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Reprint of "The Scandinavian model—An interpretation"[☆,☆☆]

Erling Barth [a,*], Karl O. Moene [b], Fredrik Willumsen [b]

[a] Institute for Social Research, Oslo, Norway
[b] Department of Economics, University of Oslo, Norway

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ABSTRACT

The small open economies in Scandinavia have for long periods had high work effort, small wage differentials, high productivity, and a generous welfare state. To understand how this might be an economic and political equilibrium we combine models of collective wage bargaining, creative job destruction, and welfare spending. The two-tier system of wage bargaining provides microeconomic efficiency and wage compression. Combined with a vintage approach to the process of creative destruction we show how wage compression fuels investments, enhances average productivity and increases the mean wage by allocating more of the work force to the most modern activities. Finally, we show how the political support of welfare spending is fueled by both a higher mean wage and a lower wage dispersion.

1. Introduction

The Scandinavian countries have done well. Both Norway and Sweden experienced higher growth than the US from 1930 to 2010.[1] Among European countries Denmark ranked three, Sweden four, and Norway seven in terms of the share of occupations that intensively use information and communication technologies, all outperforming the US.[2] Scandinavian employment to population ratios of both young and older workers, and of both prime age men and prime age women, are also high,[3] and so are relative employment rates between low skilled and high skilled workers (Table 1).[4]

The high levels of work participation, income, growth and technology are the more impressive as these small open economies, with their small wage differentials and big welfare states (Fig. 1), face heavy international competition. Thus in the case of Scandinavia we cannot rely on the economists' gut feeling that strong unions and protective safety nets erode incentives for hard work and capitalist investments. Instead, we need to explore more of the details of the Scandinavian model to simultaneously account for the good economic performance, the small wage differentials and the big welfare state. In this paper we emphasize how the two-level bargaining system and a strong union involvement enhance productivity via two channels: worker efforts and capitalist investments. We also argue that there is a positive complementarity between productivity enhancing wage compression and the political support for welfare spending.

Our paper highlights the interconnection between three sets of mechanisms. The first relates to collective bargaining. We argue that the combination of central and local wage negotiations both compresses the wage distribution *and* induces efficiency at the work place, resolving to some extent the conflict between pay and performance. Both socially efficient

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* Corresponding author at: Institute for social research, pb 3233 Eisenberg, 0208 Oslo, Norway.

[1] While the US GDP per capita was 4.9 times larger in 2010 than in 1930, Norway's was 6.2, and Sweden's was 6.0 times the 1930 level. The Danish GDP became 4.4 times larger over the same period. Data from http://www.ggdc.net/Maddison, first update. Index based on 1990 (GK) USD. The Norwegian figure for 2010 is adjusted with the ratio of mainland GDP to total GDP as reported by Statistics Norway, in order to remove oil and gas revenues. One should, however, expect convergence towards the leading country and one may argue that Scandinavia has been slow compared to how fast many Asian countries have been catching up in recent decades.

[2] OECD key Information and Communication Technologies (ICT) indicators. In the Boston Consulting Group's e-intensity index ranking, Denmark is number 2, Sweden number 3, and Norway number 8 in 2012.

[3] The one exception is Swedish youths, who have employment rates below the US. Note, however, that Swedish youth have a very high participation in education.

[4] Even though employment rates are high, working hours per worker are only average or below: While the traditional OECD countries (excluding the current OECD members from Eastern Europe and developing countries such as Mexico and Turkey) have average working hours for prime age workers (25–54) of 37.1 h per week, Denmark has 35.3, Norway 35.4, and Sweden 37.1.

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Table 1
Employment population rates 2007. Percent.
Source: OECD Labor Force Statistics, extracted from OECD iLibrary. Ratio of educational groups from OECD Education at a Glance 2010.

	15–64	15–24	55–64	25–54		Ratio below upper/tertiary
				Women	Men	
Denmark	77.1	65.3	58.6	82.4	90.2	0.76
Norway	76.9	55.1	69.0	82.3	89.2	0.73
Sweden	75.7	46.3	70.1	83.0	89.0	0.75
European Union 15	67.0	41.6	46.4	71.3	87.8	0.63
United States	71.8	53.1	61.8	72.5	87.5	0.70

effort levels and wage compression are equilibrium outcomes. The work autonomy that Scandinavia is famous for, enables local union representatives to enforce effort levels that maximize the value added minus workers' costs of effort, irrespective of the wage distribution. Central wage compression is enforced by restrictions on local industrial actions, making it impossible to completely overturn the small differences in the centrally negotiated wages. The entire wage structure is thus compressed: the wage of a particular job is made up of the centrally negotiated tariff wage plus a constrained wage drift linked to the productivity of the firm.

The second set of mechanisms relates to capitalist investments. The link from wage compression to investments is best understood within a vintage approach to the process of creative destruction. The wage restraints in local bargaining imply a lower share of wage drift in each vintage of capital investments, ensuring higher expected profits and profit-induced investments. In turn, higher investments push up the demand for labor, and the level of equilibrium wages goes up. As more jobs are created in each vintage, workers become more concentrated in high productivity vintages (enterprises, firms, industries). Surprisingly perhaps, the average wage goes up with more wage restraint at the same time as the expected wage costs for each investment project decline. The explanation is simple: More creative destruction, induced by lower expected wage costs, moves a larger share of the work force to more productive enterprises, thereby raising average wages. In short, wage compression fuels capitalist investments in the process of creative destruction, increasing the average productivity and the average wage for a constant employment level.

The third set of mechanisms relates to welfare spending. We argue that the cradle-to-grave welfare state in Scandinavia obtains higher political support when the income differences in the work force are small, and when the productivity in the private sector is high. The key thing to note is that the welfare state is not a machinery for pure redistribution from the rich to the poor, but rather a provider of goods and services such as social insurance, health care, and education. As these welfare provisions are normal goods, and wage compression increases the labor income to the majority of workers, the political popularity of higher welfare spending becomes particularly high.

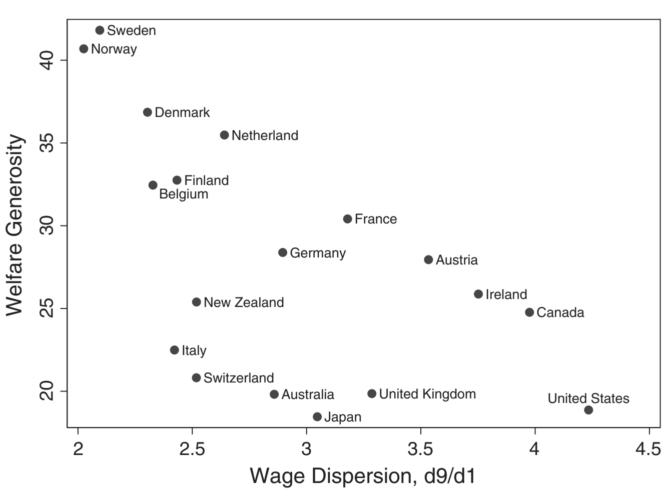

Fig. 1. Wage compression and welfare generosity. Notes: The vertical axis shows Welfare Generosity as measured by the Overall Generosity Index from the Comparative Welfare Entitlements Data set developed by Lyle Scruggs, University of Connecticut (Scruggs, 2006). Wage dispersion is measured by the ratio of the 9th to the 1st decile of gross hourly wages from the OECD earnings data base. Both series are averages over available years from 1976 to 2002.

Our paper is part of a literature on comparing welfare states (Esping-Andersen, 1990; Rodrik, 1998), on the differences between Europe and the US (Alesina and Glaeser, 2004; Alesina and Angeletos, 2005), on countries with different wage setting institutions (Calmfors, 1990; Moene et al., 1993), and on different varieties of capitalism (Hall and Soskice, 2001). We also connect to the literature discussing the rise and fall of the Scandinavian model, see Lundberg (1985), Lindbeck (1997), and the papers from the NBER project on reforming the Swedish welfare state (Freeman et al., 1997), and the literature on the pros and cons of the Scandinavian model, see Bosworth and Rivlin (1987), Olson (1990), and Layard (1991). In a recent paper Acemoglu et al. (2012) argue that Scandinavia has a form of cuddly capitalism, free-riding on more dynamic economies. We focus on the positive endogenous dynamics of the Scandinavian model, emphasizing the consistency between different parts and highlighting that wage compression induces creative destruction.

Below we offer an interpretation of the Scandinavian model that may add to the understanding of the model's surprising sustainability. Even though there are substantial differences also between the three Scandinavian countries, we emphasize three common features between them.[5] We combine models of collective wage setting (Section 2), capitalist investments (Section 3), and welfare spending (Section 4) to explain why the Scandinavian countries for long periods have had high work effort, small wage differentials, high productivity, and a generous welfare state. The key contribution of this paper is a synthesis of these different elements, emphasizing their institutional complementarity and how the different elements together form a stable whole. To do this we incorporate insights from our earlier work in Moene et al. (1993), Moene and Wallerstein (1997), Barth et al. (2014, forthcoming), and Barth et al. (2013).

2. Collective bargaining

How are wages set in the Scandinavian countries? And, what are the effects of the wage setting system on efficiency and wage differentials?

2.1. Coordination within a two-tier system

Historically, Scandinavian wage setting is considered highly centralized. In most international rankings the Scandinavian countries used to come out on top. Norway, Sweden, and Denmark (in that order) are for example given top scores by Michael Wallerstein (1999) on the average level of centralization of wage setting in OECD countries over the period 1950 to 1992. In Jelle Visser's average coordination index for the period 1993–2010 Norway is outranked only by Ireland, whereas Denmark and Sweden rank more in the middle among the European countries. Sweden experienced a return to coordination after 1997, but with a less formal bargaining structure at the central level (Fredriksson and Topel, 2010).[6]

In economic theory, decentralized price determination is considered to be better than centralized price setting, whether performed by governments or by collective bargainers. It is important to note, however,

[5] Clearly, the features that we emphasize are not exactly equal across the three Scandinavian countries. Several of the features are prominent also in other small open economies in Europe such as Finland, Belgium, and the Netherlands.

[6] According to OECD (2012) both Denmark and Sweden have seen a shift towards local level bargaining during the second half of the 2000s, before the crisis. The Scandinavian countries are characterized by both high union membership (Sweden 75%, Denmark 72%, and Norway 54%) and high collective coverage of the collective agreements (Sweden 93%, Denmark 82%, and Norway 74%).