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A Flexicurity Labour Market in the Great Recession: The Case of Denmark

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Abstract Flexicurity labour markets are characterised by flexible hiring/firing rules, a generous social safety net, and active labour market policies. How can such labour markets cope with the consequences of *the Great Recession*? This paper takes a closer look at this question considering the case of Denmark. It is found that employment adjustment is not particularly large in international comparison, but a larger burden of adjustment is along the extensive (number of employees) rather than the intensive (hours) margin. The level of job creation is high, and remains so despite the crisis, although job creation is pro-cyclical and job-separation counter-cyclical. As a consequence most unemployment spells remain short. Comparative evidence does not suggest that flexicurity markets are more prone to persistence. Crucial for this is the design of the social safety net and in particular the active labour market policy. However, it is a challenge to maintain the efficiency of the activation system in a period with high unemployment.

Keywords Flexicurity · Financial crisis · Persistent unemployment · Active labour market policy

JEL Classification J2 · J4 · J6

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1 Introduction

Prior to the financial crisis much focus was on the concept of flexicurity. The idea that it is possible to ensure flexibility for employers and security for employers, without impairing labour market flexibility and social balances, received substantial attention. The European Commission (2007) has proposed that member countries should follow the flexicurity approach, although the definition of the concept is so broad as to make the precise meaning unclear.

Denmark is often referred to as a flexicurity case due to the combination of flexible hiring and firing rules as well as a generous social safety net. An equally important element of the model is a set of active labour market policies (ALMP) attaching conditions to the claiming of unemployment and social benefits, and also including programmes to enhance qualifications and thus job finding chances for jobless (see e.g. Andersen and Svarer 2007).

In the run up to the financial crisis unemployment was low in Denmark, and the model was thus taken to be well functioning. However, the Great Recession has also affected Denmark severely. Output has been falling by almost 6% from top to through (2008.3–2009.4) and the unemployment rate has increased by some 3–4% points. How has the flexicurity model coped with such a large shock? Since the crisis has a strong global element and affected many countries similarly at roughly the same time, these developments provide an opportunity to draw some tentative lessons on the importance of labour market institutions and policies. Despite its dire consequence the financial crisis produce a semi-controlled experiment on the implications of policies and institutions for the response of labour markets to a deep crisis.

In a flexicurity labour market with flexible firing rules it is to be expected that output declines have a large immediate effect on employment. Since it is easy to shed labour it is an immediate implication that employment should be more responsive to output reductions, and in this way the model should be more vulnerable to negative output shocks.

The unemployment rates for the OECD area and Denmark are given in Fig. 1 using OECD definitions. It is seen that unemployment in Denmark was much lower than the OECD average prior to the crisis, but also that it increased more steeply with the onset of the crisis. Although unemployment in Denmark has increased more than in many other countries, it is still low in international comparison. Though, the real question in a flexicurity labour market is not the sensitivity of unemployment to the aggregate stance of the economy, but whether it is associated with large social costs, and whether it tends to persist.

The key question is thus whether the social safety net is capable of absorbing this increase in joblessness and also whether the high level of job creation and turnover characterizing the labour market can be maintained. The latter is important to avoid a more persistent increase in unemployment (long-term unemployment) or reduction in labour force participation. One may say that the Great Recession is an ultimate test of the flexicurity model. Can it cope with this and induce a reasonably quick return to lower unemployment or will it produce a persistent increase in joblessness which in turn via the implications for public finances will make the model untenable?

There is no coherent theoretical modelling of all aspects of the flexicurity model, but it brings together a huge literature on the role of employment protection

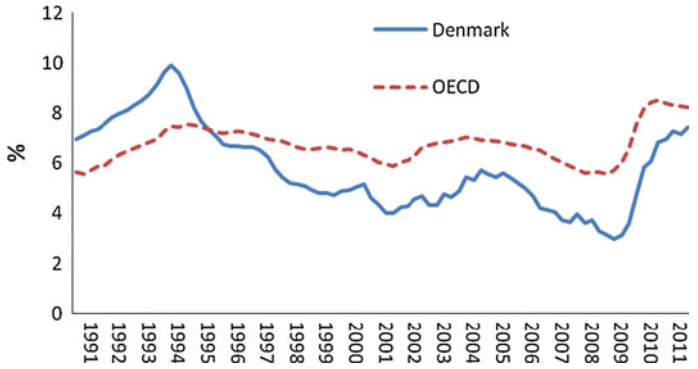

Fig. 1 Unemployment, Denmark and OECD, 1990Q1–2011Q2. Datasource: http://www.sourceoecd.org

legislation (EPL), unemployment insurance schemes (UIB) and ALMP.[1] It is beyond the scope of this paper to provide a survey and references to this very vast literature, and therefore, only a few selective points and references are made. A key trade-off is that between EPL protecting jobs[2] and unemployment benefits providing income insurance to those losing jobs. The two can be seen as alternative ways of protection workers (see e.g. Blanchard and Tirole 2008 and Boeri et al. 2006), although with potentially different implications for labour market performance.[3] While EPL tends to create a more sharp distinction between protected and non-protected workers, generous unemployment insurance raises an issue of maintaining job search incentives. However, ALMP can be used to counteract these incentive problems by associating requirements to receiving unemployment benefits, see Andersen and Svarer (2010). The Danish flexicurity model is therefore characterized by large flexibility for firms in adjusting their labour force, relatively generous unemployment benefits, and ALMP to maintain the incentive structure in the labour market and to overcome obstacles for employment. If it works it has some attractive properties, but it may be particularly vulnerable to significant drops in unemployment. This will produce a steep increase in expenditures on unemployment benefits and ALMP and thus bring the financial viability of the scheme at stake. The key question is whether the flexicurity scheme is particularly vulnerable to large negative shocks, and inherently tends to produce persistence in adjustment.

This paper takes a first look at how the Danish flexicurity model has coped with the Great Recession. It is obviously too early to make a final call on this question, but it is possible to make a mid-term evaluation of how the Danish flexicurity model has

[1] Davoine and Keuschinigg (2010) is an interesting combination of all three elements in a setting with safe and risky jobs, and unemployment concentrated in high productive and volatile sectors. See also Brown et al. (2009).

[2] The literature on EPL suggests that employment fluctuations are damped (see e.g. Nickell 1986) while the effect on long-run employment is more uncertain (Bentolila and Bertola 1990).

[3] There is also a literature pointing to the endogenous adoption of industrial structure to labour market institutions and policies, see Cunãt and Melitz (2007). See also Lommerud and Straume (2010) on how labour market institutions affect technology adoption.

coped with the crisis in order to judge whether it is on a stable or unstable track. This paper attempts to do this, and to set the scene the paper first presents some key characteristics of the Danish flexicurity model (Sect. 2) and the labour market response to the great recession (Sect. 3). Next, the paper turns (Sect. 4) to adjustment of labour input and burden sharing in the labour market. Cross-country evidence on the role of labour market institutions and policies in the form of EPL, unemployment insurance generosity and active labour market policy are considered to put the Danish situation in perspective. More specifically it is considered how adjustment of labour input is split between the extensive and intensive margin, the role of flows for the adjustment in the labour market and how the burden of unemployment is split between short-and long-term unemployment. A particularly important challenge is whether an increase in unemployment translates into a persistent increase (Sect. 5). It has been suggested that countries with more generous unemployment insurance schemes are more prone to persistence. The evidence in support of this hypothesis is considered, and the role of ALMP in minimizing the risk of persistence is addressed (sect. 5). The paper ends by offering a few conclusions on the lessons to be drawn from the Danish experience (Sect. 6).

2 The Danish Flexicurity Model

The main ingredients of the Danish flexicurity model are well-known, and the following gives a brief overview relevant for the latter discussion. More detailed accounts can be found in e.g. Andersen and Svarer (2007), Jørgensen and Kongshøj Madsen (2007), and Strøby-Jensen (2008). Table 1 summarises country indicators on employment protection (EPL), unemployment benefit generosity (UIB) and ALMP. Denmark has a relative lax EPL system, generous UIB and a very active labour market policy.

2.1 Hiring and Firing Rules

For hiring and firing rules the key distinction is between blue-collar workers (hourly paid) or white collar (funktionærer) workers.

For blue-collar workers dismissal rules are settled in collective agreements.[4] For workers with short tenure there is no dismissal period, while there may be some for workers with longer tenure. As an example workers in the building and construction sector have a period of notice of 3 weeks after 1 year of employment, 5 weeks after 3 years of employment and 7 weeks after 5 years of employment.[5] For metal workers the period of notice is 1 week after 1 year of employment, and 2 weeks after 5 years of employment.

[4] In Denmark there is a tradition of having most labour market issues settled by the parties in the labour market rather than by legislation.

[5] http://www.workinfo.dk/da-DK/EMNER/ID117/ID127/ID133.aspx.

Table 1 Employment protection (EPL), unemployment benefit generosity (UIB) and active labour market policies (ALMP)

EPL		UIB		ALMP	
USA	0.2	LUX	87	**DNK**	**4.8**
GBR	0.7	NZL	72	FIN	3.6
CAN	0.8	NLD	71	BEL	3.6
IRL	1.0	ESP	69	NLD	3.6
AUS	1.1	**DNK**	**68**	SWE	3.5
NOR	1.1	FRA	67	DEU	3.1
POL	1.5	SWE	66	ESP	2.7
JPN	1.6	BEL	65	IRL	2.6
DNK	**1.8**	DEU	64	FRA	2.6
CH	1.9	AUT	61	AUT	1.8
FIN	2.1	FIN	60	NOR	1.8
AUT	2.1	CAN	52	NZL	1.7
NLD	2.4	IRL	50	CAN	1.6
SWE	2.6	JPN	45	POL	1.4
BEL	2.6	POL	42	AUS	1.4
DEU	2.6	AUS	42	ITA	1.3
NZL	2.7	NOR	38	GBR	0.9
ITA	2.8	ITA	37	LUX	0.9
FRA	3.0	GRC	33	JPN	0.7
ESP	3.2	CHE	33	GRC	0.7
LUX	3.3	GBR	28	USA	0.6
GRC	3.3	USA	28	CHE	0.4

EPL is measured by the OECD epl1 index which is defined on a scale between zero and three (more strict rules are associated with a higher value), UIB is the first year replacement rate for the average production worker, and ALMP are expenditures on active labour market policies as a share of GDP. Countries listed by their three digit ISO country codes. Denmark marked in bold
Source http://www.sourceoecd.org and OECD (2009)

The basic rule for white-collar workers[6] is 1 months notice for dismissals within the first 6 months of work, and this period is extended by 1 month per 3 years of employment up to a maximum of 6 months notice (after employment in 8 years and 7 months). It is possible to be hired as white collar worker on probation for a period up to 3 months in which case the dismissal notice is 14 days. (Funktionærlovens paragraf 2). The employee can quit the job with 1 month notice.

In case of dismissal of a white-collar worker who has been employed in the company for the last 12, 15 or 18 years, the employer should compensate the worker by 1, 2 or 3 months salary, respectively. It is possible to negotiate severance payments as part of the contract.

In case of lay-offs the employer covers unemployment benefits for the first 3 days for all types of workers who within the last 4 weeks have been employed for at least 2 weeks (Godtgørelsesdagsbetalinger). These are the only formal severance payments. Note that this has been introduced to reduce the number of short-term unemployment spells.

In general firms have great flexibility and small costs in adjusting labour along the extensive margin.

[6] In the case of sickness for more than 120 days within the last year there are special rules for dismissals with 1 month notice.

2.2 Unemployment Insurance and the Social Safety Net

The unemployment insurance system in Denmark is a variant of the Ghent model with UI-funds and voluntary individual membership.[7] Contribution rates are determined politically and are the same across all UI-funds. The UI-funds are subsidized by the public sector (in a countercyclical way). Accordingly, the marginal costs from increasing unemployment are fully tax financed. Membership is open to persons with relevant qualifications for the specific UI-fund, or via regular work within its area. The unemployment benefit cannot exceed 90% of the previous wage (calculated over the last year) or a given cap (currently about 22.300 euros annually, taxable income), and it is indexed to general wage developments.[8] The maximum duration of benefits is 4 years (from 2011: 2 years), and the entitlement to benefits can be regained by regular work for at least 6 months (2011: 12 months) within the last 36 months. Moreover, certain activation requirements are associated with claiming of benefits (see below). When UI-benefits expire, the individual would normally be eligible for social assistance—which is also the case for unemployed who are not members of an UI-fund. The social assistance scheme is rather complicated since the benefit level among other things depends on age and marital status, and in addition, there are various means-tested supplements. It is therefore difficult to generalize on the fall in transfer income upon transition from UI-benefits to social assistance. A person receiving the maximum unemployment benefit would experience an income reduction of 20–40%.

It is an implication of this scheme that the replacement rate is strongly dependent on previous income, since the cap implies that the 90% compensation only applies for low income groups. In international comparison Denmark stands out by having a high replacement rate for low income groups, but not for higher income, see Andersen and Svarer (2007). For the average production worker the replacement rate is about 60%. Hence, when the Danish UI system is characterized as very generous, it has to be made with a proviso, and the flexicurity characterization of Denmark is most fitting for low income groups.

2.3 Active Labour Market Policies

For persons eligible for unemployment benefits, social assistance or start-aid[9] the basic rules are as follows[10]:

[7] This causes some selection into the scheme, that is, the membership propensity is larger among groups with a high unemployment risk, cf. Parsons et al. (1999).

[8] The current indexing formula is from a law enacted in 1990 (revised 2003) according to which all transfers are indexed on the basis of the annual wage increases 2 years earlier. If the increase is above 2%, up to 0.3% is transferred to a fund (satsreguleringspuljen) which is spent on initiatives aiming at improving the conditions for people on transfers.

[9] For the latter two groups this applies if their problem is lack of a job.

[10] http://www.ams.dk/Reformer-og-indsatser/Indsatser/Kontakt-og-aktivering/Beskaeftigelsesrettet-aktivering.aspx.

Unemployed below the age of 30 have the right and duty to an activation offer after no later than 13 weeks of unemployment. The activity should have an uninterrupted duration of 6 months.

For persons below 25 years without a labour market relevant education (and without children) the activation requirement is an education under normal conditions (study grants). In addition, the level of social assistance is reduced after 6 months unemployment to the same level as the study grant. For persons above 30 the right and duty to an activation offer is no later than after 9 months of unemployment. Though, the period is only 6 months for persons eligible for unemployment insurance and above 60 years.

After the first offer there is a right and duty to a new offer for each consecutive period of 6 months on public support, and the duration of the offer should be at least 4 weeks. Unemployed eligible for unemployment insurance with an unemployment period of 30 months have a right and duty to an activation offer for the remaining part of the 4 year unemployment benefit period (full time activation).

The activation offer can be in one of three forms each with specific rules on duration: (I) Counselling and requalification. This includes short counselling and assessment programmes as well as special projects and education in the ordinary educational system, (II) Job-training (virksomhedspraktik), this may be in the public sector or a private company, and is used for persons where there is a need to clarify the possible job prospects, or for persons who due to lack of qualifications may have difficulties in finding a job on normal conditions, (III) Employment with wage subsidy, this may be at a public or private employer and is used for retraining to upgrade the qualifications (specific skills, language or social skills) of unemployed. About 2/3 of all activations offers are of type I, and the other two types constitute about 1/6 each.

The basic ingredients of the interaction between the social safety net and ALMP in Denmark are illustrated in Fig. 2 showing both the income replacement (the upper part) and the activation policies (the lower part) depending on the duration of the unemployment spell. Thus, there is duration dependence in both the benefit level and the activation requirements. While the duration dependence in benefits is weak (long duration of unemployment benefits), the effective profile displays more time dependence due to a stepping-up of the activation requirements with duration of an unemployment spell.[11,12]

3 Labour Market Consequences of the Great Recession

Denmark was alike most countries severely affected by the financial crisis. Prior to the crisis the economy was booming, and the unemployment rate was record low, cf. Fig. 1. There were clear signs of overheating, but there was political delay in accepting the need to undertake contractionary policies. The crisis implied a drastic and

[11] It should be noted that additional employment conditionalities have been build into the scheme recently. Eligibility for the full social assistance thus has conditions on past employment, as has child support.

[12] From August 2009 the municipalities are responsible for the administration of activation for both unemployed insured and recipients of social assistance. This change has been contested due to the timing in the midst of a recession, the ability of the municipalities to offer the appropriate guidance, and the incentive structure built into to compensation of municipalities from the state.

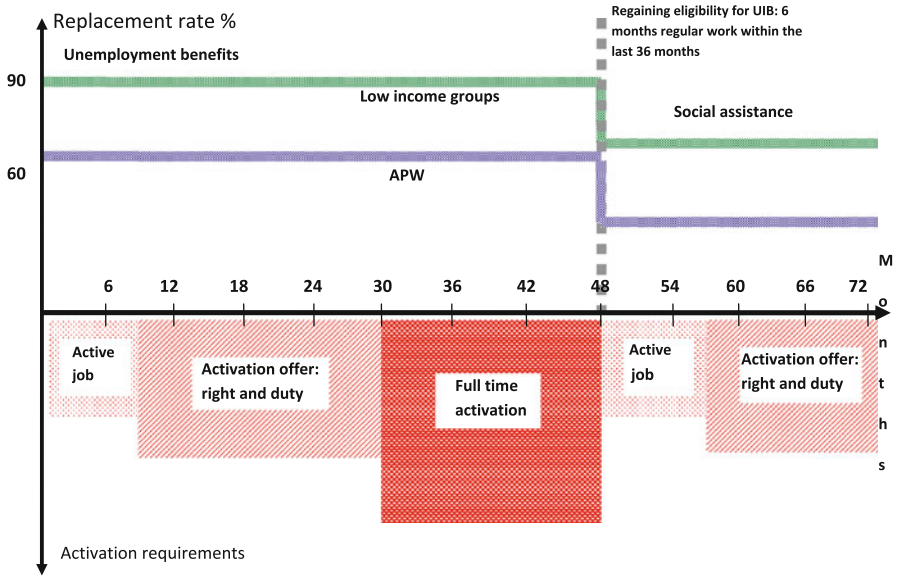

Fig. 2 Danish social safety net in case of unemployment. Diagram applies to an individual fulfilling the requirements for unemployment benefits at the moment of becoming unemployed. Social assistance is calculated on the basis of the benefits for a single person. The activation requirements are the requirements for persons above the age of 30. APW refers to the replacement rate for an average production worker

swift change in the situation, and the Danish development in recent years displays a boom-bust pattern.

The increase in employment before the financial crisis was significantly higher than implied by the historical relation between output and employment, cf. Fig. 3. This reflected a situation with shortage of labour and firms facing recruitment problems which resulted in labour hoarding. Although there was an increasing inflow of migrant workers, there were clear signs of excess demand. This situation rapidly changed with the onset of the crisis. Due to the hoarding of labour the initial employment response was sharp, and larger than what would immediately follow from the output decline, cf. Fig. 3. There has thus been some excess volatility of employment relative to the output path, but the level of employment is now aligned to output according to the historical relation between the two. The unemployment response to the crisis (Fig. 1) is thus significantly affected by the preceding boom period.

It is interesting to note that the adjustment of labour input has mainly been along the extensive dimension, that is, there has been a sharp decline in employment but only a modest change in working hours. The output drop is about 6% and employment decreased almost by the same order of magnitude with a lag of 1–2 quarters. The decline in total hours worked is only marginally larger than that of employment implying that the adjustment of working hours has not played a major role in the Danish case, cf. below.

The labour market problem created by the crisis can be assessed either from the fall in employment and hence the need for job creation to return to previous employment levels, or it can be assessed in terms of the increase in unemployment, i.e. the num-

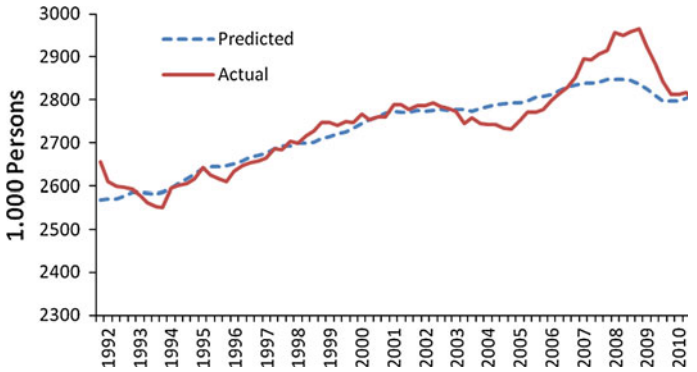

Fig. 3 Actual and predicted employment, Denmark, 1991Q4–2010Q3. Predicted employment follows from an estimated Okuns relation for the sample period 1991.4–2007.4, i.e. the sample period does not include the crisis. Estimated equation: $\ln(e_t) = a + b\ln(y_t) + c\ln(y_{t-1}) + d\ln(y_{t-2}) + e\ln(y_{t-3})$, where e is total number of employees and y gross value added in fixed prices. *Source* Own estimation based on data from http://www.statistikbanken.dk

ber who are explicitly looking for a job. These different angles leave quite different messages. Employment has decreased by 160,000 persons from the onset of the crisis in 2008.4–2010.3, while unemployment including people in activation increased by almost 80,000 persons. Roughly the decrease in employment is double the increase in gross unemployment. The huge difference may be attributed to three factors. First, unemployment statistics may underestimate the true rate of joblessness since not all unemployed are eligible for unemployment benefits or social assistance. Prior to the crisis there was a decline in membership in unemployment insurance funds, and thus an increase in the number of non-insured. Second, the strained labour market situation has induced increased enrolment in various forms of education. The previous pattern or fad among youth of working for some period as unskilled before commencing education has become more difficult due to the strained labour market situation. Changes in enrolment can account for about 1/3 of the difference between the fall in employment and the increase in gross unemployment. Finally, there may have been an outflow of migrant workers. The rise in unemployment has affected various groups quite differently. As for most countries the sharpest increase in unemployment is seen for males, youth, and unskilled.

The low unemployment rate prior to the crisis led to some wage pressure. However, the consumer real wage increased more than the producer real wage reflecting terms of trade gains (Fig. 4a). At first, this reversed a tendency for the wage share to decline (Fig. 4b), and then implied an increase in the share which peaked when the unemployment rate was at the bottom. Through the 2000s there has thus been a clear cyclical pattern in the wage share, reflecting mainly some variations in labour productivity.

In the period up to the onset of the crisis, labour productivity was falling partly in response to the hoarding of labour (Fig. 2). The change in employment has implied a readjustment of labour productivity which is now almost back to trend (Fig. 4c). While wage increases have been relative moderate despite the low level of unemployment, it remains a fact that wage competitiveness has deteriorated (Fig. 4c). This is to some

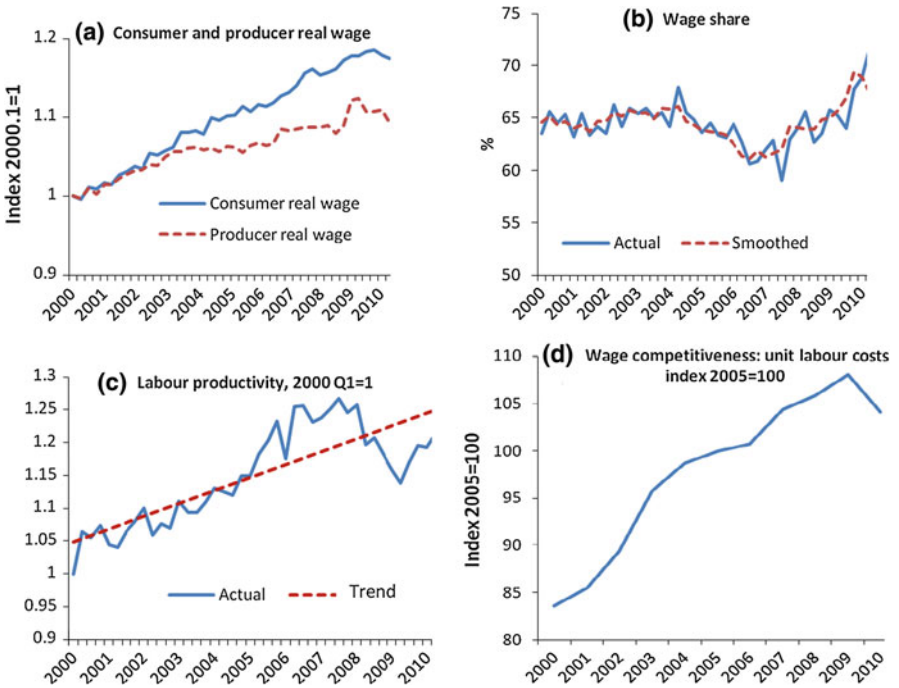

Fig. 4 Real wages, wage share, productivity and wage competitiveness, Denmark. **a** The wage is the index for private sector hourly wages, the consumer real wage is found by deflating by the implicit consumption deflator and the producer real wage by deflating by the implicit deflator for gross value added. **b** The wage share is for the entire economy. **c** Hourly labour productivity for the private sector (private byerhverv), line is the trend line, and **d** wage competitiveness measured by relative unit labour costs. *Source* http://www.statistikbanken.dk and www.sourceoecd.org

extent to be expected due to the extraordinary low level of unemployment (Fig. 1) but also reflects that trend productivity has been growing more slowly in Denmark than for its competitors.

4 Adjustment and Burden Sharing

The adjustment process in the Danish labour market is of interest in its own right, but also in the broader perspective of the lessons to be drawn on the role of flexicurity labour market institutions. The following considers these issues by addressing some key aspects where the Danish developments are seen in comparative perspective and related to labour market institutions and policies.

4.1 Adjusting Labour Input

It is to be expected that employment is more sensitive to output in a country with more lax employment protection. As already noted, the adjustment of labour input in

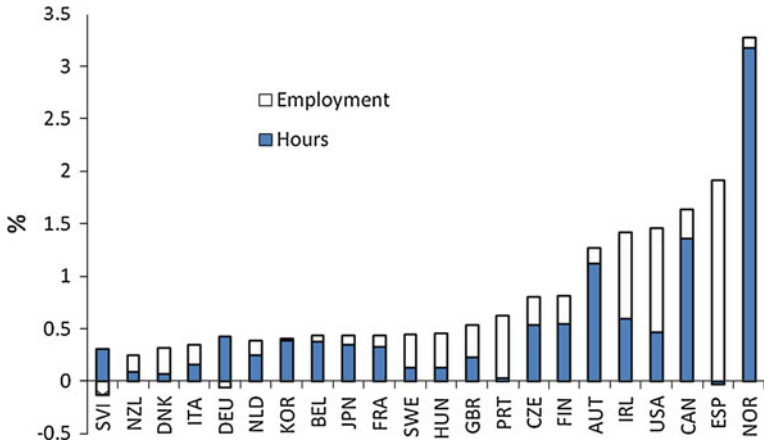

Fig. 5 Great recession—adjustment of total labour input relative to output change decomposed in hours and employment adjustment. Change measured from peak to trough during the 2008-2009 recession (quarterly data). Total change in labour input is decomposed into changes in hours per worker and number of employees. Datasource: OECD (2010)

Denmark has mainly been via the number of employees, and working hours has only been moderately changed. Lax EPL and a generous social safety net reduce the costs of adjusting labour along the extensive margin, while strict employment protection may make hours adjustment a cheaper mode of adjustment.

The adjustment of labour input relative to the output change is in Fig. 5 decomposed in the change in hours and employment for OECD countries. There is quite substantial variation in the adjustment of labour input relative to the output change, but also substantial differences in the role played by hours relative to employment. Denmark does not stand out among the countries with the largest changes in labour input relative to output, and the relatively large burden taken by employment is seen again here.

The relative burden of labour input adjustment between hours and employees depends on the relative costs of changing along the intensive and extensive margin. The strictness of EPL is important for these costs, and adjustment of hours is likely to be relatively more important the stricter the EPL-regulation is. However, in the case of sufficiently large changes in output, and thus needed labour input, it may be inevitable to adjust the labour force, even if it is costly. It is seen from Fig. 6 that there is a tendency that in countries with stricter EPL, a larger adjustment burden falls on hours than on employees. The exceptions are the outliers Spain and Portugal having large changes in the number of employees relative to the output change despite relatively strict EPL-regulation. However, there is no significant relationship between the share of working hours in labour adjustment and labour market institutions/policies,[13]

[13] Consider the following regression for 17 OECD countries included in Fig. 6

$$\underset{}{\text{Ln (share)}} = \underset{(3.41)}{5.55} + \underset{(0.26)}{0.24}\ln(\text{EPL}) - \underset{(0.91)}{0.31}\ln(\text{UIB}) + \underset{(0.11)}{.07}\ln(\text{ALMP}) - \underset{(0.11)}{0.15}\ln(\text{output change}),$$

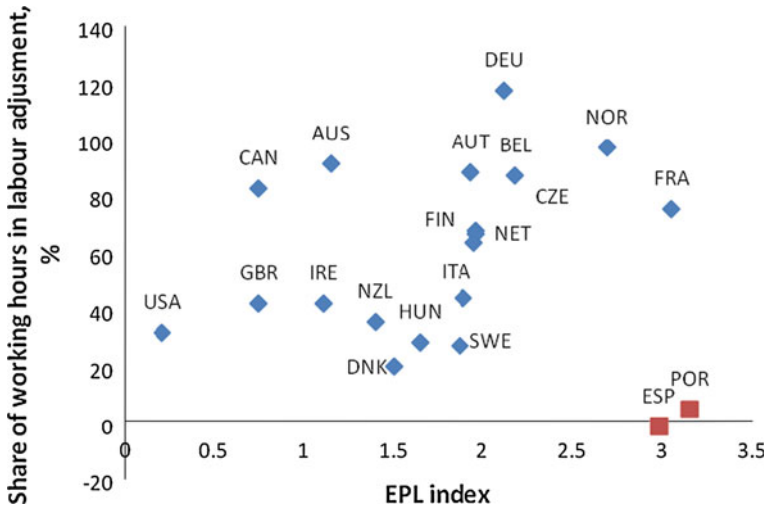

Fig. 6 Share of labour input adjustment via hours and EPL. Share of working hours in labour adjustment computed from date in figure, EPL index as in Table 1

although Denmark fits into the theoretically expected case with working hours playing only a minor role in the adjustment of labour input.

4.2 Inflow and Outflow from Unemployment

In a labour market in which it is easy to dismiss people it is to be expected to find a large inflow into unemployment. At the same time flexibility is associated with a high level of job-turnover and thus exit from the pool of unemployed. This is an important characteristic of the Danish labour market, and Fig. 7 shows that the gross level of both job creation and destruction is high in comparative perspective.

The level of the gross flows are related to labour market institutions/policies. Table 2 presents the results of a simple regression where the flows are related to the labour market institutions/policies as summarized in Table 1. Clearly there are substantial measurement problems associated with summarizing labour market institutions and policies in such crude measures, and the following is only providing indicative evidence on the potential role of labour market institutions and policies. It is seen that less strict EPL and a more generous UIB are associated with a higher level of gross flows in the labour market, that is, higher job separation and hiring rates. Hence, in a flexicurity labour market there is a large risk of unemployment, but also a larger chance of finding a job again.

Footnoe 13 continued
$R^2 = 0.18$ where "share" is the share of hours in adjustment of labour input (cf. Fig. 5), labour market institutions are measured as in Table 1, and output change is the numerical value of the change in output. Numbers in parenthesis are standard errors.

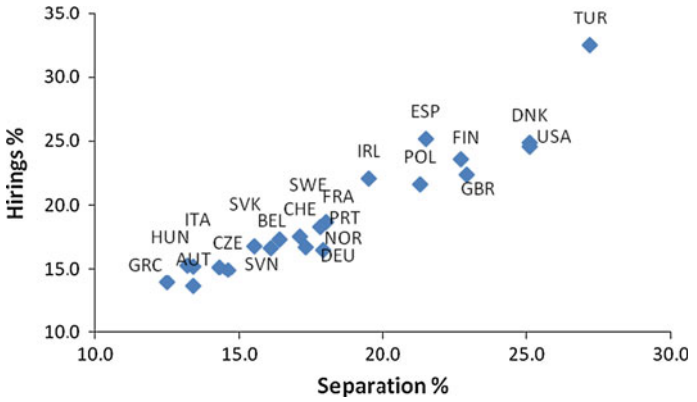

Fig. 7 Job creation and destruction, OECD Countries, 2000–2005. Percentage rates adjusted by industry composition. Datasource: OECD (2009)

Table 2 Labour market flows and labour market institutions

	EPL	UIB	ALMP	Constant	R^2
Separations	−0.27**	0.38	0.03	1.61	0.33
	(0.10)	(0.30)	(0.12)	(1.08)	
	−0.28**	0.45**	NI	1.38**	0.38
	(0.10)	(0.16)		(0.58)	
Hirings	−0.31**	0.35	0.06	1.70	0.47
	(0.10)	(0.27)	(0.11)	(0.96)	
	−0.32**	0.47**	NI	1.26**	0.50
	(0.09)	(0.14)		(0.53)	

Separations and hirings measured as in Fig. 7, and labour market institutions/policies as in Table 1. Numbers in parenthesis are standard errors. NI = variable not included, insignificant variables left out

High levels of gross flows imply that many are affected by unemployment but in most cases only for a short period. Figure 8 shows the survival rate for the group of unemployed at two different dates, at the peak prior to the crisis (2008.2), and in the midst of the recession (2009.3).

As expected the exit from unemployment is quicker in the boom than in the recession period, reflecting that the job finding rate is pro-cyclical. However, even in the midst of the financial crisis the exit rate from unemployment is strikingly high. After 13 weeks about 60% have left the group of unemployed, and after 26 weeks 80%. Hence, even during the recession there are large gross flows in and out of jobs and many are affected by unemployment only for a short period. The large incidence of short term unemployment remains despite the increase in unemployment.

The anatomy of unemployment is seen by considering the number of persons affected by unemployment in full-time equivalents (2010). Among those affected by unemployment about 1/3 are unemployed for less than 1/3 of the year, and in terms of full time equivalents this contributes only about 1/10 to total unemployment. About

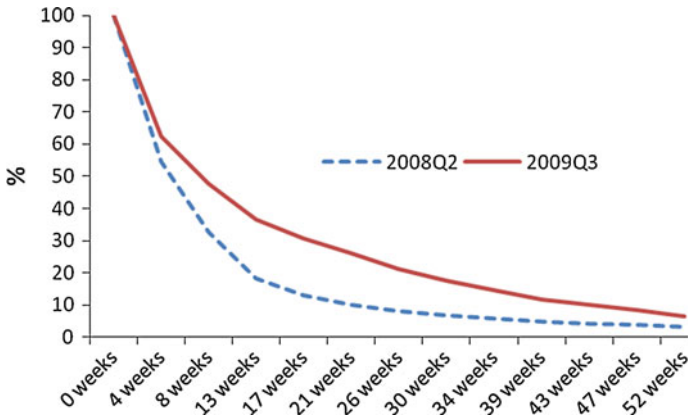

Fig. 8 Survival function unemployment including activation, Denmark, 2008Q2 and 2007Q3. Survival rate applies to the group of gross unemployed, i.e. unemployed and persons in activation. *Source* http://www.jobindsats.dk

1/5 of those affected by unemployment within the year are unemployed for at least 4/5 of the year, and in terms of full time equivalents they account for 3/4 of total unemployment. In short, the number of people affected by unemployment within the year is more than twice the number of unemployment in full time equivalents, due to the high incidence of short term unemployment. Many are affected by short spells of unemployment, but the burden of unemployment rests on a small group of long term unemployed.

The high gross flows in the labour market are also reflected in the perception people have concerning the possibilities of finding a job if being laid-off. In Eurobarometer surveys close to 70% answer that they are fairly or very confident that they can find a job if they are laid off. This is the highest rate for any EU country (Eurobarometer 2010). This shows that the risk associated to a particular job is not associated with a general perceived risk concerning the possibility of finding a job or being unemployment. This is consistent with the large gross flows and the high job finding rate, cf. above.

The high incidence of short term unemployment and relatively few long-term unemployed is related to labour market institutions. Figure 9 shows the share of short term and long-term unemployment and the EPL-index. It is seen that labour markets with low EPL tend to have a high incidence of short-term unemployment, but a low level of long-term unemployment, and vice versa. This reflects the larger gross flow, and thus, a smaller concentration of unemployment on the long-term unemployed. This is consistent with the finding that short-term unemployment is a dominant type of unemployment in Denmark.

Table 3 confirms that strict EPL tends to imply that short term unemployment constitute a smaller share of total unemployment, while long-term unemployment constitutes a larger share. Unemployment benefit generosity tends to have the opposite effect (though not significant for short-term unemployment). This can be interpreted as showing that temporary lay-offs are easier with higher benefit generosity, and that this

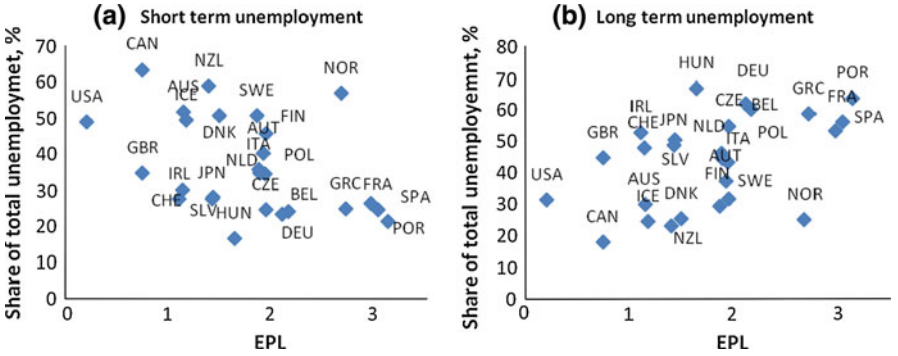

Fig. 9 EPL and short and long-term unemployment, 2009. Short term unemployment is duration less than 3 months, long-term unemployment is duration longer than 6 months. EPL as in Table 1. Datasource: http://www.sourceoecd.org

Table 3 Short and long term unemployment and labour market characteristics

	EPL	UIB	ALMP	Constant	R^2
Short term unemployment	−0.31**	0.28	0.07	2.64	0.27
	(0.13)	(0.47)	(0.19)	(1.72)	
	−0.20**	NI	NI	3.70**	0.26
	(0.11)			(0.09)	
Long term unemployment	0.36**	−0.57	0.02	5.70	0.29
	(0.14)	(0.49)	(0.20)	(1.80)	
	0.35**	−0.53*	NI	5.58**	0.29
	(0.13)	(0.28)		(1.05)	

Estimations for 21 OECD countries. Share of short and long term unemployment measured as in figure 14, and EPL, UIB and ALMP as in Table 1. All variables are in logs. Standard deviations in parenthesis. * Significant at 10%, ** significant at 5%. NI = variable not included, insignificant variables left out

dominates possible long-term disincentive effects (see below). ALMP do not influence the split between short- and long-term unemployment.

It is a stylized fact that an increase in unemployment is associated with a disproportionate large increase in youth unemployment. This reflects pro-cyclical hiring rates. In labour markets with larger gross flows it is thus to be expected that youth unemployment is less strongly affected. In fact, Denmark is among the countries with a relative low share of the unemployment increase carried by youth. This may be attributed both to the larger gross flows in the labour market and thus higher job finding rates and to the strong requirements on unemployed youth, see above.

The preceding shows that the Danish labour market is characterized by a large adjustment of labour input taking place via the number of employees (the extensive margin). In accordance with cross country evidence gross flows in the flexicurity labour market are large, implying that job separation rates and hiring rates are high. The high level of flows has been maintained during the crisis, although job separation and findings rate have been affected. These characteristics imply that a large share of

unemployment is falling on short term relative to long term unemployment, that is, many are affected by unemployment, but most unemployment spells are short. The Danish experience fits in this way well into what should be theoretically expected, and cross country evidence on labour market adjustment and institutions.

5 Persistence and the Social Safety Net[14]

A concern in the present situation is that the increase in unemployment becomes persistent as was the case in many countries during the 1970s and 1990s. Possible causes of persistence in the labour market include depreciation of human capital increasing with the length of unemployment spells, changes in the wage setting mechanism if it is primarily affected by insiders (the employed) with little weight given to the outsiders (unemployed), or a reduction of production capacity as a response to the crisis. The key question here is whether these sources of persistence are strengthened by the social safety net.

5.1 Labour Market Institutions and Persistence

Ljungqvist and Sargent (1998) describe a generous welfare state as a "time bomb" in the sense that it may operate efficiently in tranquil times but be vulnerable to turbulence which easily translates into persistent unemployment.[15] The latter is caused by weakened job search activities and higher reservation wages due to a generous social safety net. In particular, shocks tend to depreciate skills and thus require workers to accept a wage cut to find a new job, but unemployment benefits depending on past wages tend to create inertia in the adjustment of reservation wages. As a consequence the safety net hinders the process of restructuring the economy. It is also asserted that a generous tax financed social safety net reduces mobility across jobs (Ljungqvist and Sargent 1995). This may contribute to reduce frictional unemployment, but induce higher structural unemployment in a situation with turbulence.

A different explanation of persistence has been advanced by pointing to the role of norms in counteracting the incentive effects of a generous social safety net (see e.g. Lindbeck 1995 and Lindbeck et al. 2003). A strong norm to be self supporting counters the economic incentives created by a generous scheme. Allowing for the norm to be endogenous and depending (possibly with a lag) positively on the number of individuals being self-supporting implies that a generous social safety net can be maintained if the employment rate is high. However, if employment falls due to e.g. a severe business cycle downturn, norms may be eroded, and the welfare state is caught in a situation with persistent non-employment and fiscal problems.

[14] This section builds on Andersen (2011).

[15] A possibility of multiple equilibria also arises when taking into account the financing of the safety net. Similarly if incentive problems are countered by costly monitoring, the effectiveness of such monitoring is higher at low levels of unemployment reinforcing this situation, and oppositely in a situation with high unemployment (Ljungqvist and Sargent 1995).

While there is a voluminous empirical literature addressing the role of various institutional factors including the social safety net for labour market performance (see e.g. Blanchard 2006 for a survey and discussion), there are very few studies which explicitly address the persistence issue.[16] Two different conceptual issues are at stake; namely, on the one hand the structural unemployment rate, and on the other hand the responsiveness of the labour markets to shocks. The latter involves both the impact effect (volatility) and the adjustment process (persistence). These issues are clearly highly relevant in the current situation where there have been large decreases in employment. These changes are irreversible, but it is crucial to minimize the extent to which this translates into persistent reductions in employment. Accordingly the following takes a closer look at the empirical support for the "social safety net" sclerosis hypothesis.

It is not straightforward how to measure persistence in the adjustment process. Ideally one would want to separate exogenous persistence (driven by persistence in shocks) from endogenous persistence (driven by adjustment mechanisms in the system). Obviously this is very difficult and will invariably rely on identifying assumptions which may be open for debate. It is beyond the scope of this paper to go into details with this, and autocorrelation in unemployment is used as a simple measure of persistence.[17]

It is an important question whether there is any relation between the volatility and persistence in the labour market. Is it the case that labour markets exposed to volatile shocks also display more persistence, or the reverse? Figure 10 presents two measures of volatility in the labour market; namely, the standard deviation of unemployment and the gross job flows (sum of job separations and creations). For both measures there is a weak positive correlation with the persistence measure. Hence, it does not seem that countries with low volatility are more exposed to persistence in the adjustment process, neither is it clear that more volatility is associated with more persistence.

A different perspective on the role of shocks for persistence can be taken by considering large unemployment crises. In Andersen (2011) a large employment crises is defined as a fall of 3% points or more in the employment rate within a 3 year period, and this leaves 18 such events among OECD countries over the period 1970–2007. All these cases display very strong persistence in the sense that there are no cases where employment has recovered to pre-crisis levels within 5 years and only few instances where it is the case within 10 years after the onset of the crisis. There is thus evidence that deep employment crises tend to be highly persistent.

The next step is to consider whether there are any empirical regularities linking persistence to policy design and institutions in the labour market. This is a difficult endeavour since the metrics of persistence are imprecise and since it is difficult to characterise and summarize policies and institutions in a few simple measures. The following takes two different approaches to measuring the extent of the social safety

[16] Van der Noord et al. (2006) find a weak positive relation between persistence measured by the half lives of output gaps and social expenditures as a share of GDP.

[17] In Andersen (2011) various other measures are considered, and they are all closely correlated. The measures include the autocorrelation for HP-filtered data and so-called sign metric. It may be debated whether the unemployment rate or the employment rate is a better measure of the labour market situation, but the persistence metric varies little across these variables.

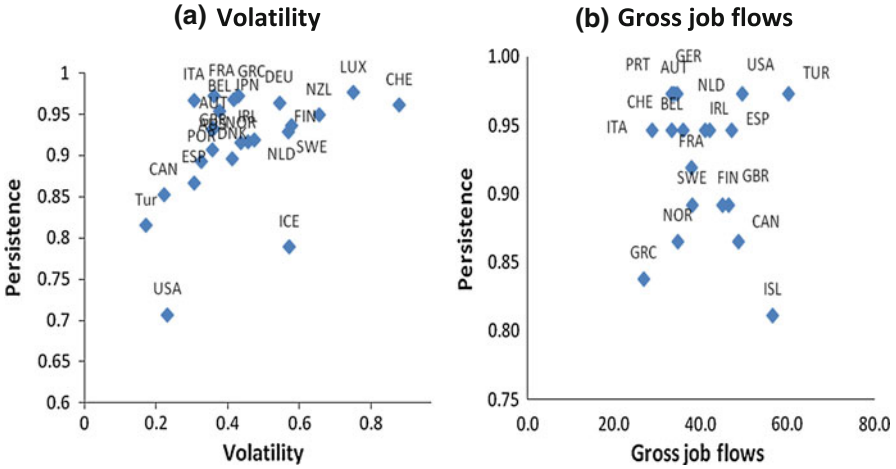

Fig. 10 Labour market volatility, gross flows and persistence. **a** Volatility, **b** gross job flows. Persistence is the autocorrelation for unemployment over the period 1970–2007. Volatility is the standard deviation of the unemployment rate over the period 1970–2007. Gross job flows is the sum of hiring and separation rates over the period 2000–2007. Data: http://www.sourceoecd.org

net, namely the size of automatic stabilizers and the indicators characterizing labour market institutions/policies (See above).

Automatic stabilizers play an important role in the macro literature since they measure the extent to which income variations are absorbed by the public budget and in this way cushion disposable income to shocks. The quantitative size of the automatic stabilizers reflects in a summary way the consequences of how the social safety net and its financing are arranged. Hence, it can be taken as a simple measure of the generosity of the social safety net in the wide meaning of including the state dependencies of transfer, taxes and expenditures. Figure 11 gives a cross plot of automatic stabilizers and unemployment persistence. There is no clear relation between the two. Interestingly the group of countries with the strongest automatic stabilizers (DNK, SWE, NLD) has a lower level of persistence than a large group of countries with middle-sized automatic stabilizers suggesting a non-linear relationship[18]

Finding that persistence is only weakly related to the size of automatic stabilizers may reflect that the latter is a too summary measure, and that a clearer picture may emerge by considering indicators of labour market institutions and policies. In the following the role of EPL, generosity of the unemployment insurance scheme, and ALMP are considered. Table 4 shows the results of a simple regression relating a measure of unemployment persistence to policy/institutional indicators. It is seen that more strict EPL tends to produce more persistence, consistent with the finding that the

[18] The relation between persistence and the automatic stabilizers may be non-linear. Estimating unemployment persistence on automatic stabilizers in levels and squared yields (t values in parenthesis) yields:

$$\underset{}{\text{persistence}} = \underset{(0.11)}{0.67} + \underset{(0.45)}{0.92}(\text{aut.stab}) - \underset{(0.49)}{0.77}(\text{aut.stab})^2;\ R^2 = 0.26$$

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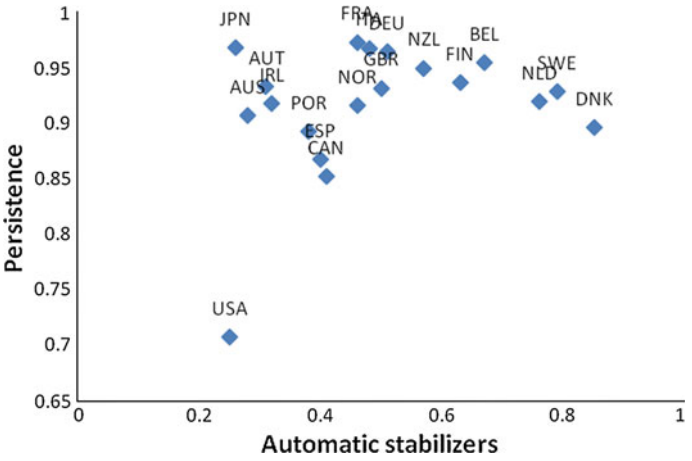

Fig. 11 Automatic stabilizers and unemployment persistence. Automatic stabilizers metrics are from Van der Noord (2000), unemployment persistence measured by the autocorrelation over the period 1970–2007, cf. Fig. 10. Regression line: $y = 0.25 + 0.33x$, $R^2 = 0.26$. *Source* http://www.sourceoecd.org and Van der Noord (2000)

Table 4 Unemployment persistence and policy/institutional indicators

	EPL	UIB	ALMP	Constant	R^2
Persistence	0.10**	−0.06	−0.01	0.08	0.66
	(0.02)	(0.05)	(0.02)	(0.18)	
	0.08**	NI	NI	−0.13	
	(0.01)			(0.01)	0.61

Unemployment persistence measured by the first order autocorrelation coefficient for unemployment rate. Data for 21 OECD countries EPL, UIB and ALMP measured as in Table 1. Standard deviations in parenthesis. ** Significant at 5%. NI = non included, insignificant variables left out
Source http://www.sourceoecd.org

EPL tends to increase the share of long-term unemployment in total unemployment. Both UIB and ALMP have a negative effect on persistence, but neither of these is significant. In particular for ALMP it should be noted that the measure is a very crude indicator of the active orientation of policies.

Important for the present discussion, there is no evidence supporting that countries with a more extended social safety net suffer from more persistence. Nonetheless, as noted above, this is not implying that persistence is unimportant for countries with an extended welfare state. Quite the contrary the strong automatic budget responses imply that persistent declines in employment rates will have dramatic consequences for public finances. It is interesting to note that the countries with extended social safety nets are among the countries which prior to the financial crisis did most to consolidate public finances and undertake reforms to address fiscal sustainability problems arising from ageing.[19] It is also the case that the problem of persistence is related to policy

[19] In European Commission (2009) on fiscal sustainability the Scandinavian countries are found to be among the countries with the smallest sustainability problems.

responses. In the past Denmark has suffered from persistent unemployment, and a change of the flexicurity model in the direction of a stronger focus on active elements were in bringing unemployment down, see Andersen and Svarer (2007). Therefore the ALMP are important in a forward perspective.

5.2 Minimizing Persistence: A Challenge for ALMP

The activation requirements serve to maintain focus on job search, strengthen job search incentives, and contribute to overcome qualification barriers for employment. The ALMP is thus important in ensuring that a steep increase in unemployment does not translate into persistent unemployment. However, ALMP is also strained when unemployment increases, there is a larger inflow into programmes, and they may be less effective in a recession. ALMP are extensively used and are an integral part of the Danish flexicurity model.

It is difficult empirically to discern the precise effects of activation policies. Most studies tend to focus on the direct effect in terms of locking-in effects and post-programme effects on employment. While these elements are important, activation also has crucial indirect (general equilibrium) effects, see Andersen and Svarer (2010)). Activation is part of the eligibility conditions for social transfers (unemployment benefits and social assistance) and thus serves to attach stronger requirements to receiving benefits, cf. Fig. 2. This may in turn have an incentive effect lowering the reservation requirements to jobs (type of job, location, employer, wage etc). This is sometimes termed a threat or motivation effect. There is a related screening effect since it is more difficult to claim benefits while not being interested in work or working in the black sector. Related to the above there may also be a wage effect, since activation not only has a direct effect on participants but also affects the fall back position of employed if they become unemployed. Under standard assumptions this leads to wage moderation. Hence, a proper assessment of the effects of activation is very difficult and care should be taken in making conclusions from partial analyses.

Various assessments have been made of ALMP in Denmark and the general findings are matching findings from studies for other countries, see e.g. Kluve (2006) and Card et al. (2010). In Rosholm and Svarer (2008) it is shown that in general activation has a locking-in effect. Private job training and education improves qualifications, while there is no statistical significant effect from public job training and other forms of activation. This study also finds a threat/motivation effect from all forms of activation which tend to shorten the duration of unemployment spells. Overall it is assessed that activation when taking into account the locking-in, the qualification, and the motivation effect contributes to higher job finding rates and thus lower duration of average unemployment spells.

Positive long-run employment effects from private job-training are also found in Jespersen et al. (2008), while there is no such effect from public job-training or educational activation programmes.

Danish Economic Council (2007) considers the motivation, locking-in, and qualification effects of all forms of activation. In general activation has a locking-in effect. There is a positive employment effect due to improved qualifications from private

job-training but a negative effect from other forms of activation. In addition a positive motivation effect is found. The study is not able to find any positive effects of educational activation, not even 5–6 years after participation.

Educational activation programmes are analysed in Christensen and Jacobsen (2009) with particular focus on the locking-in and motivation effects. There is no short- or long-run (5 years) positive employment effect from ordinary education for persons becoming unemployed in 2002. However, positive effects are found for persons who became unemployed in 1995. For both groups there are positive effects of private job training. It is also found that the effects of all forms of activation are better when unemployment is low (less locking-in), but the direct effect of the programme is not different across business cycle situations.

The programme "Early start" (Hurtigt i gang) has made it possible to make an experimental design of the effects of active labour market policies. In this programme half the participants received the activation offers as prescribed by existing rules while the other half received an early and more intensive intervention. The programme was first launched in 2005–2006 and later repeated in 2008–2009 to allow for a more specific evaluation of the applied activities. The general finding is that the early intervention has contributed to enhance employment prospects, corresponding to a shortening of unemployment duration spells by 3 weeks (see Graversen et al. 2007; Rosholm 2008, and Rosholm and Svarer (2009)). Cost benefit analyses show that the increased employment can cover the costs of running the programme.

It is a particular challenge to maintain effectiveness of activation policies in a period with increasing unemployment. First, the effects of activation policies may be business cycle dependent, and less effective in a downturn. Second, there is a volume increase in participants which may lead to difficulties in meeting the timing requirements (see Sect. 2), and induce a twist towards less effective programme activities due to shortage of relevant openings. Finally, the composition of the group of unemployed changes and targeting becomes more difficult. Among newly unemployed some are likely to find a new job quickly, while others are at risk of long-term unemployment. A high level of activation may thus carry a high deadweight cost.

These problems are present in Denmark. There have been problems in meeting the requirements stipulated in the rules with regard to deadlines for offering various initiatives. Moreover, the volume increase has led to incidences where the content and/or the quality of the activity have been called into question. Figure 12a shows that the number of participants in activation has almost tripled since 2008, and there has been some decline in the average duration of programme activities.

There are also signs that the effectiveness of activation is lower due to the present situation in the labour market. Figure 12b displays the share in employment after various horizons for participants in activation programmes. It is seen that there is a clear decline in recent quarters. This reflects lower job finding rates, and it is a concern since it increases the risk that a larger group becomes long-term unemployed.

Note that the challenge of maintaining extensive activation policies during a recession has two sides. One is related to the financial burden due to a larger inflow into programmes if intensities are to be maintained as well as the effectiveness of the programme activities in the presence of high unemployment. The other is that the

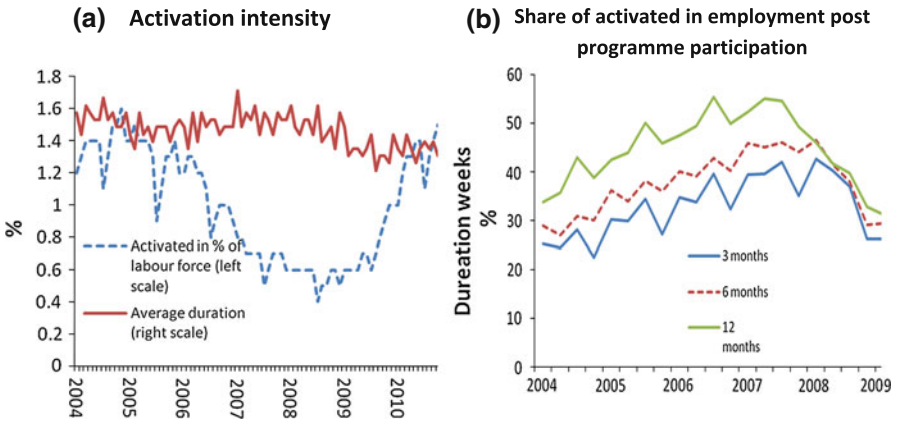

Fig. 12 Activation intensity and average duration. **a** Activation intensity, **b** share of activated in employment post programme participation. **b** Share of activated in employment a given number of months after having participated in an activation programme. Datasource: http://www.jobindsats.dk

political support for ALMP may weaken in a period with low labour demand and examples of not well-functioning activation programmes.

6 Concluding Remarks

The Danish labour market has been severely affected by the Great Recession. However, in comparative perspective the unemployment rate remains below the OECD average, and moreover the level of gross flows remains high as does the incidence of short term unemployment spells. However, open issues remain, in particular concerning the effectiveness of ALMP in a deep recession. The system is challenged by the cost pressure driven by the volume increase and the problem of maintaining efficiency of programme activities in a period with a lower job finding rate. However, it is crucial to prevent an increase in long-term unemployment which both has social costs but also will affect public finances severely. In a flexicurity model with relative generous benefits and a high tax rate the budget sensitivity is high and the financial viability of the model thus hinges on maintaining a high employment rate. Although the model in the past has been successful in avoiding persistence, it is too early to make a call on whether a persistent increase in unemployment will be a consequence of the great recession.

The paper has put the Danish experience in international perspective by considering the role of labour market institutions and policies for labour market adjustment during the Great Recession. Cross country evidence on labour market performance and indicators of labour market institutions/policies have been considered. While more lax EPL is expected to be associated with adjustment of employment running via the extensive rather than the intensive evidence, only a weak correlation is found, although this pattern is clearly seen for Denmark. Less strict EPL regulation implies that short-term unemployment constitutes a relatively larger share of overall unemployment relative

to long-term unemployment. The Danish experience shows that the flexicurity model is associated with large flows in and out of jobs, and although job finding rates are affected by the crisis, it is still the case, that flows are large. Hence, the predominant part of unemployment is made up of short-term unemployment spells.

In a forward perspective it is crucial whether this will remain the case or whether a persistent increase in unemployment is to be expected. It is often suggested that a system with a generous social safety net, as is the case for the flexicurity model, is likely to suffer from persistence. The evidence considered does not support this, rather it is found that more strict EPL is associated with more persistence in unemployment.

Prior to the Great Recession the flexicurity model was highlighted for its sability to balance security with flexibility. It is too early to make a call on the ability of the model to cope with the crisis, but a preliminary assessment is that the model has coped reasonably well with the crisis, and that it does not seem to be more exposed to the risk of high and persistent unemployment than other arrangements. It will be an important issue for future research to further clarify the role of institutional arrangements and policies for labour market performance, and in particular the consequences of the Great Recession.

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