Erosion of the Ghent System and Union Membership Decline: Lessons from Finland

Petri Böckerman and Roope Uusitalo

Abstract

Union density declined in Finland by more than 10 percentage points in less than 10 years. This paper analyses the reasons behind the decline, using micro data from the 1990s. According to our results, the changes in the composition of the labour force and the changes in the labour market explain only about a quarter of this decline. The main reason for the decline appears to be the erosion of the Ghent system, due to the emergence of an independent unemployment insurance fund that provides unemployment insurance without requiring union membership. We also find that the decline in the union density can be attributed to the declining inclination of the cohorts born after the early 1960s to become union members.

1. Introduction

In 1993, nearly 85 per cent of the Finnish employees were union members. Union density had increased every year since the late 1960s. After the recession in the early 1990s, this 30-year-long trend of increase in union membership was reversed. The union density declined by more than 10 percentage points in less than 10 years. This rate resembles the decrease in the union density during the Thatcher years in the United Kingdom (e.g. Blanchflower and Freeman 1994). The decline in the fraction of unionized workers that started in the early 1980s in a number of industrialized countries had finally reached Finland.

This paper analyses the dynamics of union membership in Finland during the turbulent 1990s. In particular, the paper evaluates to what extent the recent decline in the union membership can be explained by the changes in the composition of the labour force, in the economic environment and in the institutions.

Petri Böckerman is at Labour Institute for Economic Research, Helsinki, Finland. Roope Uusitalo is at the Labour Institute for Economic Research, Helsinki, Finland and Institute for Labour Market Policy Evaluation, Uppsala, Sweden.

The Finnish case has a broader interest for several overlapping reasons. First, the unions have a tremendous effect on the labour market. The unions not only negotiate the wages of their own members, but the union contracts largely determine the wage increases of some 95 per cent of the workforce, because of the extension of the union contracts to the non-members. The unions also run most unemployment insurance funds that pay out earnings-related unemployment benefits. Even the pension system is largely controlled by the unions, which have their representatives on the boards of all pension insurance institutions. No major labour market reform has been implemented without the consent of unions and, in fact, most reforms have been a result of tripartite negotiations between unions, employer organizations and the government. If the decline in union density continues and the union power is significantly reduced, both the labour market and the way in which public policies are designed and implemented may face fundamental changes.

Second, union density has traditionally been very high in all Nordic countries, even from the European perspective (Table 1). One of the main reasons is that eligibility for the earnings-related unemployment benefits has been *de facto* tied to union membership in all the Nordic countries except Norway. This system, where the unions administer government-subsidized unemployment insurance funds, is known as the Ghent system.[1] Several cross-country studies confirm that union density is higher in countries with the Ghent system (e.g. Calmfors *et al.* 2001; Lesch 2004; Neumann *et al.* 1991). Along with the other Ghent countries, Finland has been insulated from the general decline in the union density that has occurred in most industrialized countries. Only recently, an independent unemployment insurance (UI) fund

TABLE 1
Union Density in Selected Countries

	1961/ 1970	1971/ 1980	1981/ 1990	1991/ 2000	Maximum value	Year of maximum value
Ghent countries						
Denmark	0.61	0.69	0.77	0.77	0.80	1994
Finland	0.40	0.65	0.70	0.77	0.80	1995
Sweden	0.66	0.73	0.82	0.86	0.89	1998
Average	0.56	0.69	0.76	0.80	0.83	1996
Non-Ghent countries						
Austria	0.58	0.53	0.50	0.41	0.60	1960
France	0.20	0.21	0.14	0.11	0.22	1969
Germany	0.33	0.34	0.34	0.29	0.36	1991
Italy	0.28	0.47	0.43	0.39	0.51	1976
Japan	0.34	0.33	0.28	0.23	0.35	1964
Netherlands	0.39	0.37	0.28	0.25	0.42	1960
Norway	0.52	0.52	0.56	0.55	0.56	1990
Switzerland	0.34	0.31	0.28	0.23	0.37	1960
United Kingdom	0.41	0.48	0.41	0.33	0.50	1979
United States	0.27	0.23	0.18	0.15	0.29	1960
Average	0.37	0.38	0.34	0.29	0.42	1971

Source: Lesch (2004).
Notes: Employed union members as a fraction of wage and salary earners; 10-year average.

emerged and gained popularity in Finland. The emergence of an independent UI fund has gradually broken the connection between eligibility for the earnings-related unemployment benefits and union membership. In this paper, we argue that the erosion of the Ghent system is the main reason for the rapid decline in union density in Finland during the latter part of the 1990s. This carries some important lessons for the other Ghent countries.

Third, there was rapid structural change in the Finnish labour market during the 1990s. The share of the service sector has increased at the expense of the more traditional manufacturing sector. Within manufacturing, the electronics industry and the Nokia-led telecommunications sector has reported double-digit growth rates, while other sectors have declined in their relative importance. The general education level has rapidly improved so the gap in the education level between the youngest and oldest generations is currently among the highest in the OECD countries (e.g. OECD 2004a). All these changes may have contributed to the decline in union density.

Another important change in the 1990s' labour market is a substantial increase in the unemployment risk. At the beginning of the decade, the national unemployment rate surged from 3 to 17 per cent. Unemployment has declined since 1994 and was around 9 per cent in 2004, but the unemployment risk that workers face has remained higher than before the recession. Increased unemployment risk is also due to an increase in the share of workers on temporary contracts during the latter part of the decade. Such increase in unemployment risk may increase union density when the unions administer the UI funds (e.g. Blaschke 2000; Checchi and Visser 2001; Lesch 2004).

The economics literature on union membership has pursued two main directions (e.g. Riley 1997; Schnaber 2003). First, there is a macroeconomic tradition starting from Ashenfelter and Pencavel (1969) that relates union density to the economic fundamentals, such as inflation and unemployment, and to the institutions, such as the differences in the unemployment insurance scheme. The only previous economics study that looks at the evolution of union density in Finland (Pehkonen and Tanninen 1997) follows this tradition and investigates the effects of macroeconomic variables and institutional changes on the changes in union density during the past decades. Second, there is a microeconomic tradition that aims to understand the individual-level reasons for joining a union. This approach has gained ground in more recent literature (e.g. Beck and Fitzenberg 2004; Charlwood 2003; Schnaber and Wagner 2005). Our paper is related to both strands of the literature and investigates the determinants of the union status at the individual level, but focuses on the effects of institutions, particularly on the role of unemployment insurance schemes.

This paper is organized as follows. Section 2 provides a description of the relevant institutions. Section 3 introduces the data set that is used to address the issues at hand. Section 4 contains our analyses of contributing factors to the decline in union density. Section 5 concludes with some general remarks

and lessons from the Finnish experience for other countries with similar institutions.

2. Finnish labour relations

The Finnish union movement has a long history. The first national trade union, the printers' union, was established in 1896. The employers formally recognized the unions for the first time in January 1940. Since 1968, the labour market organizations and the government have negotiated centralized income policy agreements in an effort to stabilize the macroeconomic environment. These tripartite income policy agreements have also often included changes in the social security system and taxes.

There has been a substantial increase in union density since 1960. The main catalyst for the increase in union density in the 1970s was the end of the political division of the Finnish trade union movement in the late 1960s (e.g. Ebbinghaus and Visser 2000). Other important changes that have contributed to the increase in union density include the introduction of tax deduction for union fees and a change to a system where employers collect union fees directly from the pay (Pehkonen and Tanninen 1997). Also, the increase in unemployment at the end of the 1970s increased union density, as it tends to do in the Ghent system.

Most blue-collar unions are organized according to their industries. Employees with academic qualifications are mostly organized according to their professions. Altogether, there are 81 trade unions that belong to three central organizations. The largest central organization is SAK (Confederation of Finnish Trade Unions) that has 1,060,000 mainly blue-collar members. STTK (Finnish Confederation of Salaried Employees) has 643,000 white-collar members and AKAVA (Confederation of Academic Professional Associations) has 424,000 members. Reflecting the rapid changes in the education structure of the labour force, AKAVA membership steadily increased during the 1990s (Figure 1). STTK membership has remained more or less constant since 1993, while the SAK membership has declined.

The unions negotiate collective wage agreements with the employer organizations. Collective labour contracts are also binding for the non-union members in industries where the union contract is considered as representative, which usually implies that about half of the employees are union members. Hence, the coverage of collective bargains in Finland is around 95 per cent of all employees, one of the highest rates in the OECD (e.g. Checchi and Lucifora 2002; Layard and Nickell 1999).

Along with wage bargaining, the unions administer unemployment insurance funds that provide their members with earnings-related unemployment benefits. These funds collect membership fees, but the fees cover only 5.5 per cent of the unemployment expenses. The rest is covered by direct subsidies from the government (~40 per cent) and by mandatory UI contributions collected from both the employers and the employees. In terms of funding,

FIGURE 1

The Evolution of Membership in Central Organizations and in the Independent UI Fund.
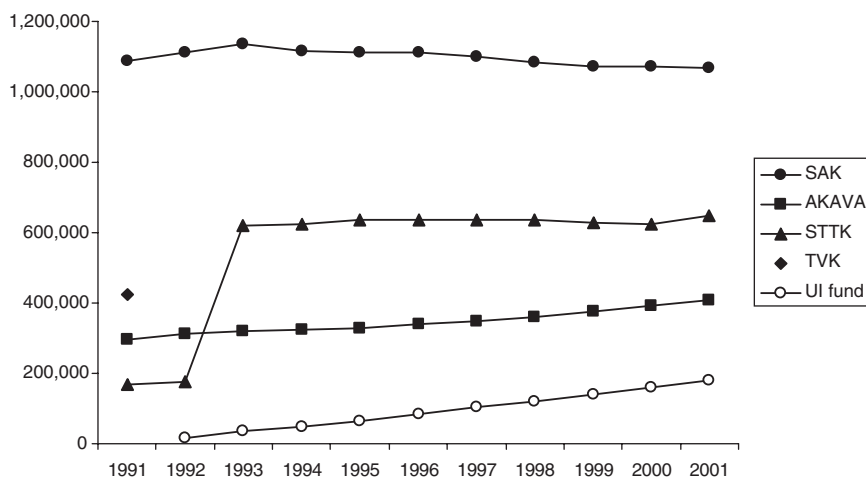
Source: Union membership from the Statistical Yearbook of Finland, various volumes; independent UI fund membership from their own records.

Note: TVK was merged into STTK in 1992 because of TVK's financial difficulties.

SAK, Confederation of Finnish Trade Unions; AKAVA, Confederation of Academic Professional Associations; STTK, Finnish Confederation of Salaried Employees.

the Finnish UI system resembles systems in Belgium, Iceland, Sweden and Denmark, which are the other Ghent countries.[2]

The employees that are not members of a UI fund are entitled to basic unemployment allowance paid by the Social Insurance Institution (KELA). KELA also pays labour market support for the unemployed who have exhausted their 500 days' benefit entitlement or those who do not meet the employment conditions required for the earnings-related UI benefits. Both the basic allowance and the labour market support are, in most cases, substantially lower than earnings-related UI benefits. Entitlement to higher unemployment benefits is one of the most important reasons to join a union. In a recent survey by Taloustutkimus (2003), 58 per cent of the union members stated that earnings-related benefits were a 'very important' reason for their membership. Pehkonen and Tanninen (1997) report similar findings from earlier surveys.

It has always been possible to join a UI fund without becoming a union member. The Act on Unemployment Funds 1984 that regulates unemployment funds does not contain any reference to the trade unions. Up to the mid-1990s, very few non-union workers were members of a UI fund, mainly because the unions have made it rather difficult to join one without joining a union. The first independent UI fund emerged in 1992.[3] Its emergence was stimulated by the increase in demand for unemployment insurance among non-union members that occurred with the large increase in unemployment at the beginning of the 1990s. The independent UI fund grew rapidly in the

latter part of the 1990s. As a result, it was the largest single unemployment fund with around 200,000 members in 2002.

The government was not actively involved in the creation of the independent UI fund. Still, the fact that the right-wing parties were in power in 1992 may have made it easier for the independent UI fund to gain approval from the Ministry of Social Affairs. Also, the unions did not consider the independent UI fund as a serious threat to their membership when it was created, but reversed their position later.

The union fees are around 1–2 per cent of wages and salaries (Table 2). In many professional unions (AKAVA members), the union fee is fixed usually much lower than 1 per cent of the wages. Membership fees of union-run unemployment insurance funds are much lower than the total union fee (between 0.1 and 0.6 per cent of the wages and salaries). The membership fee of the independent UI fund was €65 per year (about 0.2 per cent of the average salary) in 2005. Hence, there are substantial financial incentives to switch from trade union membership to the independent UI fund. However, the unemployment insurance fees of union-run funds are usually lower than the fees of the independent fund, particularly for the AKAVA and STTK members. This is quite natural, because access to these unemployment insurance funds is restricted to particular professional occupations that have lower than average unemployment risk.

3. Data

To analyse the factors associated with the decline in the union density, we need data that gather information on union membership and their potential determinants from a representative sample over a long period. The best available source of data is the Income Distribution Survey (IDS) conducted by Statistics Finland.

IDS is an annual household survey. Its main purpose is to monitor disposable income growth in various population groups and observe the changes in the income and wage dispersion. Each year, the survey collects information from 10,000 households with approximately 25,000 individuals. The survey uses a rotating-panel design where each household remains in the data for two consecutive years, and new households replace half of the respondents each year. For our purposes, this is an important advantage because we can also observe transitions in and out of the unions at the individual level. The survey data include weights that account for the sampling probability and the attrition rate. These weights are calibrated to yield marginal distributions that match known population totals. We use these weights in all calculations. The data also include relevant background information on the individuals such as age, education and the labour market status that is helpful in an effort to decompose the decline in the union density during the 1990s. These variables are mainly based on various administrative registers.

TABLE 2
Union and UI Fund Fees as a Share of Gross Wages in 2005

Official name of union	English translation	2005 Union fee (%)	2005 UI fund fee (%)
SAK			
KTV	The Trade Union for the Municipal Sector	1.4	0.35
Metallityöväen liitto	The Finnish Metalworkers' Union	1.7	0.60
Palvelualojen ammattiliitto	Service Union United	1.5	0.35
Rakennusliitto	The Finnish Construction Trade Union	1.9	0.50
AKAVA			
Opetusalan Ammattijärjestö	Trade Union of Education in Finland	1.2–1.3	€34.80 (~0.12)
Insinööriliitto	The Union of Professional Engineers in Finland	€321–€357 (~0.8)	€40 (~0.1)
Tekniikan Akateemisten Liitto	The Finnish Association of Graduate Engineers	€264 (~0.6)	€40 (~0.09)
STTK			
Julkis- ja yksityisalojen toimihenkilöliitto	The Federation of Public and Private Sector Employees	1.28	€49.20 (~0.2)
Palkansaajajärjestö Pardia	Pardia	1.05–1.3	€30 (~0.12)
Tehy	The Union of Health and Social Care Professionals	1.2	€40 (~0.17)
Independent			
Yleinen työttömyyskassa (YTK)	YTK Unemployment Fund		€65 (~0.2)

Source: Membership fees in 2005 according to the web pages of each union.
Notes: Membership fee includes UI fund fee. In the cases when the union or unemployment fund fee is fixed, we have calculated the fraction of salaries using the average wages of the representative occupation. In some AKAVA and STTK unions, the members belong to several different UI funds. The UI fund fee displayed in the table is the mode.
SAK, Confederation of Finnish Trade Unions; AKAVA, Confederation of Academic Professional Associations; STTK, Finnish Confederation of Salaried Employees.

Information on union membership is based on the interview responses, and is available from 1991 onwards.[4] Individuals are asked to identify the central organization to which they belong. If respondents do not know their central organization, they are asked about their trade union, and these responses are coded to the central organization level by Statistics Finland. A separate question on UI fund membership was included in the survey for the first time in 1992. The union members usually belong to the unemployment fund run by the same trade union, never to the independent UI fund.

We concentrated on the wage and salary earners defined according to the interview questions on main activity. Self-employed persons, pensioners, students and other groups outside the labour force are therefore excluded from the analysis. Those who are unemployed at the interview date were included in our sample, unless they have been out of work for more than six months and are no longer classified as wage and salary earners. After these restrictions, the annual sample size is, on average, 10,000 individuals.

In addition to collecting information on union membership and the relevant background variables, we used the IDS data to calculate the unemployment risk that the individual faces. We used the panel feature of the data and estimated separate probit models for each year from 1991 to 2000, explaining the likelihood of becoming unemployed in year $t + 1$ with gender, age (five groups), education (five groups), 14 industry and 11 regional dummies (all measured in year t). On the basis of the estimated coefficients, we then calculated the expected unemployment risk for the whole sample (also those not observed in $t + 1$). Our measure of unemployment risk varies both in cross section and over time. Including this measure as an explanatory variable in an equation explaining union membership together with all the control variables and time dummies identifies the effect of unemployment risk from the different changes in unemployment in the different population groups.

4. Analysis of contributing factors

Basic Facts of the Decline

Aggregate numbers on union membership reported in Figure 1 are affected by both the structure and the size of the labour force, and by the fraction of the potential members that belong to the unions. The effect of employment growth is eliminated in Figure 2, which displays the changes in union density during the 1990s. The figure also shows the fraction of workers that belong to the unemployment insurance funds, which in most cases imply belonging to a union.

The striking observation from the figure is the rapid increase in union density during the first years of the 1990s and the large decline after 1993. However, the share of UI fund members has declined by only three percentage points during the late 1990s. The growing divergence between the union density and UI fund membership reflects the increasing importance of the independent UI fund. At the beginning of the decade, only a few non-union

FIGURE 2
The Share of Wage and Salary Earners that Belong to Unions and to UI Funds.
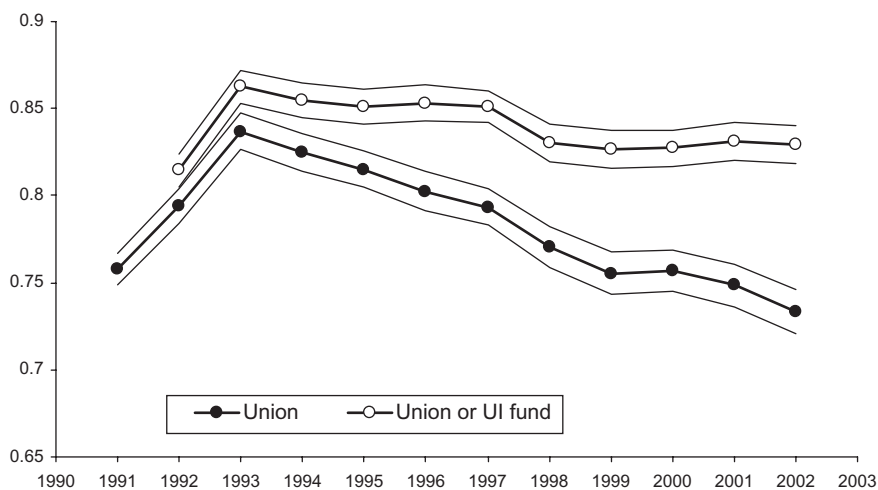
Note: Thin lines indicate 95 per cent confidence intervals.

members were members of a UI fund. At the end of the decade, their share increased to approximately 10 per cent.

Other data sources confirm the patterns observed from the IDS data. For example, according to the Working Life Barometer by the Ministry of Labour, union density declined from 0.85 in 1993 to 0.79 in 2000. In 2003, the trade union density was 0.72, representing a 13 percentage point decline from its peak in 1995. The share of wage and salary earners that are members of the independent UI fund was 0.10 in 2003, according to the same data source. A question about union membership is also occasionally included in the Labour Force Survey (LFS). For the years when both LFS and IDS data are available, the difference in union density is generally below one percentage point. In contrast, OECD (2004b) misses the swings in the union density entirely and reports that the union density has remained roughly constant in Finland between 1990 and 2000.

Union membership has some interesting features in Finland (Table 3).[5] In contrast to most other countries, women are more likely to belong to unions. Union density is also higher for those with more education. Otherwise, density patterns are more similar to other countries (e.g. Schnaber 2003). Young workers are less unionized. In addition, temporary workers and those with the lowest wages are less likely to be union members. Union density is higher in the public sector and in the third sector compared with the private sector. (Comparable data from other countries are reported by, e.g. Visser (2003).)

A potential reason for the large changes in union density in the 1990s is that the job cuts during the recession hit the marginal workforce ('outsiders') hardest, so that the core members of the unions ('insiders') remained in the workforce. However, this explanation does not gain much support from the

TABLE 3
The Trade Union Density According to Various Characteristics

	1991	*1995*	*2000*
Gender			
Female	0.79	0.83	0.80
Male	0.72	0.80	0.72
Age			
15–24	0.53	0.62	0.46
25–34	0.74	0.78	0.70
35–44	0.81	0.84	0.79
45–54	0.82	0.86	0.83
55–64	0.77	0.82	0.85
Education			
Primary	0.73	0.81	0.74
Secondary	0.77	0.81	0.75
Tertiary	0.82	0.84	0.82
Wage			
1st (lowest)	0.66	0.70	0.62
2nd	0.81	0.87	0.81
3rd	0.81	0.87	0.81
4th (highest)	0.77	0.82	0.78
Type of contract			
Permanent	—	—	0.77
Temporary	—	—	0.70
Sector			
Private	0.72	0.77	0.70
Public	0.85	0.90	0.89
Third sector	0.65	0.76	0.81
Industry			
Agriculture and forestry	0.64	0.74	0.69
Manufacturing	0.80	0.85	0.82
Energy and water supply	0.88	0.87	0.89
Construction	0.75	0.81	0.72
Trade	0.62	0.67	0.56
Hotels and restaurants	0.63	0.68	0.60
Transportation	0.74	0.74	0.69
Communications	0.87	0.90	0.82
Finance and insurance	0.76	0.85	0.71
Other private services	0.56	0.69	0.60
Public administration	0.86	0.91	0.87
Education and R&D	0.84	0.85	0.86
Health care and social services	0.86	0.90	0.89
Other public and personal services	0.63	0.76	0.71
Regions			
South	0.70	0.77	0.69
West	0.81	0.87	0.82
East	0.82	0.89	0.85
North	0.85	0.87	0.85

Source: Authors' calculations from the Income Distribution Survey data.
Note: Information about the type of contract is only available from 1999.

IDS data. The changes in union density were roughly similar even when the density was calculated by dividing the number of union members by the number of people of working age.

As reported in Table 3, the decline in union density has taken place more or less across the board. Some exceptions include the oldest workers, the

workers with highest education and those working in the public sector. These are also groups where the union density has been the highest in the past. The proportion of wage and salary earners that belong to the independent UI fund is highest in the private sector and among workers with primary or secondary education.

Changes in Labour Force Composition and Unemployment Risk

Union density varies substantially across the labour market segments. Thus, it is interesting to analyse the contribution of the changes in the labour force composition to the union density during the 1990s. In this paper, we estimated simple discrete choice models explaining union membership with factors such as gender, age, education, unemployment risk, industry, region and year. We used data from 1992 to 2000 because the membership in the independent UI fund was first reported in 1992, and because consistent industry classification could be created only up to 2000.

We classified the outcome variable into three categories: (a) trade union members, (b) members of the independent UI fund, and (c) non-members. We use the simplest possible discrete choice model that incorporates three alternatives, the multinomial logit model. The multinomial logit model is based on the 'independence of irrelevant alternatives' assumption (IIA), implying that the odds ratio between two alternatives is independent of the availablility of a third alternative.[6]

We report the results from a multinomial logit model in Table 4. To make the table easier to read, we report marginal effects instead of parameter estimates. Each entry in the table can be interpreted as the change in probability of choosing a particular category owing to a unit change in the independent variable. When all independent variables are categorial variables, this simply provides the adjusted difference, compared with the omitted base category. Because the choice probabilities add up to one, a relevant significance test is a joint test where the variable has no effect on the choice between the three options. This is reported in the far right column.

As we are trying to explain the changes in union density, we are primally interested in the year effects. The first model reports the year effect without controlling for any other variables. The results are similar to the aggregate figures reported earlier. The year dummies for 1993 and 1994 have large positive effects on union membership. The year effects turn negative in 1996 (compared with 1992) and grow in absolute value after that. The year effects on the independent fund membership grow over time, reaching 8.7 per cent in 2000.

The second set of estimates includes a large number of control variables in addition to the year dummies. The effect of changes in the composition of the labour force can now be evaluated by comparing the year effects in the two models. This comparison reveals that the changes in the composition of the labour force explain only a rather small share of the decline in the union density. The difference between the largest positive effect (1993) and the

TABLE 4
Results from Multinomial Logit Models

	The year effects only					The year effects and the control variables			
	Non-member	Union	UI fund	χ^2 from Wald test		Non-member	Union	UI fund	χ^2 from Wald test
1993	−4.5	3.5	1.1	28.6	1993	−4.6	4.0	0.5	35.9
1994	−3.7	1.9	1.8	20.2	1994	−4.0	2.8	1.1	25.6
1995	−3.5	0.5	3.0	25.8	1995	−3.6	1.6	2.1	29.6
1996	−3.7	−1.9	5.6	49.5	1996	−3.7	−0.2	3.9	48.8
1997	−3.6	−3.1	6.6	64.3	1997	−3.9	−0.8	4.7	59.7
1998	−1.8	−5.3	7.0	58.6	1998	−2.3	−2.8	5.1	50.1
1999	−1.6	−7.3	8.9	81.2	1999	−2.3	−4.4	6.6	63.0
2000	−1.7	−7.0	8.7	80.8	2000	−2.3	−4.1	6.4	60.8
				Control variables					
Female						−5.5	5.6	−0.1	114.5
Married						−3.4	3.5	−0.1	44.7
Children						−0.4	0.3	0.1	0.6 (n.s.)
Age less than 24 years						22.2	−21.2	−1.0	288.1
Age 25–34						4.6	−4.9	0.3	49.5
Age 45–54						−0.2	0.2	0.0	0.1 (n.s.)
Age 55–64						0.2	0.3	−0.5	2.0 (n.s.)
Full-time worker						−14.8	13.5	1.3	244.7
Upper secondary or vocational education						−1.4	1.3	0.1	5.6
Polytechnic or lower university degree						−2.0	−0.9	2.8	60.0
Higher university degree						−3.7	2.0	1.7	28.0
PhD degree						−4.4	4.3	0.1	24.3
Manufacturing						−10.8	10.8	0.0	106.9
Energy and water supply						−10.5	12.6	−2.0	53.0
Construction						−6.4	5.3	1.1	30.8
Trade						−3.0	−0.5	3.4	15.2
Hotels and restaurants						−4.3	−0.6	4.9	20.1
Transportation						−5.8	5.2	0.7	24.0
Communications						−9.8	11.3	−1.5	63.4
Finance and insurance						−7.9	7.7	0.2	42.6
Other private services						−3.0	1.1	1.9	9.9
Public administration						−10.0	12.0	−2.0	100.3
Education and R&D						−8.1	10.2	−2.2	65.5
Health care and social services						−10.6	13.6	−3.0	128.8
Other public and personal services						−4.1	4.4	−0.3	10.2
Urban						−1.9	2.0	−0.1	15.0
Unemployment risk						−6.2	4.7	1.5	2.1 (n.s.)

Source: Authors' calculations from the Income Distribution Survey data.
Notes: Marginal effects are reported. The reference group for the year 1992 consists of males who are not married, have no children, are 35–44 years old, are in part-time work, have comprehensive education only, work in agriculture and forestry, and live in rural areas. The measure for unemployment risk is estimated from yearly probit models as explained in the text. Control variables include 11 regional dummies that are not reported in the table. Adjusted Wald test statistics are reported. n.s. means that the variable is not statistically significant at the standard 5% level.

largest negative effect (2000) is 10.5 percentage points when only year dummies are included and 8.1 percentage points after adjusting for the changes in other covariates. Therefore, changes in the other covariates explain around 25 per cent of the decline in the union density. Calculated in the same way,

the changes in the composition of the labour force explain about 20 per cent of the growth in the independent UI fund.

Disentangling the effects of major changes in the explanatory variables over the decade is helpful in understanding the limited role of structural change. For instance, the education level has increased rapidly over the 1990s, but the increase in the education level does not contribute to the decline in union density, because the more educated are more likely to be union members. The two most important factors that have contributed to the decline in union density are the decrease in the relative size of the public sector (where union density is high) and the growth in business services (where union density is low). However, even these factors account for only a rather small fraction of the observed decline in union density.

Perhaps the most interesting explanatory variable is the unemployment risk that employees face. According to the point estimates, the increase in unemployment risk decreases the probability of remaining outside the UI funds and increases the probability of joining unions and an independent UI fund. However, these effects are not statistically significant. Also, although the changes in unemployment could explain the cyclical fluctuation in union density, they cannot explain the trend decrease in union density. The unemployment rate in 2000 was 9.8 per cent, substantially higher than before the recession.

Some interesting variables that could be used to explain the changes in union density are not available in the IDS data. We therefore supplemented the analysis, using data from the Quality of Work Life Survey (QWLS), a cross-section survey conducted jointly with the LFS. We used data from 1997 and 2003. The results regarding the effects of the variables that are also available in the IDS data were very similar.[7] In addition, the results based on the QWLS data reveal that union density is higher in the large firms and that union membership increases with tenure. More interestingly, calculations from the QWLS data show that perception of job insecurity is positively correlated with union membership. The QWLS data also show that the lower union density of temporary workers is fully explained by other covariates. Because the QWLS data contain only two cross sections with a smaller sample size and contain no information on the membership in the independent UI fund, it is not well suited for analysing the reasons behind the changes in union density. However, the results give no indication that variables missing from the IDS data could explain the observed decline in union density.

Cohort Effects

It would be interesting to know whether the decline in union density can be attributed to the cohort or to the time effects. Perhaps younger generations are less likely ever to join unions, and the union decline will continue as the less unionized younger cohorts gradually replace the older cohorts. Unfortunately, a full decomposition into age, time and cohort effects is impossible without strong structural assumptions. Age, time and cohort are linearly

dependent and therefore any time effect can always be interpreted as simultaneous cohort and age effects.

Even though the age, time and cohort effects cannot be unambiguously identified, some meaningful linear combinations of these effects can be. In particular, the second differences, that is, the changes in slopes of the effects, can be identified only if age, time and cohort effects are additively separable. In addition, by normalizing the slope of one of these effects to some constant, the slopes of the two other effects can also be identified. Deaton (1997) proposes normalizing the year effects so that they add up to zero. This implies that any time trend will be attributed to cohort and age effects. Given that union density has declined substantially during the period that we observed, this normalization is not particularly appealing in our context. A more plausible assumption is to restrict the cohort or age effects to zero over some range where no major changes should occur.

Subsequently, we decompose age, time and year effects by restricting the age effects to mean zero in the range between 35 and 45 years. Otherwise, we allow fully flexible age, time and cohort profiles by estimating the effects with a full set of dummy variables. As usual, we create the base category by dropping one of the dummy variables in each set: the first year, the oldest cohort and the indicator for age 35, so that the effects measure relative differences to the base category. We also restrict the age, time and cohort effects to be additively separable, implying no interactions between these effects. This is a necessary but not an innocent assumption requiring, for example, that all cohorts react to changes in the environment in the same way.

The results from the decomposition are presented in Figure 3. We restrict the sample to wage and salary earners between the ages of 18 and 64, and use data for the years 1991–2002. Thus, the youngest cohort is born in 1984, and the oldest in 1927. First, in the top left-hand panel, we plot the age profiles of every fifth cohort over the range of years when these cohorts appear in the data. This plot reveals that the age profiles of union membership are reasonably similar for different cohorts. Union density quickly increases up to age 30 and then stays roughly constant until close to retirement age. Thus, our normalization that implies no trend between ages 35 and 45 appears to be consistent with the data.

Our decomposition results are plotted in the other three panels of Figure 3. The top right-hand panel shows the time effect. The strong upswing in union density at the beginning of the 1990s and the consequent decline that was reported earlier in Figure 2 produce large time effects. In addition, the more recent upswing in union density around the year 2000 can also be seen clearly. This temporary increase in union density was associated with the burst of the high-tech bubble that increased demand for union services among affected workers. The bottom left-hand panel shows the age effects. The flat segment between ages 35 and 45 is a product of our normalization, but other features of the age profile are genuine differences across age groups. Union density among the youngest age groups is substantially lower than among those in

FIGURE 3
The Decomposition of the Union Density into Year, Age and Cohort Effects.
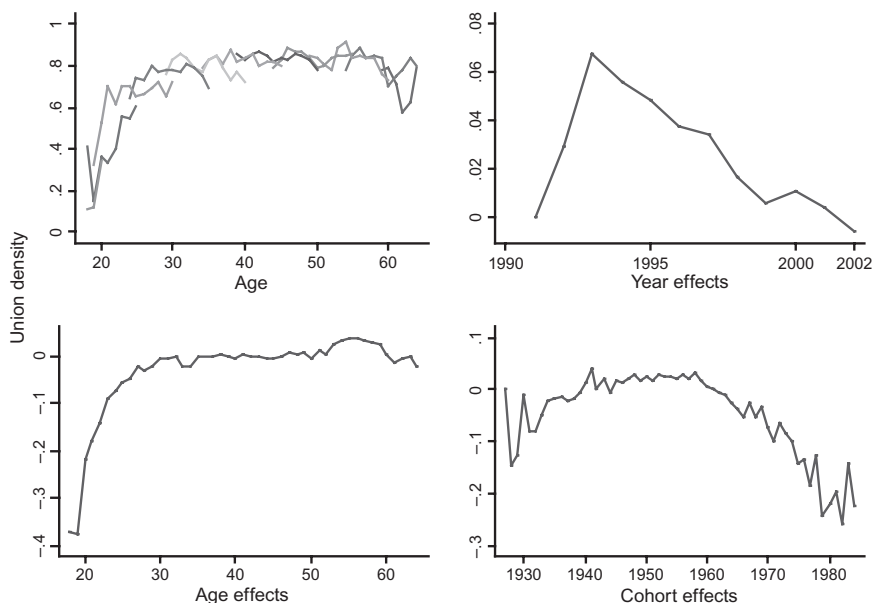
middle age. Union density peaks at around age 55. The most plausible explanation for this is that employees have better incentives to join unions close to the early retirement age, because early retirement schemes provide extended unemployment benefits for employees who are covered by the unemployment insurance (Hakola and Uusitalo 2005).

Perhaps the most interesting result of this decomposition is the cohort pattern reported in the bottom right-hand panel. The cohort profiles indicate that a large fraction of the decline in union density during the 1990s can be attributed to the decrease in union density among the cohorts born after the early 1960s. The youngest cohorts are almost 20 per cent less likely to be union members than the cohorts born immediately after the Second World War. The large cohort effect conveys a bleak future for unions in Finland, because the younger cohorts gradually replace the older, more unionized cohorts, leading to a continuing decline in union membership. Finding that younger cohorts are less likely to become union members is a feature not only of Finnish labour markets. Bryson and Gomez (2005) argue that the fraction of cohorts born after the mid-1960s who have never been union members has also increased in the United Kingdom.

Changes in Union Status

As each individual is observed in the two consecutive years in the IDS data, we can also examine transitions between union membership, UI fund

membership and non-membership. Subsequently, we will use this feature for two purposes. First, we will demonstrate that gross flows in and out of unions are large, compared with the net change in union density. Second, we will examine the sources of growth in the independent UI fund by calculating the fraction of new members that were previously union members.

Gross flows in and out of unions are reported in Figure 4. The inflow rate is defined as the number of individuals entering unions between the years $t-1$ and t, divided by the average number of union members in the years $t-1$ and t. The outflow rate is calculated in the same way, based on the number of individuals exiting unions between $t-1$ and t. As some new members come from outside the labour force, the data are no longer restricted to wage and salary earners but include all individuals in the IDS sample.

Gross membership flows are large, compared with the net change in the union membership. The turnover has also increased during the decade. This change is masked in the aggregate analysis of trade union density. Gross flows are also substantially larger than what would be produced by simple population dynamics. The size of the average age cohort is around 66,000. If the oldest cohort left the unions when retiring and the youngest joined when entering the labour force, and nothing else happened, the resulting gross flows would be about a third of the size that we observed in the data.

Gross flows also reveal that the net increase in union membership in the early 1990s was caused by both the increase in the inflow of new members to unions and the decrease in the outflow from unions. After 1995, the inflow and the outflow have been almost equally large. This is consistent with Figure 1, which showed that the net change in union membership has been close to zero. Union density still declined. There are two explanations. First,

FIGURE 4
The Gross Flow into Unions (Inflow Rate) and Out of Unions (Outflow Rate) and Net Change (Net).
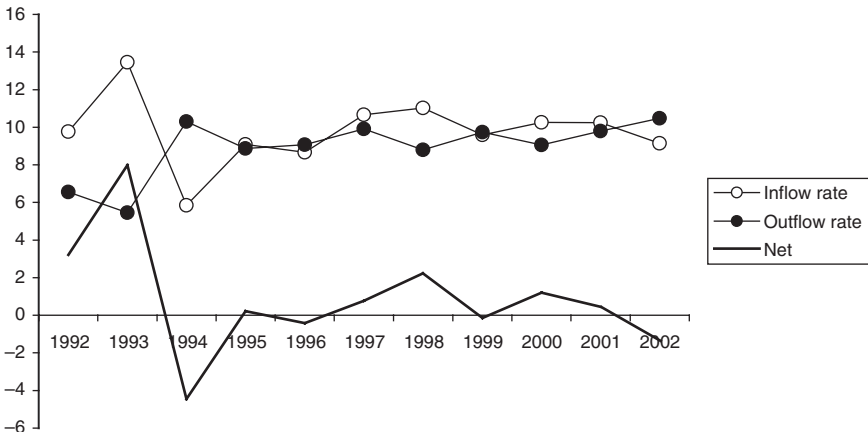
employment increased by 300,000 (15 per cent) between 1993 and 2002 because of both the growth of the working age population and the increase in employment rates. With unchanged membership and growing employment, union density declined. Second, many union members had retired and remained as union members.

The flow between the unions and the independent UI fund represents only a rather small fraction of the total changes in union status. Despite this, there has been a constant outflow of workers from trade unions to the independent UI fund during the 1990s. On average, 47 per cent of the annual gross inflow to the independent UI fund is due to former union members switching to the independent UI fund (Figure 5). However, around half of the new members of the independent UI fund were not union members before joining the independent UI fund.

An analysis of switches from unions to the independent UI fund reveals that young, high-wage workers who live in the southern part of the country have been most likely to switch from trade union to the independent UI fund.[8] This suggests that these switches are more driven by employees' preferences that are captured by the cohort effects than direct monetary incentives induced by the lower fees of the independent UI fund.

The switches have been substantially less likely for those employees who are employed in the public sector. AKAVA and STTK members have switched to the independent UI fund more often than SAK members, although this pattern has changed in more recent years. The transitions between the unions and the independent UI fund occur in both directions; about 16 per cent of the UI fund members join unions every year. These transitions are most common for the young and highly educated workers who are employed in the public sector.

FIGURE 5

Gross Inflow into the Independent UI Fund (Total Inflow) and the Inflow from the Unions.
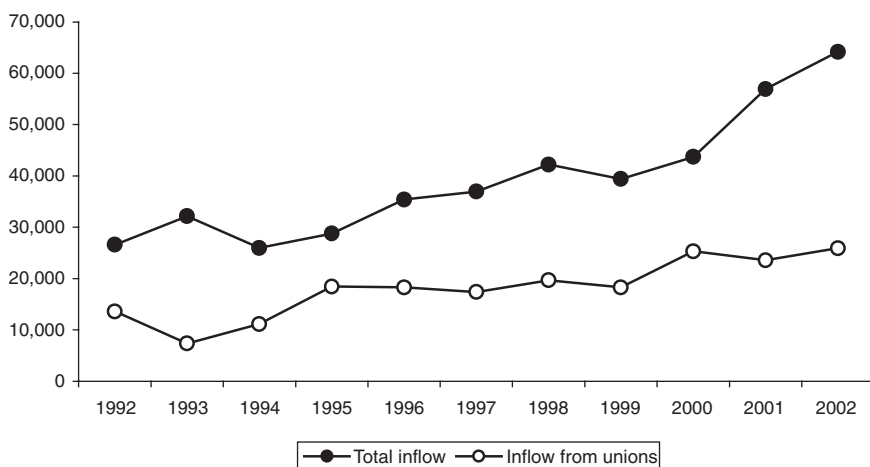
5. Conclusions

Union density in Finland declined from 84 per cent in 1993 to 73 per cent in 2002. According to our results, only about a quarter of this decline can be explained by the changes in the composition of the labour force or by other changes in the labour market. The main reason for the decline appears to be the emergence of an independent UI fund that provides unemployment insurance without requiring union membership.

The independent UI fund erodes the link between the earnings-related unemployment insurance and union membership that has supported union density in the Ghent countries. A similar development may well take place in other countries where unions are involved in the administration of UI funds. The Finnish case demonstrates that a seemingly small change in the earnings-related unemployment insurance scheme can produce a large change in the union density.

Interestingly, a large part of the decline can be attributed to a decrease in union membership in the cohorts born after the early 1960s. This suggests that union density will continue to decrease as the younger, less unionized cohorts gradually replace the older cohorts in the labour market. Some signs of similar development can also be seen in other Ghent countries where union density has been very high. Even in Sweden, the share of union members in the youngest cohorts has substantially decreased recently (Björklund *et al*. 2005).

If the union density declines further, the collective income agreements may face serious challenges. In some sectors, the union density may decrease to a level where union contracts are no longer considered representative and therefore are no longer extended to non-members. Such development could reduce the government interest to support collective income agreements. Accordingly, a decline in union density may eventually cause fundamental changes in wage formation and undermine the Nordic model of industrial relations.

Final version accepted on 17 January 2006.

Notes

1. The name of the system derives from the Belgian town Ghent (Gent in Flemish), where it was first introduced. Unemployment insurance funds emerged as an

inititative of trade unions in many countries, because there was no compulsory unemployment insurance available. The government has subsidized these funds in Finland on the condition that their resources are not used to fund strikes (Kuusi 1931: 791–809). Since the introduction of compulsory unemployment insurance, unemployment insurance funds that are run by trade unions have ceased to exist in most countries. Holmlund and Lundborg (1999) provide a theoretical elaboration of incentives to join unions in a system where the unions administer unemployment insurance benefits through government-subsidized UI funds.

2. The UI system in Belgium is not always classified as a Ghent system. In Belgium, the private sector unemployment insurance funds are administrated by trade unions, but coverage of unemployment insurance is not conditional on union membership.

3. This independent UI fund is officially called 'Yleinen työttömyyskassa' in Finnish but is better known by its popular name 'Loimaan kassa'. It originally gathered members only from the private sector but now also covers public sector workers. A similar independent UI fund, called 'Alfa-kassan', also emerged in Sweden in 1998. However, its membership is still much lower than that of the independent UI fund in Finland. In 2004, 'Alfa-kassan' had 69,000 members or 1.6 per cent of all Swedish employees.

4. The IDS data also contain information on tax deductions due to union and UI fund fees. However, the tax deductions do not distinguish the union fees from UI fund fees. In addition, the tax deductions refer to the payments during the whole year, while the interview responses refer to union membership at the time of the interview. In 2003, the IDS data also contained register-based information on union membership. Union density among the wage and salary earners is exactly the same (72 per cent) based on the register data and the interview responses.

5. Schnaber and Wagner (2005) document factors that account for union membership for a number of European countries (including Finland), using data from the European Social Survey. Their results are in line with ours.

6. The IIA assumption is not valid if some alternatives are close substitutes. However, it is far from clear which two alternatives in our case would be closest substitutes. An appealing option would be to estimate correlation structure between the three alternatives, for example, using the multinomial probit model, but that is computationally difficult when the attributes are individual and not choice specific. We tested the IIA assumption using the Hausman test and the Small-Hsiao test. Neither of these tests indicates that the IIA assumption would be violated.

7. These results are reported in a working paper version.

8. The results on switches of workers are reported in a working paper version.

References

Ashenfelter, O. and Pencavel, J. H. (1969). 'American trade union growth: 1900–1960'. *The Quarterly Journal of Economics*, 83: 434–48.

Beck, M. and Fitzenberg, B. (2004). 'Changes in union membership over time: a panel analysis for West Germany'. *Labour: Review of Labour Economics and Industrial Relations*, 18: 329–62.

Björklund, A., Edin, P.-A., Holmlund, B. and Wadensjö, E. (2005). *Arbetsmarknaden*. Stockholm: SNS Förlag.

Blanchflower, D. G. and Freeman, R. B. (1994). 'Did the Thatcher reforms change British labour performance?' In R. Barrell (ed.), *Is the British Labour Market Different?* Cambridge: Cambridge University Press, pp. 51–92.

Blaschke, S. (2000). 'Union density and European integration: diverging convergence'. *European Journal of Industrial Relations*, 6: 217–36.

Bryson, A. and Gomez, R. (2005). 'Why have workers stopped joining unions? The rise in never-membership in Britain'. *British Journal of Industrial Relations*, 43: 67–92.

Calmfors, L., Booth, A., Burda, M., Checchi, D., Naylor, R. and Visser, J. (2001). 'The future of collective bargaining in Europe'. In T. Bori, A. Brugiavini and L. Calmfors (eds.), *The Role of Unions In the Twenty-First Century*. Oxford: Oxford University Press, pp. 1–155.

Charlwood, A. (2003). *The Anatomy of Union Decline in Britain, 1990–1998*. Discussion Paper No. 601. Centre for Economic Performance, London School of Economics.

Checchi, D. and Lucifora, C. (2002). 'Unions and labour market institutions in Europe'. *Economic Policy*, 35: 362–408.

—— and Visser, J. (2001). *Pattern of Persistence in European Trade Union Density. A Longitudinal Analysis 1950–1997*. Working Paper No. 01–04. Amsterdam Institute for Advanced Labour Studies, University of Amsterdam.

Deaton, A. (1997). *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy*. Baltimore: Johns Hopkins University for the World Bank.

Ebbinghaus, B. and Visser, J. (2000). *The Societies of Europe. Trade Unions in Western Europe since 1945*. London: Macmillan.

Hakola, T. and Uusitalo, R. (2005). 'Not so voluntary retirement decisions? Evidence from a pension reform'. *Journal of Public Economics*, 89: 2121–36.

Holmlund, B. and Lundborg, P. (1999). 'Wage bargaining, union membership, and the organization of unemployment insurance'. *Labour Economics*, 6: 397–415.

Kuusi, E. (1931). *Sosiaalipolitiikka II*. Helsinki: WSOY.

Layard, R. and Nickell, S. (1999). 'Labor market institutions and economic performance'. In O. Ashenfeler and D. Card (eds.), *Handbook of Labor Economics*, vol. 3C. Amsterdam: North-Holland, pp. 3029–84.

Lesch, H. (2004). 'Trade union density in international comparison'. *Cesifo Forum*, 4: 12–18.

Neumann, G., Pedersen, P. J. and Westergård-Nielsen, N. (1991). 'Long-run international trends in aggregate unionization'. *European Journal of Political Economy*, 7: 249–74.

OECD (2004a). *Education at a Glance*. Paris: OECD.

—— (2004b). *Employment Outlook*. Paris: OECD.

Pehkonen, J. and Tanninen, H. (1997). 'Institutions, incentives and trade union membership'. *Labour: Review of Labour Economics and Industrial Relations*, 11: 579–97.

Riley, N.-M. (1997). 'Determinants of union membership: a review'. *Labour: Review of Labour Economics and Industrial Relations*, 11: 265–301.

Schnaber, C. (2003). 'Determinants of trade union membership'. In J. T. Addison and C. Schnaber (eds.), *International Handbook of Trade Unions*. Cheltenham: Edward Elgar, pp. 13–43.

—— and Wagner, J. (2005). *Determinants of Union Membership in 18 EU Countries: Evidence from Micro Data, 2002/03*. IZA Discussion Paper No. 1464.

Taloustutkimus (2003). *Ammattiyhdistysliiketutkimus* (In Finnish). Helsinki: Valitut Palat.

Visser, J. (2003). 'Unions and unionism around the world'. In J. T. Addison and C. Schnaber (eds.), *International Handbook of Trade Unions*. Cheltenham: Edward Elgar, pp. 366–413.