Zijl and W. van den Berge, 2014, Labour market effects of job displacement for prime-age and older workers, CPB Discussion Paper, forthcoming.
- Driehuis, W., 1990, A disequilibrium analysis of the Dutch economy, Chapter 9 in: J. Drèze and C. Bean (eds), *Europe's unemployment problem*, MIT Press, Cambridge MA.
- Duval, R., M. Eris and D. Furceri, 2011, The effects of downturns on labour force participation: evidence and causes, OECD Economics Department Working Papers 875.
- Ende, M. van der, H. Erken and M. Streefkerk, 2010a, Lage werkloosheidsgroei ten tijde van crisis, *ESB*, vol. 95(4589): 442-44.
- Ende, M. van der, E. Hazebroek, M. Wilkens and P.D. van Heel, 2010b, *Labour hoarding door bedrijven: personeelsbeleid en strategische overwegingen*, Ecorys, Rotterdam.
- Erken, H., M. Doll and M. Raterink, 2014, De oploop van de werkloosheid verklaard, *ESB*, vol.99(4677): 42-45.
- Erp, van F., N. Vermeer and D. van Vuuren, 2014, Oudere werknemers stoppen niet alleen vanwege financiële prikkels vervroegd met werken, *TPEdigitaal*, vol. 8(1): 29-44.
- Erpelinck, K. and J.M. van Sonsbeek, 2012, Economische crisis achtervolgt jonge hoogopgeleiden, *ESB*, vol. 97(4632): 198-201.

- Es, F. van and D. van Vuuren, 2010, A decomposition of the growth in self-employment, CPB Discussion Paper 145.
- Euwals, R., M. Knoef and D. van Vuuren, 2011, The trend in female labour force participation; what can be expected for the future, CPB Discussion Paper 93.
- Euwals, R., R. de Mooij and D. van Vuuren, 2009, *Rethinking retirement*, CPB Special Publication 80.
- Friedman, M., 1968, The role of monetary policy, *American Economic Review*, vol. 58(1): 1-17.
- Gordon, R., 2010, Revisiting U.S. productivity growth over the past century with a view of the future, NBER Working Papers 15834.
- Goos, M., A. Manning and A. Salomons, 2012, *Explaining job polarization: the roles of technology, globalization and institutions*, KU Leuven Euroforum.
- Goos, M., A. Salomons and M. Vandeweyer, 2013, *Job polarization during the Great Recession and beyond*, KU Leuven Euroforum.
- Gregg, P. and E. Tominey, 2005, The wage scar from male youth unemployment, *Labour Economics*, vol. 12(4): 487-509.
- Groot, N de, R. Friperon, J. Weda and P. de Jong, 2012, *Werkt werktijdverkorting?*, APE Onderzoek en advies, The Hague.
- Guichard, S. and E. Rusticelli, 2010, Assessing the impact of the financial crisis on structural unemployment in OECD Countries, OECD Economics Department Working Papers 767.
- Henley, A., 2004, House price shocks, wind fall gains and hours of work: British evidence, *Oxford Bulletin of Economics and Statistics*, vol. 66(4): 439-56.
- Hijzen, A., R. Upward and P.W. Wright, 2010, The income losses of displaced workers, *Journal of Human Resources*, vol. 45(1): 243-69.
- Hijzen, A. and D. Venn, 2011, The role of short-time work schemes during the 2008-09 recession, OECD Social, Employment and Migration Working Papers 115.
- Hijzen, A. and S. Martin, 2013, The role of short-time work schemes during the global financial crisis and early recovery: A cross-country analysis, IZA Discussion Paper 7291.
- Hobijn, B. and A. Şahin, 2013, Beveridge curve shifts across countries since the Great Recession, *IMF Economic Review*, vol. 61(4): 566-600.

Huttunen, K., J. Moen and K.G. Salvanes, 2011, How destructive is creative destruction? Effects of job loss on job mobility, withdrawal and income, *Journal of the European Economic Association*, vol. 9(5): 840-70.

IMF, 2009, What's the damage? Medium-term output dynamics after financial crises, Chapter 4 in: *World Economic Outlook October 2009. Sustaining the recovery*, IMF Publishing, Washington D.C.

Intomart, 2010, Werkgevers over de economische crisis en over de arbeidsmarkt, Research conducted by order of the Ministry of Social Affairs and Employment.

Jong, J. de, 2011, Werkloosheid en de grote recessie, CPB Policy Brief 2011/10.

Josten, E., 2011, Werkgevers over de crisis, Sociaal en Cultureel Planbureau, The Hague.

Kahn, L., 2010, The long-term labor market consequences of graduating from college in a bad economy, *Labor Economics*, vol. 17(2): 303-16.

Kodrzycki, Y., 2000, Discouraged and other marginally attached workers: evidence on their role in the market, *New England Economic Review*, pp. 35-40.

Loon, E. van, B. Loog, A. van der Horst and M. Souren, 2014, De oploop van de werkloosheid ontleed, *TPE digitaal*, vol. 8(1): 65-83.

Mooi-Reçi, I., 2008, Unemployed and scarred for life? Longitudinal analyses of how unemployment and policy changes affect re-employment, careers and wages in the Netherlands 1980-2000, PhD Thesis, VU University Amsterdam.

Nickell, S. J., 1978, Fixed costs, employment and labour demand over the cycle, *Economica*, vol. 45(180): 329-45.

OECD, 1993, *Economic Survey of the Netherlands*, OECD Publishing, Paris.

OECD, 2010, *Employment Outlook 2010*, OECD Publishing, Paris.

OECD, 2012, What makes labour markets resilient during recessions?, Chapter 2 in: *OECD Employment Outlook 2012*, OECD Publishing, Paris.

Okun, A., 1962, Potential GNP: its measurement and significance, Reprinted as Cowles Foundation Paper 190.

Ours, J. van, 2009, Jeugdwerkloosheid in barre tijden, *MeJudice*, 24 November 2009.

Portegijs, W., M. Cloin, I. Ooms and E. Eggink, 2006, Hoe het werkt met kinderen; moeders over kinderopvang en werk, Sociaal en Cultureel Planbureau, The Hague.

Stiglitz, J.E., 1997, Reflections on the natural rate hypothesis, *Journal of Economic Perspectives*, vol. 11(1): 3-10.

Vendrik, M. and F. Cörvers, 2009, Male and female labour force participation: the role of dynamic adjustments to changes in labour demand, government policies and autonomous trends, IZA Discussion Paper 4397.

Weel, B. ter, 2012, Loonongelijkheid in Nederland stijgt, CPB Policy Brief 2012/06.

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