Youth and gender specific unemployment and Okun's law in Scandinavian countries

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Abstract

The paper investigates Scandinavian countries and its respective male and female youth unemployment rates. Okun's law is used to estimate age-cohort and gender specific Okun coefficients to make inference on the business-cycle dependence of young people across Scandinavian countries.

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1   Introduction

Youth unemployment in European Union (EU) member states has been on the rise since the beginning of the world financial crisis. This negative development was further accelerated by the crises in Europe. Especially, southern European countries have been hitting record highs in this regard (Hutengs and Stadtmann, 2013a). Similarly, youth unemployment problems have been identified in central and eastern European economies, such as Poland or Hungary (Hutengs and Stadtmann, 2013b). Scandinavian countries have strong economic links to other European economies, therefore, the recent low growth period in Europe also affected the Scandinavian economies as well as their labor markets.

This paper investigates Scandinavian countries and its respective male and female unemployment rates. An EU15 aggregate of countries is used as comparison indicator.[1] Okun's law (Okun, 1962) is used to estimate age-cohort and gender specific Okun coefficients to make inference on the business-cycle dependence of young people across Scandinavian countries. We show that young people are predominantly and significantly more exposed to business-cycle fluctuations than older ones. This especially holds true for the male population.

The remainder of the paper is structured as follows: Section 2 provides a general description of the dataset and the descriptive statistics regarding youth versus total unemployment rates. We also highlight differences in male and female unemployment. Section 3 discusses the regression approach and results. Section 4 concludes.

2   Dataset and Descriptive Statistics

The dataset used for the descriptive statistics and the estimates of Okun's law consists of real annual GDP growth rates and the unemployment rate[2] for various age cohorts pro-

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[1]EU 15 includes all countries which were members of the European Union before the eastern enlargement in May 2004. A more detailed and country specific analysis of major EU 15 countries is found in Hutengs and Stadtmann (2013a).

[2]Unemployment rates are based on International Labour Organisation (ILO) standards ensuring comparability among different countries.

vided by the Organisation for Economic Co-operation and Development (OECD, 2013). The joint dataset starts in 1984 for all countries except Iceland (1992) and ends in 2011.[3]

The youth unemployment, i.e. people between the age of 15 and 24 years, trend in Scandinavian countries provides insights in differences and similarities among Scandinavian economies.

- Figure 1 shows that all Scandinavian countries, with the exception of Norway, show rising unemployment figures in recent years. This can clearly be attributed to the ongoing weak GDP growth since the financial crisis. Nonetheless, data for most countries also indicate the possibility of decreasing rates as of late. There is no such indication for the Danish economy. Norway's development does not resemble the performance of the remaining countries. In fact, its unemployment rate has been relatively flat in recent years. The reason probably lies in its role as relatively large oil and natural gas producer, thus providing its economy with additional stimulus over the last decades, when oil prices skyrocketed.

- When looking on the development in the last decade, Scandinavian countries can be classified by their unemployment trend. Norway, Denmark and Iceland show a relatively flat development since the start of the century and an increase in recent years with the exception of Norway. Sweden shows an general upward trend which has been strengthened by the recent crisis. On the contrary, Finland, the only Scandinavian eurozone member shows a downward trend, which was only slightly interrupted by the recent crisis.

- Some countries like Sweden, Iceland and Denmark exceeded their previously highest level of youth unemployment rate. Rates in those countries rose towards 20% or in the case of Sweden already surpassed this level.

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[3]Countries included in the study with number of observations per cohort: Denmark, Finland, Norway, Sweden, EU15 (28 years) and Iceland (22 years).

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Insert Figure 1 about here

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Table 1 compares the differences between youth unemployment and total unemployment across countries and over time. We would expected youth unemployment rates to be larger than the total unemployment rates, because young people are endowed with fewer skills and are less experienced than their older peers which in turn makes employment less likely (OECD, 2010). Furthermore, labor market institutions can directly influence the level and difference between both rates. The European Economic Advisory Group (2013, p. 86) argues, for example, that a minimum wage adversely affects young people by artificially lowering pay differences between younger and older workers, thus directly decreasing young people's employment chances during a recession. Nonetheless, youth unemployment rates are not independent of the total unemployment rate. Both usually move into the same direction (Brenke, 2012).

Furthermore, Table 1 reveals that Scandinavian youth and total unemployment is on average below the respective levels of EU15 countries. Only Finland comes close to the European levels, all other countries show much smaller rates.

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Insert Table 1 about here

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Figure 2 shows the development of the youth (15-24 years) to adult (25-64 years) unemployment ratio among Scandinavian countries. The ratio is not constant over time in any country. Despite some large variations, the data show an upward trend of the ratio in Denmark, Finland and Sweden since the mid 1990s. This change is strongest in Sweden where the ratio jumped from 2 to over 4, indicating that the youth unemployment problem has become more severe in Sweden than in other Scandinavian countries. Interestingly, the increasing ratio cannot be solely contributed to the recent financial and

economic crisis as it started long before its emergence. Moreover, there is no sign for a trend reversal yet.

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Insert Figure 2 about here

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Figure 3 shows a comparison between the respective male and female unemployment rate. During the observation period there is no homogeneous development of both rates among Scandinavian countries. Especially the Danish and Finnish economies showed higher female rates over a long time whereas Sweden and Iceland showed a reversed pattern. More interestingly, the recent economic crisis led to a strong gap between male and female youth unemployment, caused by a much sharper increase in the male unemployment rate. This effect might be due to the fact that the crisis had a strong negative impact on the construction and manufacturing sectors of the economies. These sectors predominantly employ males, thus strongly increasing their unemployment rates in a downturn (see European Commission, 2013).

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Insert Figure 3 about here

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3   Regression Analysis

We use Okun's law (Okun, 1962) in order to focus on the effect of business cycle fluctuations on the change in the unemployment rate. Following Knotek (2007), the difference version of Okun's law can be written as a linear regression model by

$$\Delta u_t = \alpha + \beta \widehat{GDP}_t + \varepsilon_t, \tag{1}$$

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with Δu_t as change in unemployment rate, $\widehat{GDP}_t$ as discrete real GDP growth rate and ε_t is an assumed white noise error term. The parameter β, the Okun coefficient, is expected to be negative, i.e. positive real GDP growth will lower the unemployment rate. Rather than estimating each beta coefficient for each age cohort and each country separately as suggested by equation (1), a balanced panel for each country is constructed, thus following the approach of Hutengs and Stadtmann (2013b). The panel consists of the yearly changes in the unemployment rate for five different age cohorts and the real GDP growth rate. In detail, we estimate the following panel least squares dummy variable model (LSDV) for each country:

$$\Delta u_{i,t} = \alpha_i D_i + \beta_i D_i \widehat{GDP}_t + \varepsilon_{i,t}, \tag{2}$$

where $\Delta u_{i,t}$ represents the change in unemployment rate for cohort i at time t, D_i is a dummy variable accounting for the different age cohorts and $\varepsilon_{i,t}$ is an assumed white noise error term. Thus, β_i captures the different cohort specific Okun coefficients. Common to panel analysis are the presence of heteroscedasticity, serial correlation, and cross-sectional dependencies. These effects may lead to inefficient estimates with biased standard errors and thus misleading results. We test all country panels for these properties. Thus all our reported results show panel corrected standard errors allowing inference on statistical significance.[4]

Table 2 summarizes our regression results of Equation (2). Similar to other cross-country studies (see for example Hutengs and Stadtmann (2013a), Sögner and Stiassny (2002), Lee (2000), Moosa (1997)), the Okun coefficients are negative across all countries and age cohorts confirming Okun's law. Norway stands out again by having significantly lower Okun coefficients than all other countries. This suggests that Norwegians are less affected by GDP changes than their Scandinavian peers.

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[4]Estimation results are obtained through linear regression with Prais-Winsten standard errors.

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Insert Table 2 about here

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In addition, the results provide more important insights:

- Figure 4 shows one common pattern: All Scandinavian countries have their highest absolute Okun coefficient in their youngest cohort (15-24 years). These people are most affected by business-cycle fluctuations.

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Insert Figure 4 about here

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- Furthermore, the Okun coefficient becomes smaller in absolute terms with increasing age. The decrease in the coefficient is most distinct form the 15-24 years to the 25-34 years cohort. Afterwards it levels off rather rapidly. In fact, significance tests (see Tables 3 to 8) show that the high absolute coefficients of the youngest cohort are significantly different from the lower coefficients of all subsequent cohorts. This is true for all countries, with the exception of Denmark and Norway, where the differences are not statistical significant between the first two cohorts.

- Results further show that the three oldest cohorts tend to have coefficients which are close to zero and are insignificant. Furthermore, the coefficients are not significantly different from each other as well. Thus, in Scandinavian economies people tend to be less exposed to business-cycle fluctuations while passing the age of 35.

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Insert Table 3 to 8 about here

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Splitting the overall analysis between men and women, Table 9 and Table 10 provide a similar conclusion, i.e. all coefficients are negative and decrease (in absolute terms) over time, independent of the respective gender.

Two big differences exist. First, the model fit is much better for the "male" regression than for the "female" regression as shown by higher R^2 suggesting that unemployment changes of women are not so good explained by GDP growth only. Second, as Figure 5 shows, the "male" coefficients are significantly higher than their "female" counterparts. This holds for all countries except Sweden and the EU15 aggregate. This result is in line with the already presented argument that males are predominantly employed by more cyclical industries than females. Thus, their unemployment rate reacts more strongly to any change in GDP.

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Insert Table 9 about here

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Insert Table 10 about here

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Insert Figure 5 about here

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4   Conclusion

This paper has analyzed youth unemployment in Scandinavian economies by evaluating recent unemployment trends and the differences in male and female specific Okun coefficients. The main results can be summarized as follows:

1. Youth unemployment became more severe in recent years compared to adult unemployment as a rising unemployment ratio among Scandinavian countries show. Sweden exhibits the worst development in this regard.

2. Young people (age 15-24) are most exposed to business cycle fluctuations showing the highest absolute Okun coefficients among all cohorts.

3. Male people show significantly higher Okun coefficients in absolute terms than their female counterparts because of an over-representation in cyclical occupations.

Scandinavian youth unemployment has not reached southern European levels of 50% (Hutengs and Stadtmann, 2013a) nor is it conceivable that this will happen. Nevertheless, lower absolute youth unemployment figures compared to the south should not hide the fact that young people in Scandinavia are disproportionately worse off than their older peers and require additional attention. Especially, the rising unemployment ratio in countries like Sweden and Finland indicate a bigger problem for policy makers. Unemployment in an early stage of the career has usually negative effects on life time income and career possibilities (Olofsson and Wadensjo, 2012; Bell and Blanchflower, 2011). Moreover, high youth unemployment threatens the social cohesion of the societies itself as the riots of young people in Sweden showed. An event that did not seem possible in the Nordic countries a while ago. In addition, a rising unemployment ratio might also indicate that the youth unemployment development is not only business-cycle driven but a sign of severe structural problems in the respective labor markets. The Swedish training system for example provides little working experience to its apprentices (Korpi and Mertens, 2003). In contrast, countries such as Germany and Austria with a focus on employer provided apprenticeships and thus more direct working experience exhibit lower youth unemployment rates (Hutengs and Stadtmann, 2013a).

References

Bell, D.N. and Blanchflower, D.G. 2011: Youth unemployment in Europe and the United States. *Nordic Economic Policy Review* (1): 11–37.

Brenke, K. 2012: Arbeitslosigkeit in Europa: Jugendliche sind viel stärker betroffen als Erwachsene. *Wochenbericht des DIW Berlin* (30): 3–12.

European Commission 2013: *The impact of the economic crisis on the situation of women and men and on gender equality policies*. Luxembourg: Publications Office of the European Union.

European Economic Advisory Group 2013: *The EEAG Report on the European Economy*. Munich: CESifo.

Hutengs, O. and Stadtmann, G. 2013a: Age effects in Okun's law within the Eurozone. *Applied Economics Letters* 20(9): 821–825.

Hutengs, O. and Stadtmann, G. 2013b: Don't trust anybody over 30: Youth unemployment and Okun's law in CEE countries. *European University Viadrina Frankfurt (Oder), Department of Business Administration and Economics, Discussion Paper* 333.

Knotek, E.S. 2007: How Useful is Okun's Law? *Economic Review, Federal Reserve Bank of Kansas City* Fourth Quarter: 73–103.

Korpi, T. and Mertens, A. 2003: Training Systems and Labor Mobility: A Comparison between Germany and Sweden. *The Scandinavian Journal of Economics* 105(4): 597–617.

Lee, J. 2000: The Robustness of Okun's Law: Evidence from OECD Countries. *Journal of Macroeconomics* 22(2): 331–356.

Moosa, I.A. 1997: A Cross-Country Comparison of Okun's Coefficient. *Journal of Comparative Economics* 24(3): 335–356.

OECD 2010: *Off to a Good Start? Jobs for Youth*. OECD Publishing.

OECD 2013: Labour Force Statistics: Population and labour force. *OECD Employment and Labour Market Statistics (database)* Accessed on 14 January 2013.

Okun, A.M. 1962: Potential GNP: Its Measurement and Significance. M.N. Baily and A.M. Okun, eds., *The Battle Against Unemployment and Inflation (1982)*, New York, NY: Norton, pp. 132–145.

Olofsson, J. and Wadensjo, E. 2012: Youth, Education and Labour Market in the Nordic Countries. *Friedrich-Ebert-Stiftung* .

Sögner, L. and Stiassny, A. 2002: An analysis on the structural stability of Okun's law–a cross-country study. *Applied Economics* 34(14): 1775–1787.

Table 1. Summary Statistics

Country	(1) Avg. youth unempl.	(2) Avg. tot. unempl.	(3) Δ columns (1) and (2)	(4) Max. Δ youth & total	(5) Min. Δ youth & total
Denmark	10.00	6.40	3.60	6.66	2.05
Finland	18.26	8.75	9.51	14.74	3.86
Iceland	8.79	3.89	4.90	8.71	0.00
Norway	10.02	3.87	6.15	7.98	3.09
Sweden	14.99	6.02	8.97	16.84	2.30
EU 15	18.31	9.12	9.12	12.30	6.70

Notice: (1) Average unemployment rate of the youngest age cohort in %. (2) Average unemployment rate of the total population in %. (3) Difference between column (1) and (2) in percentage points. (4) Highest value of the difference between the young and the total unemployment rate within one country over time in percentage points. (5) Lowest value of the difference between the young and the total unemployment rate within one country over time in percentage points.

Table 2. Regression Results: Okun Coefficients and Standard Errors

Country	15-24	25-34	35-44	45-54	55-64	R^2	N
Denmark	-0.755***	-0.543***	-0.297***	-0.312***	-0.256**	0.49	140
	(0.128)	(0.093)	(0.067)	(0.066)	(0.085)		
Finland	-0.667***	-0.357***	-0.249***	-0.259***	-0.261*	0.47	140
	(0.096)	(0.064)	(0.060)	(0.050)	(0.110)		
Iceland	-0.465***	-0.349***	-0.155***	-0.151***	-0.151***	0.50	100
	(0.094)	(0.079)	(0.046)	(0.041)	(0.040)		
Norway	-0.382**	-0.258**	-0.121*	-0.119**	-0.081*	0.21	140
	(0.138)	(0.085)	(0.061)	(0.039)	(0.033)		
Sweden	-0.795***	-0.390***	-0.212***	-0.193***	-0.128*	0.46	140
	(0.160)	(0.074)	(0.047)	(0.036)	(0.053)		
EU 15	-0.708***	-0.392***	-0.244***	-0.207***	-0.185**	0.63	140
	(0.077)	(0.056)	(0.047)	(0.039)	(0.060)		

Notice: (N) number of observations, standard errors in parentheses, significance at *** 1 % level, ** 5 % level, * 10 % level

Table 3. Denmark: Test for Equality of Coefficients

	$\beta_{25 \text{ to } 34}$	$\beta_{35 \text{ to } 44}$	$\beta_{45 \text{ to } 54}$	$\beta_{55 \text{ to } 64}$
$\beta_{15 \text{ to } 24}$	1.88	10.26***	13.92***	12.27***
$\beta_{25 \text{ to } 34}$	-	9.08***	7.74***	6.98***
$\beta_{35 \text{ to } 44}$	-	-	0.04	0.16
$\beta_{45 \text{ to } 54}$	-	-	-	0.36

Notice: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 4. Finland: Test for Equality of Coefficients

	$\beta_{25\ to\ 34}$	$\beta_{35\ to\ 44}$	$\beta_{45\ to\ 54}$	$\beta_{55\ to\ 64}$
$\beta_{15\ to\ 24}$	25.95***	31.16***	29.41***	12.90***
$\beta_{25\ to\ 34}$	-	8.34***	6.31**	0.90
$\beta_{35\ to\ 44}$	-	-	0.09	0.02
$\beta_{45\ to\ 54}$	-	-	-	0.00

Notice: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 5. Iceland: Test for Equality of Coefficients

	$\beta_{25\ to\ 34}$	$\beta_{35\ to\ 44}$	$\beta_{45\ to\ 54}$	$\beta_{55\ to\ 64}$
$\beta_{15\ to\ 24}$	3.02*	16.12***	14.55***	9.89***
$\beta_{25\ to\ 34}$	-	8.34***	7.83***	5.62**
$\beta_{35\ to\ 44}$	-	-	0.01	0.01
$\beta_{45\ to\ 54}$	-	-	-	0.00

Notice: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 6. Norway: Test for Equality of Coefficients

	$\beta_{25\ to\ 34}$	$\beta_{35\ to\ 44}$	$\beta_{45\ to\ 54}$	$\beta_{55\ to\ 64}$
$\beta_{15\ to\ 24}$	1.34	7.22***	4.28**	5.41**
$\beta_{25\ to\ 34}$	-	5.54**	3.57*	5.32**
$\beta_{35\ to\ 44}$	-	-	0.00	0.44
$\beta_{45\ to\ 54}$	-	-	-	0.76

Notice: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 7. Sweden: Test for Equality of Coefficients

	$\beta_{25\ to\ 34}$	$\beta_{35\ to\ 44}$	$\beta_{45\ to\ 54}$	$\beta_{55\ to\ 64}$
$\beta_{15\ to\ 24}$	16.06***	22.23***	19.15***	20.71***
$\beta_{25\ to\ 34}$	-	26.60***	13.07***	15.66***
$\beta_{35\ to\ 44}$	-	-	0.35	3.11*
$\beta_{45\ to\ 54}$	-	-	-	2.15

Notice: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 8. EU 15: Test for Equality of Coefficients

	$\beta_{25\ to\ 34}$	$\beta_{35\ to\ 44}$	$\beta_{45\ to\ 54}$	$\beta_{55\ to\ 64}$
$\beta_{15\ to\ 24}$	37.86***	83.57***	81.24***	66.62***
$\beta_{25\ to\ 34}$	-	51.62***	45.56***	15.28***
$\beta_{35\ to\ 44}$	-	-	4.44**	1.74
$\beta_{45\ to\ 54}$	-	-	-	0.24

Notice: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 9. Regression Results: Okun Coefficients and Standard Errors - Men only

Country	15-24	25-34	35-44	45-54	55-64	R^2	N
Denmark	-0.876***	-0.639***	-0.420***	-0.423****	-0.309**	0.53	140
	(0.132)	(0.109)	(0.077)	(0.074)	(0.099)		
Finland	-0.900***	-0.469***	-0.364***	-0.353***	-0.292**	0.61	140
	(0.094)	(0.074)	(0.061)	(0.059)	(0.106)		
Iceland	-0.526***	-0.381***	-0.177***	-0.171**	-0.197***	0.40	100
	(0.138)	(0.106)	(0.051)	(0.064)	(0.056)		
Norway	-0.462**	-0.343***	-0.130	-0.153**	-0.083*	0.22	140
	(0.164)	(0.104)	(0.071)	(0.056)	(0.041)		
Sweden	-0.964***	-0.504***	-0.282***	-0.238***	-0.168**	0.52	140
	(0.178)	(0.074)	(0.055)	(0.040)	(0.059)		
EU 15	-0.866***	-0.503***	-0.314***	-0.258***	-0.232***	0.71	140
	(0.087)	(0.057)	(0.043)	(0.038)	(0.064)		

Notice: (N) number of observations, standard errors in parentheses, significance at *** 1 % level, ** 5 % level, * 10 % level

Table 10. Regression Results: Okun Coefficients and Standard Errors - Women only

Country	15-24	25-34	35-44	45-54	55-64	R^2	N
Denmark	-0.622***	-0.438***	-0.162	-0.194*	-0.189	0.26	140
	(0.158)	(0.118)	(0.096)	(0.091)	(0.116)		
Finland	-0.554***	-0.311***	-0.198**	-0.236***	-0.293*	0.34	140
	(0.116)	(0.072)	(0.066)	(0.055)	(0.120)		
Iceland	-0.403***	-0.312*	-0.131*	-0.129***	-0.100	0.38	100
	(0.114)	(0.122)	(0.065)	(0.029)	(0.060)		
Norway	-0.281*	-0.155*	-0.099	-0.080*	-0.075	0.16	140
	(0.112)	(0.068)	(0.056)	(0.038)	(0.047)		
Sweden	-0.629***	-0.267**	-0.143**	-0.148***	-0.097	0.34	140
	(0.148)	(0.085)	(0.045)	(0.037)	(0.063)		
EU 15	-0.512***	-0.259***	-0.162**	-0.146**	-0.118	0.42	140
	(0.082)	(0.059)	(0.057)	(0.048)	(0.063)		

Notice: (N) number of observations, standard errors in parentheses, significance at *** 1 % level, ** 5 % level, * 10 % level
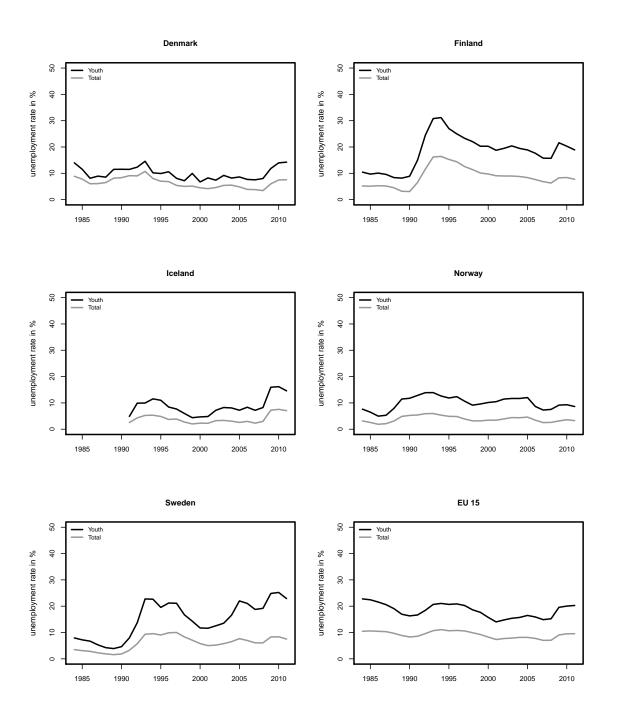
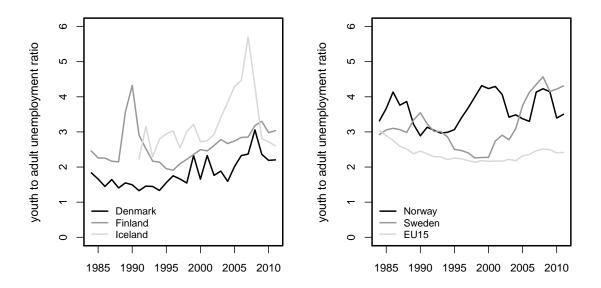Figure 1. Youth and total unemployment rates for Scandinavian countries

Figure 2. Youth (15-24 years) to adult (25-64 years) unemployment ratio for Scandinavian countries
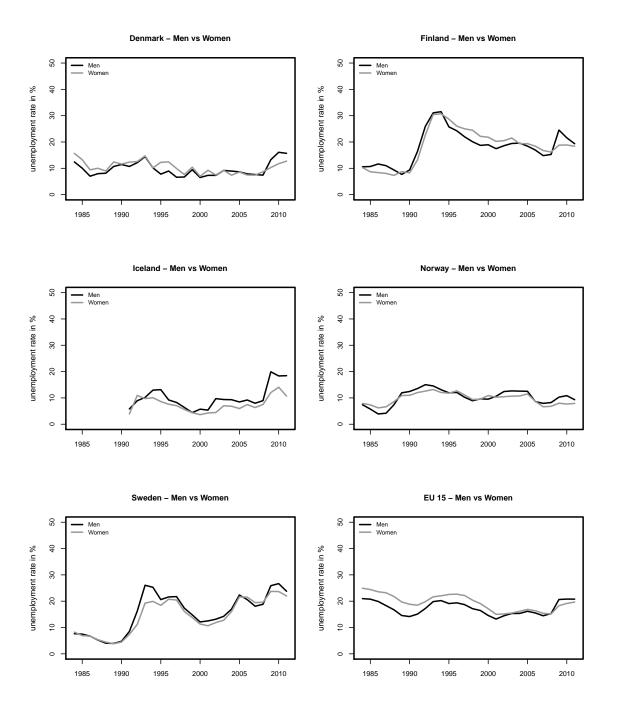
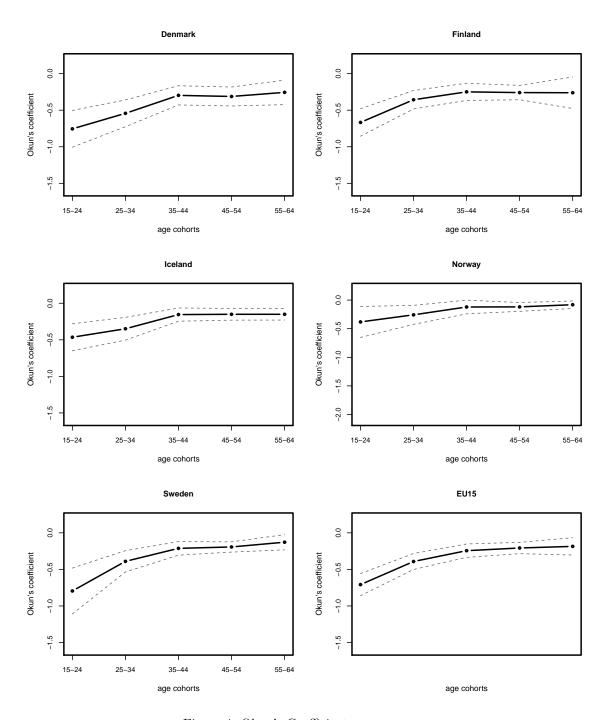Figure 3. Male and female youth unemployment rates
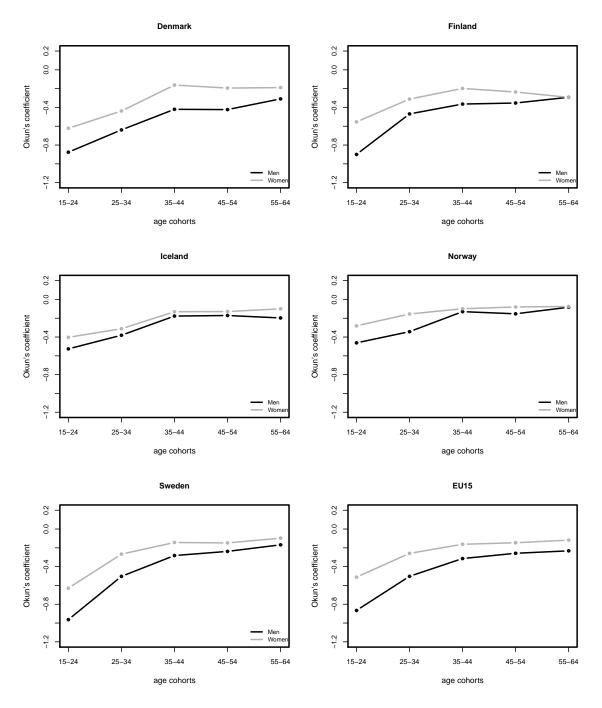
Figure 4. Okun's Coefficient over age groups

Figure 5. Male and female Okun coefficients over age groups