

# Gender differences in educational attainment: Evidence on the role of the tracking age from a Finnish quasi-experiment\*

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June 28, 2005

## Abstract

This paper studies the relationship between the timing of tracking of pupils into vocational and general (academic) secondary education and gender differences in educational attainment. We argue that in a system that streams students into vocational and general tracks relatively late (age 15-16), girls are more likely to choose the general track than boys because of gender differences in the timing of puberty. We exploit the Finnish comprehensive school reform of the 1970's to analyze this hypothesis. This reform postponed the tracking of students from the age of 10-11 to 15-16 and was adopted gradually by provinces so that we can observe members of the same cohorts in both systems. We find that the postponement of the tracking age increased gender differences in the probability of finishing general secondary education and in the years of completed education, in favour of girls.

## 1 Introduction

One of the most striking trends in the educational attainment since the early 1970's has been the relative improvement of the position of women in the industrialised countries. Today, both in the United States and in the European Union, well over 50% of the students in the academic higher education (universities or colleges) are women. These trends are particularly interesting in the light of the increasing returns to education that have been well documented in the literature.<sup>1</sup> Given that the demand for skilled labour has increased considerably in the past decades, one would expect the female dominance in the higher education to have significant effects on the relative economic position of women.

Yet this gradual increase in the female educational attainment has received surprisingly little attention in the literature. The few papers that directly address the issue have used US data and have stressed the importance of gender differences in the returns to education and in the wage dispersion of college graduates. But these explanations fail to account for interesting cross-country differences in the relative educational attainment of women. In the European Union, for example, the percentage of women in the higher education is particularly high in the Nordic countries whereas it is substantially lower in some of the continental countries. Indeed, in Germany men are still in majority among the students in the higher education.

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\*First preliminary draft. Please, do not quote.

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<sup>1</sup>See, for example Katz and Autor (1999) and Acemoglu (2002).

In this paper, we examine the effect of the structure of the educational system on gender differences in educational attainment. Most educational systems in the developed countries stream pupils into general or vocational tracks in the secondary school. Typically, only the general secondary school enables the pupils to continue into higher education in the future. The age at which this tracking is done varies across countries and may or may not coincide with the end of full-time compulsory education. Here, we argue that in systems where this tracking is done relatively late, typically around the age of 14 to 16, girls are more likely to choose the general secondary education than boys because of gender differences in the timing of puberty.

Whereas boys and girls are more or less at the same stage of cognitive and psychological development before the age of 11, after this their developments momentarily diverge. Girls enter puberty on average two years earlier than boys and by the age of 14 most girls are at the end of puberty. Boys, on the other hand, and especially the late-maturers among them, are going through drastic physical and psychological changes at that age and these changes have been documented to have adverse effects on course grades and educational aspirations. Hence, in educational systems where the choice between general and vocational educational tracks is done at around the age of 14 to 16, boys and girls are forced to make educational investment decisions at a time when the information that they receive on their academic abilities and their aspirations can be very different.

Our strategy is to use the comprehensive school reform that was conducted in Finland during 1972-1977 as a quasi-experiment to test this argument. This reform transformed the Finnish educational system into what is called a single-structure educational system. Whereas in the old system the students were split into general and vocational tracks at the age of 11, in the new system this decision was postponed to the age of 16. This reform was conducted gradually by provinces so that we observe individuals of the cohorts 1961-1965 in both systems at the same time. Using this within cohort variation in the age at which the choice between the general and vocational tracks is made, we examine whether the gender difference in the probability of choosing the general track changed in favour of girls as a result of delaying the tracking until age 15-16.

Most of the literature on gender differences in educational attainment has focused on the developing countries. Building on the work by Becker (1981), the authors have studied the parents' investment on their children's education in countries where the households typically invest less on their daughters' education than that of their sons.<sup>2</sup> On the other hand, we are aware of only two papers that directly examine the gender gap in educational attainment in the industrialised countries. Charles and Luoh (2003) document the within cohort gender differences in the educational attainment in the United States and attempt to explain these differences with the gender differences in the wage dispersion of college graduates. Jacob (2002), on the other hand, has data on the cognitive and non-cognitive skills of American high-school pupils and is able to show that the gender differences in non-cognitive skills can account for the most of the gender differences in college attendance.

The differences in educational systems across regions and countries have been used for variety of purposes in the literature. The transitions that have been studied most widely are the dropping out decisions at the end of full-time compulsory education and the transition from secondary to tertiary education. In a particularly influential paper, Angrist and Krueger (1991) exploited the heterogeneity in the school leaving age across different states in the US to estimate the causal effect of education on earnings. More recently, Oreopoulos (2003) has used similar variation across countries to study the long-term consequences of dropping out decisions and Pischke and von Wachter (2004) have replicated the Angrist and Krueger study with German data finding surprisingly different

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<sup>2</sup>Most notably, a special issue of the *Journal of Human Resources* looks at this issue. See, Harris and Willis (1994) on Taiwan, Deolalikar (1994) on Indonesia, and Vijverberg (1994) on Côte d'Ivoire.

results. More interestingly, from our point of view, Meghir and Palme (2004), Aakvik et al (2003), as well as Black et al (2005) use Swedish and Norwegian educational reforms, respectively, that are very similar to the Finnish reform studied here, to study the inter-generational transmission of education and the heterogeneity of the returns to education. However, we are aware of only two papers that explicitly study the consequences of the tracking of pupils into different educational tracks. Dustmann (2004) uses German data and argues that in a system, such as the German one, where the tracking is done at a very early age, the social mobility through education is very low. Hanushek and Wößmann (2005) examine the effect of the tracking age on the performance of students with international PISA test score data.

In this paper, we use a randomly drawn 10% sample of Finnish individuals born between 1960-1966 to study gender differences in the educational attainment. The data come from the Finnish Longitudinal Census Data Files that contain register information on the economic activity, educational attainment, dwelling conditions, and family of the 6.4 million people who were residents in Finland at the time of the censuses that were conducted every five years between 1970-2000. Our data contain information on over 50 000 individuals. In the cohorts born between 1961-1965 we observe individuals of the same cohorts in two systems. We find that the comprehensive school reform increased the female probability of finishing the general secondary school while for boys it's effect was slightly negative. There is also some evidence that the effect on the completed years of schooling for girls was positive, while for boys there is no effect.

Structure of the paper is as follows. In the following section, we discuss cross-country differences in educational systems and the gender gap in educational attainment. We then move on to discuss the theoretical arguments for the existence of the gender gap before we present the natural experiment and the data that we use in our empirical analysis in the fifth section. The sixth section concludes.

## 2 Educational systems in the industrialised countries

The most widely studied educational system in the literature is the American one. In the American system, the upper secondary education, that is high school, is virtually compulsory. The pupils are not streamed into different educational tracks before they leave secondary education. In fact, the first genuine choice that the American pupil makes on his or her education is whether to drop out of high school or not at the age of 16. Thus, all the pupils who follow through the secondary education are, in principle, eligible for academic higher education in the United States.

But the American system is an exception among the industrialised countries. In Europe, most of the educational systems stream pupils into general and vocational tracks before the end of upper secondary school.<sup>3</sup> Only the pupils that have chosen the general track are eligible to continue to higher academic education at the tertiary level.

The age at which this tracking is done varies across countries. Broadly speaking, the European educational systems can be divided into two groups. In the first group, that we call "early tracking", the tracking is done either at the start of or during the lower secondary school. This means that the pupils choose between tracks at the age of 10 to 13 and this decision is taken before the end of full-time compulsory education. The countries with this kind of system are Austria, Germany, Belgium, Netherlands, and France.

In the second group, that we call "late tracking", the tracking is postponed until the start of upper secondary education at the age of 16. In these systems, pupils attend

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<sup>3</sup>In principle, this is the case in all the countries of the European Union but in practice the vocational track is not as widely available as the general track in Portugal, Greece, Spain, Italy, and Ireland.

the same schools during the whole lower secondary education and the choice between the educational tracks coincides with the end of compulsory full-time education. The countries in this group are Denmark, United Kingdom, Sweden, and Finland.

Table 1 reports the tracking ages and summary statistics on the gender differences in education in these countries. One can distinguish gender differences at three levels. First of all, there are differences in the number of students who stay in the educational system in the upper secondary education, be it vocational or academic. Proportion of women in this population is reported in the second column. Second, there are gender differences in the number of students that choose the general education track that enables them to continue to tertiary education. These are reported in the third column. Finally, the number of students that end up attending tertiary education institutions may differ by gender and these differences are reported in the fourth column.

Among the pupils who continue in the upper secondary education, women tend to be in majority in the late tracking countries whereas in the early tracking countries, with the exception of Belgium, women are in a slight minority. The relationship between the tracking age and the gender differences in the take up of general upper secondary education is slightly less clear. There are countries in the early streamers group, such as Germany and France, where the proportion of women is quite high. However, in the late tracking countries, with the notable exception of the United Kingdom, the proportion of women is higher. This is especially true in countries where the vocational track is a widely used option, such as the Nordic countries. Finally, the proportion of women in tertiary education is clearly higher in countries that stream students into different tracks relatively late.

These differences between early- and late-tracking countries suggest that educational systems may have different effects on men and women. Naturally, cross-country differences in the educational attainment shouldn't be interpreted as evidence on the different effects of tracking age on the educational investment decisions of boys and girls. It is very likely that there are a multitude of factors that vary across countries and also have an effect on the gender differences in educational attainment. This is why in the analysis below, we focus on a single country, Finland, and exploit an educational reform that postponed the selection between the general and vocational tracks by five years for a part of the population as a natural experiment.

### 3 Theoretical motivation

Standard models of the demand for education view education as an investment. When deciding between different levels of education the students weigh forgone earnings and direct costs of education (both monetary and psychic) against the future gains from completed education. What is common to these models is that educational investments are usually treated as an one-off decisions where there is no uncertainty about whether the individual will finish the program of schooling or not. Moreover, education is treated as homogeneous so that differences across fields of education are not addressed.

But in practice education consists of a series of sequential choices concerning the amount and the type of education. At various stages, the individuals is faced with the decision of whether to drop out of education or whether to choose a particular educational track. In the developed countries, these choices typically are made during the secondary schooling and at the transition from secondary to tertiary education

Altonji (1993) has presented a model that treats education as sequential choice and that allows for uncertainty about whether one is able to finish the chosen education programme or not. The model was originally designed to analyze the choice of whether to attend college and the choice of college major, but it suits our context as well. Basically,

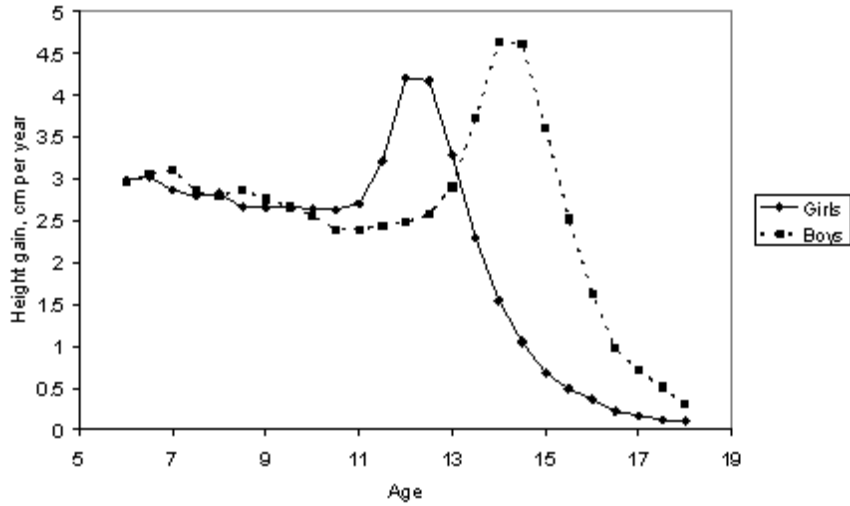


Figure 1: Adolescent spurt in height growth for normally maturing boys and girls. Figure from Tanner (1961). Data from Shuttleworth (1939).

the model views individuals as choosing between dropping out (working) or attending school at two levels, that in our case would be general and vocational, and describes how new information about ones preferences and academic performance influences the decision of whether to continue to upper secondary education and which track to follow.

In the context of Altonji’s model, the factors that can give rise to gender differences in the choice of track in late tracking systems are gender differences in the academic performance and in one’s beliefs about the ability to finish the general educational track. If boys’ school performance is, on average, lower at the age of 14 to 16 and they believe that this reflects their true academic ability, it would not be surprising to see boys as less likely to choose the general educational track.

The gender differences in the timing of adolescence may give rise to such gender differences in academic performance and educational aspirations. In fact, there is a substantial body of literature in the education and psychology literature that document the diverging development of boys and girls around the age of 12 to 16.<sup>4</sup> First of all, it is well known that girls enter puberty on average 1.5 to 2 years earlier than boys: the average starting age of puberty for girls in the developed countries is 12 or 13 whereas for boys it is 14. Figure 1 shows the average height gain of boys and girls who mature near the gender-specific population means. The spurt in height gain is usually strongly correlated with other physical changes at adolescence. Figure 1 clearly shows the gender difference in the timing of this spurt. Tanner (1961) stresses that from the age of 10 and a half onwards girls are approximately two years older than boys in terms of developmental age. Second, several studies have found that school achievement, in terms of grades, falls over the adolescent years whereas on the other hand cognitive development and cognitive abilities increase. In particular, studies such as Duke et al (1982) and Dubas et al (1991) have found that late-maturing boys between the ages of 13 and 17 rank lower than their peers on IQ, standardised achievement tests, and educational expectations and aspirations. Burgess et al (2004) document a consistent gender gap, across both the attainment

<sup>4</sup>For a survey of the literature, see Petersen (1988) and Leffert and Petersen (1995).

and ability distribution, in performance tests in favour of girls in the English schools at the age 14-16.

These gender differences in pubertal timing have lead some authors, such as Waber (1977), to suggest that early pubertal timing can lead to persistent sex differences in cognition, but these claims have not been supported by subsequent work. However, pubertal timing does not have to cause persistent gender differences in order to have lasting effects on the educational attainment in late tracking educational systems. All that matters is that at the time when the decision between general and vocational track is made, girls and boys differ in their achievement and aspirations. We interpret the psychological literature as suggesting that they do. We thus expect to see larger gender differences in educational attainment in the favour of women in the late tracking systems than in the early tracking systems

## 4 Data and results

Finnish comprehensive school reform of the 1970's provides an excellent natural experiment setting where one can observe individuals of the same cohort choosing between vocational and general educational tracks at the age of 15-16 and 10-11. In this section, we briefly describe the basic features of the comprehensive school reform. We then present the data that we use to study the gender differences in educational attainment and the results.

### 4.1 Finnish comprehensive school reform of 1972-1977

The Finnish pre-reform and post-reform educational systems are depicted in table 2. Finland followed the rest of the Nordic countries in the 1970's and implemented a thorough reform of its secondary education system. The Swedish and Norwegian reforms are described in detail in Meghir and Palme (2004) and Aakvik et al (2003) respectively. These reforms were influenced by the expansion of secondary schooling in the United States. The aim of the reforms was to extend the years of compulsory schooling to same levels as in other industrialised countries and to widen the access to general secondary education.

The Finnish pre-reform educational system dated back to 1921. Compulsory education in this system was provided by six year long folk school. Pupils entered the folk school at the age of 7 and in the fourth grade, at the age of 10-11, they could apply to the lower general secondary school which provided eligibility for upper general secondary school and subsequently to academic tertiary education. The access to the general secondary education was based on the pupil's school achievement. The pupils who chose not to apply remained in folk school for two more years after which the compulsory education was finished. After this, the folk school students could still continue at civic school, which offered a two- or three-year education. After civic school, it was possible to move up to vocational school.

The school system was reformed in the 1970s: the previous folk school, civic school and lower secondary school were replaced by a nine-year comprehensive school offering general basic education. Now, all the pupils followed the same curriculum in the same establishments and the tracking into general and vocational tracks was postponed until the age of 16. At the same time, upper secondary school was separated from secondary school to form a distinct form of institution.

The reform was not adopted simultaneously in all the Finnish provinces. There was a considerable amount of resistance to the reform and as a compromise it was agreed to carry out the transition into the comprehensive school gradually by provinces. This gradual adoption of the new system was supposed to allow for the examination of the

effects before the full transition to the new system. The transition took place between 1972 and 1977 so that in each municipality that adopted the reform, the pupils from the first to the fifth grade (ie pupils aged 7-11) in the folk school were immediately affected by the reform. This means that the first cohort to be affected by the reform was the cohort born in 1961 who were at the fifth grade in 1972. The last cohort with both pre-reform and post-reform pupils was the 1965 cohort who were in their sixth grade in 1977 and were thus not affected by the reform in the last municipalities to adopt the reform. The adoption of the reform was dictated by the geographical location of the municipality so that the first regions to be affected by the reform were situated in the north of the country. The last municipalities to enter the new system were the capital Helsinki and its surroundings.

## 4.2 Data

This paper uses data from the Finnish Longitudinal Census Data Files (FLCD) to compare the education outcomes of men and women who were affected by the comprehensive school reform and who were not. FLCD are a data source provided by the Statistics Finland that in principle contains information on all the 6.3 million individuals who had legal residence in Finland during the census years 1970, 1975, 1980, 1985, 1990, 1995 and 2000. The data contain information on the economic activity, education, income, and dwelling conditions of these individuals. Furthermore, the household identifiers can be used to link family members to each other.

We have access to a 10% sample of the cohorts born in 1960-1966. This sample contains information on 52 549 individuals. The municipality codes in the data were used to determine whether the individuals was affected by the comprehensive school reform or not. The criterion to be classified as affected by the reform was to be in a fifth grade or below at the year when the municipality adopted the reform. Altogether 23 474 individuals (45%) in our data fall into the treatment group.<sup>5</sup>

In table 3, we report the percentages of individuals in treatment and control groups by birth cohorts. For confidentiality reasons, the Statistics Finland didn't allow us to have the actual municipality codes in our final sample and the information on the adoption year of the reform was linked by the Statistics Finland. To account for the observable differences across the municipalities that fall into treatment and control groups we asked Statistics Finland to link the municipal percentages of individuals with a tertiary degree and mean incomes to the data as well. As table 3 makes clear, the cohorts 1960 and 1966 were totally unaffected and affected by the reform, respectively. As of 1961 cohort, the reform gradually spread from north to south. Although the adoption of the reform was determined by the geographic location, in the case of Finland, this tends to be strongly correlated with the income and education levels. As table 3 indicates, the municipalities that first adopted the reform tend to have lower mean education levels and incomes than the municipalities in the control group. This highlights the importance of controlling for these observable differences in our analysis.

## 4.3 Results

There are no large differences in the overall educational attainment of the individuals who went through pre- and post-reform educational systems in our sample cohorts. Both in the pre- and post-reform groups approximately 44% of the individuals chose the academic secondary school track. The number of years of completed education was slightly higher in the post-reform group but difference was only 0.2 years.

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<sup>5</sup>552 individuals moved out of the country and 90 individuals died before their treatment status could be determined.

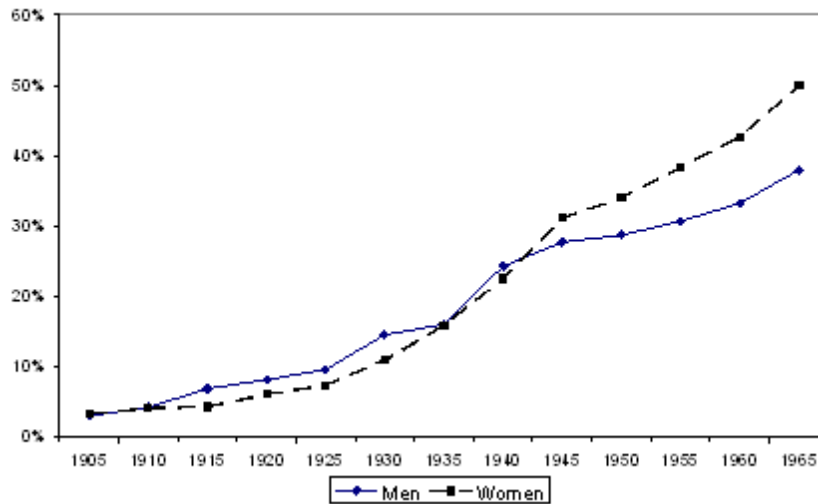


Figure 2: Proportion of men and women finishing general secondary school by cohort groups.

Nevertheless, the aim of this paper is not to evaluate the overall effects of the reform, but to find out whether these effects are different for men and women. The figure 2 plots the proportions of individuals that finished general secondary school by gender and cohorts. As is clear from the figure, women became more likely to finish the general track several cohorts before the 1961 cohort, which was the first cohort to be affected by the comprehensive school reform. Clearly, there is a secular trend in the both female and male educational attainment. In this paper, we want to find out whether the comprehensive school reform accelerated the divergence of the female and male educational attainment that was already visible in the cohorts born during the WW II.

In table 4, we report the percentages of girls and boys that finished general secondary education across the pre- and post-reform groups and birth cohorts. In general, the percentages of pupils finishing general secondary education tend to be lower in the in the post-reform group. The last row of table 4 pools the cohorts into simple pre- and post comparison groups. Overall, the reform seems to have a slightly negative effect on boys' probability of finishing general secondary education and a slightly positive effect on girls. Gender difference tends to be higher in the post-reform group (with the exception of cohort 1963). The gender difference is .03 higher in the post-reform group.

Linear probability model of finishing upper secondary school confirms what table 4 indicated. The first column of table 5 reports the estimated coefficients from a standard difference-in-differences regressions where the dummy of choosing the general track is regressed on female and reform dummies and their interactions as well as a full set of cohort and municipality dummies. As can be seen from table 5, the estimated effects of the reform are very close to the differences in means in the last row of table 4. For boys, the effect of the reform is slightly negative although not statistically significant. For girls, the effect is clearly positive and the effect on gender difference is .03. These results are not affected when we add control's for parents income and education and for mean income and education in the municipality in the second column of table 5.

While the impact of the reform on the probability of finishing upper secondary school



would be the immediate effect of the reform, the purpose of the reform was also to increase the average level of education in the population. In table 6, we report the average number of years of completed schooling for men and women in the treatment and control groups across birth cohorts. The reform also seems to increase the gender difference in the years of completed schooling but differences are not statistically significant. Whereas the effect of the reform on the probability of choosing the academic track was negative for boys, it's effect on years of completed schooling is positive for both boys and girls.

In table 7, we report results from a difference-in differences regression of completed years of schooling on the reform and female dummies and their interaction as well as a full set of cohort and municipality dummies. The pattern of the results is similar as in the linear probability model of choosing the academic track but the effect on the gender difference is not statistically significant. The introduction of controls for parental and municipal income and education does not affect the results.

## 5 Conclusions

Gender differences in educational attainment have received little attention in the economics literature despite the increasing returns to education in recent decades. Here, we examine the hypothesis according to which the female dominance in higher education can be, at least partly, explained by the age at which students are streamed into general and vocational educational tracks. We argue that the educational systems that stream students late, that is around the age of 16, tend to favour girls because of gender differences in the timing of puberty. Girls are momentarily ahead of boys in both biological and psychological development at the ages of 14 to 16 and this may be reflected in long term educational outcomes, if important decisions are taken at that age.

Finnish comprehensive school reform of the 1970's can be used to analyse this hypothesis. This reform postponed the tracking age from 11 to 16 and was adopted gradually by provinces so that we can observe members of the same cohort in different systems. We use Finnish education survey data to study the effects of the reform on the educational attainment of men and women in the cohorts that contain individuals from both pre- and post-reform educational systems. We find that the reform increased the gender difference in the probability of choosing the general secondary school in favour of girls. The reform also had a positive effect on the completed years of schooling for both girls and boys but it's effect on the gender difference in the completed years of schooling was not significant.

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**Table 1** Tracking age and the proportion of women in upper secondary and tertiary education in European countries 1999/2000.

	(1) Tracking age	(2) Proportion of women in upper secondary education	(3) Proportion of women in upper general secondary education	(4) Proportion of women in tertiary education
<i>Early tracking</i>				
Austria	10	.468	.548	.510
Germany	10	.474	.551	.481
Belgium	12	.510	.539	.523
Netherlands	12	.482	.531	.500
France	13	.492	.560	.542
<i>Late tracking</i>				
Denmark	16	.508	.565	.571
Finland	16	.525	.577	.537
Sweden	16	.575	.579	.582
UK	16	.538	.498	.539

Note: Tracking age refers to the age at which pupils are streamed into vocational and general secondary education. Proportion of women in upper secondary education is the share of women in the educational track that enables the student to participate in the academic tertiary education. Proportion of women in tertiary education is the share of women in the population of students in the tertiary education institutions. Greece, Spain, Portugal, Italy and Ireland are dropped because vocational education is not widely available in those countries. Source: Eurostat.

**Table 2** Finnish educational systems

*The pre-reform system*

Age

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Folk school				General secondary school								Universities						
				Civic school				Vocational schools										

*The post reform-system*

Age

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Comprehensive school									General secondary school			Universities						
									Vocational school			Higher vocational education						

**Table 3** Mean municipal education and income by birth cohorts and treatment groups

Birth Cohort	Control			Treatment		
	% individuals	Mean municipal education	Mean municipal income	% individuals	Mean municipal education	Mean municipal income
1960	100	10.15	9423	0.00	.	
1961	91	10.44	9553	9	7.89	8235
1962	75	11.04	9957	25	7.75	7905
1963	56	12.02	10638	44	8.12	8091
1964	36	13.75	11680	64	8.649	8467
1965	14	19.47	14385	86	9.12	8897
1966	0	.		100	10.55	9647

Control refers to individuals that went through the pre-reform education system and treatment refers to individuals who went through the post-reform education system. % individuals refers to the percentage of the cohort that falls into each category. Mean municipal education is the average percentage of individuals with a tertiary degree in the municipalities in 1980. Mean municipal income is the average taxable income in the municipalities in 1980 in euros.

**Table 4** Differences in the percentage of individuals who finish upper general secondary school across cohorts, reform status and gender

	Pre-reform			Post-reform			Difference in gender difference
	Male	Female	Difference	Male	Female	Difference	
1960	.349	.488	.140** (.013)				
1961	.365	.500	.135** (.014)	.325	.483	.158** (.043)	.023 (.045)
1962	.393	.507	.113** (.015)	.326	.468	.143** (.025)	.030 (.030)
1963	.379	.521	.142** (.017)	.345	.513	.168** (.019)	.027 (.025)
1964	.427	.532	.105** (.021)	.367	.524	.161** (.016)	.057** (.026)
1965	.464	.578	.114** (.035)	.368	.518	.149** (.014)	.035 (.038)
1966				.375	.538	.164** (.014)	
Total	.378	.508	.130** (.007)	.360	.519	.159** (.007)	.030** (.010)

Note: Cells report the proportion of individuals who finished the upper general secondary education with a diploma. Standard errors are in parentheses.

**Table 5** Probit model of the probability of finishing the upper general secondary school. Marginal effects.

	(1)	(2)
Female	0.129 (0.007)	0.131 (0.007)
Reform	-0.016 (0.010)	-0.015 (0.009)
Female * reform	0.031 (0.010)	0.029 (0.010)
Father's income		0.046 (0.003)
Mother's income		0.056 (0.004)
Father's education		0.029 (0.001)
Mother's education		0.020 (0.001)
Municipal education		0.019 (0.006)
Municipal income		-0.004 (0.001)
Cohort dummies	7	7
Municipal dummies	313	313
Constant	0.355 (0.007)	-0.065 (0.069)
Observations	40044	40044
R-squared	0.04	0.13

Note: The dependent variable is the probability of finishing upper general secondary school with a diploma. Reform refers to a dummy that takes value one if the individual attended a post-reform school. Female x reform is an interaction of the reform and female dummies.

**Table 6** Differences in the years of completed education across reform status and gender

	Pre-reform			Post-reform			Difference in gender difference
	Male	Female	Difference	Male	Female	Difference	
1960	11.49	12.16	.671** (.077)				
1961	11.59	12.25	.663** (.079)	11.47	12.35	.883** (.221)	.219 (.260)
1962	11.64	11.96	.322** (.084)	11.53	11.92	.388** (.125)	.068 (.163)
1963	11.60	12.05	.455** (.100)	11.68	12.14	.463** (.096)	.008 (.141)
1964	11.73	12.25	.523** (.128)	11.83	12.40	.573** (.084)	.051 (.146)
1965	11.93	12.28	.348 (.217)	11.84	12.43	.595** (.074)	.247 (.206)
1966				11.87	12.57	.700** (.079)	
Total	11.60	12.14	.537** (.039)	11.78	12.38	.595** (.039)	.058 (.055)

Note: Cells report the average number of years of completed schooling. Standard errors are in parentheses.

**Table 7** Years of education regression

	(1)	(2)
Female	0.541 (0.041)	0.552 (0.036)
Reform	0.128 (0.055)	0.135 (0.051)
Female * reform	0.061 (0.057)	0.046 (0.054)
Father's income		0.281 (0.016)
Mother's income		0.311 (0.025)
Father's education		0.209 (0.008)
Mother's education		0.172 (0.009)
Municipal education		0.108 (0.030)
Municipal income		-0.024 (0.006)
Cohort dummies	7	7
Municipal dummies	313	313
Constant	11.557 (0.047)	8.476 (0.341)
Observations	40044	40044
R-squared	0.03	0.17

Note: The dependent variable is the years of completed education. Reform refers to a dummy that takes value one if the individual attended a post-reform school. Female x reform is an interaction of the reform and female dummies.