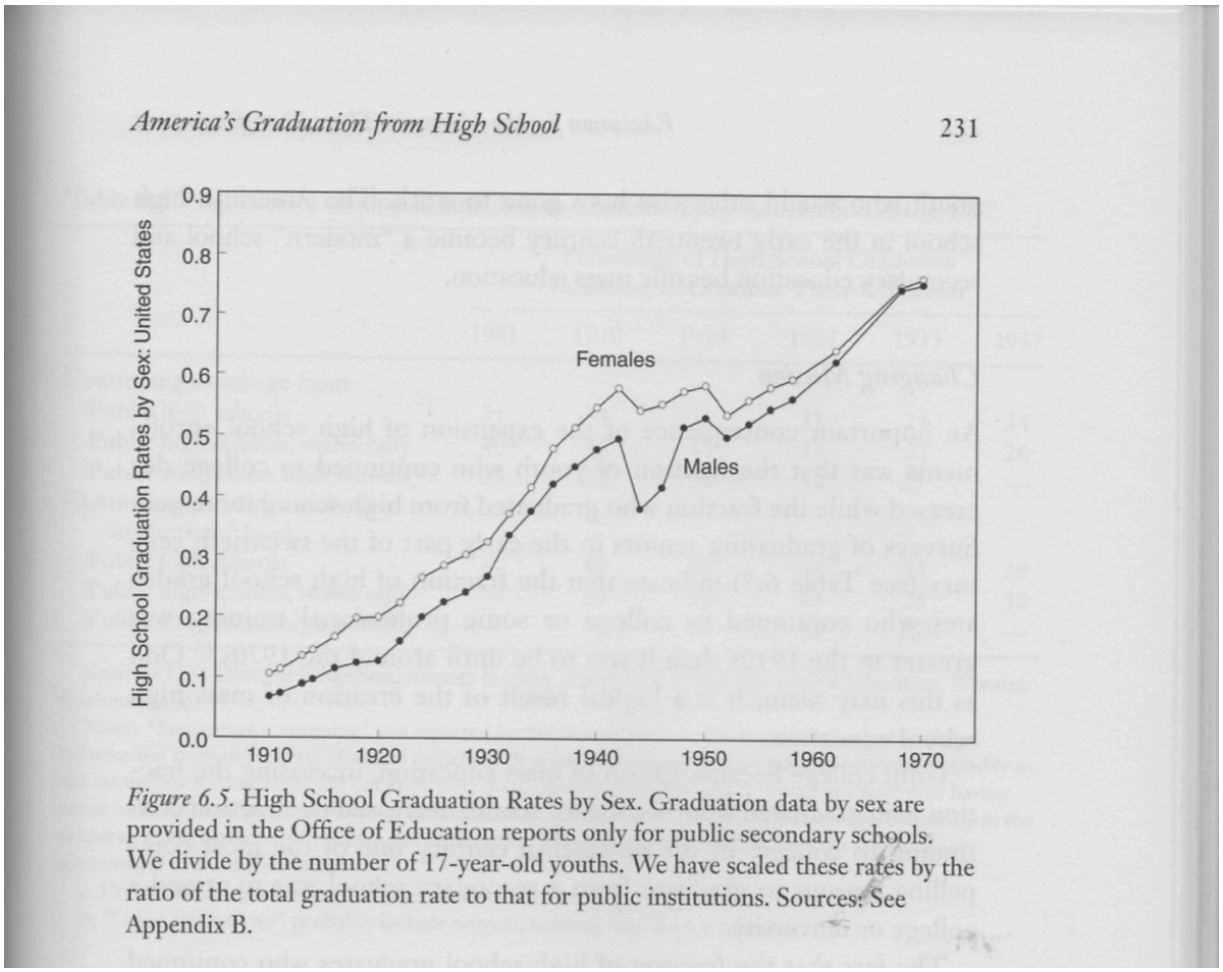
Slides for NRC Planning Meeting

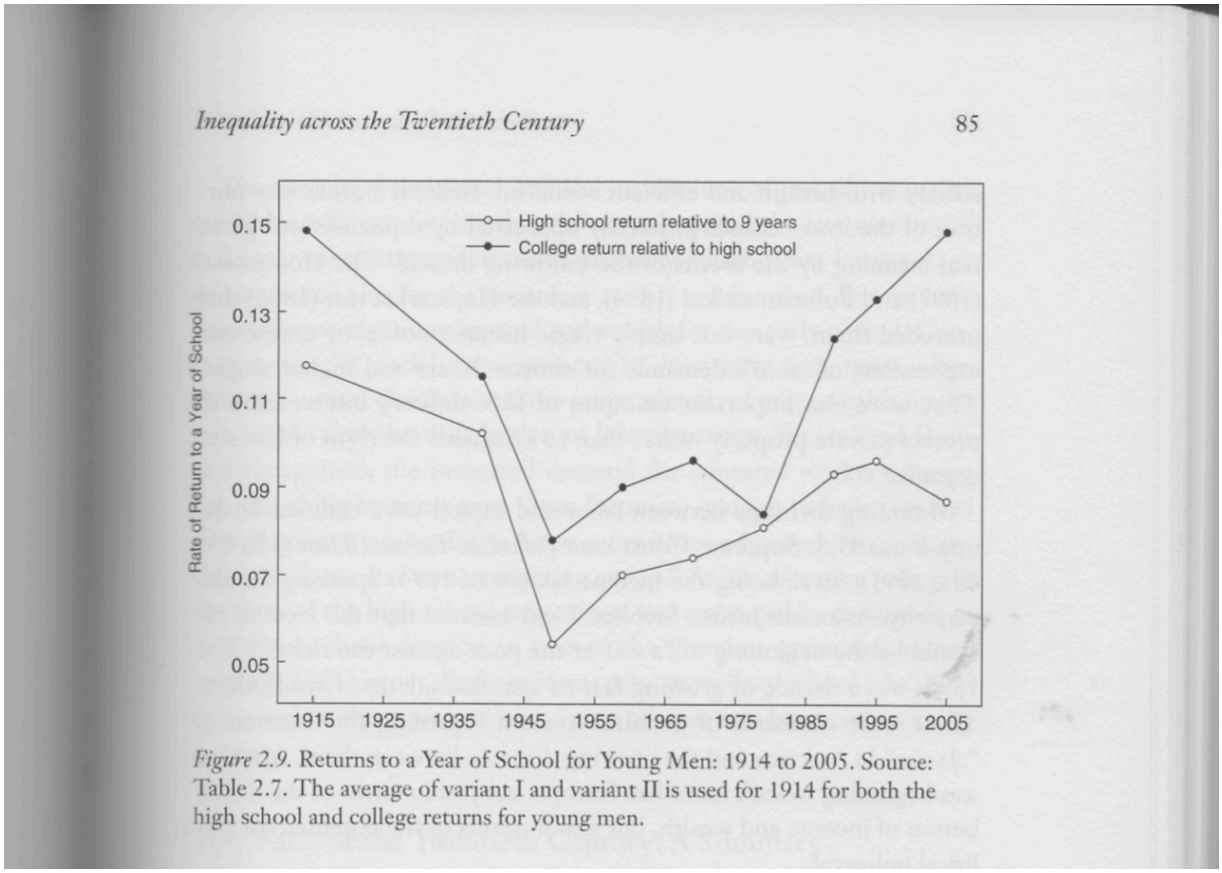
October 11, 2013

Figure 1: from Goldin and Katz, 2008. The Race between Education and Technology. Cambridge: Harvard University Press.



Goldin & Katz

Figure 2: from Goldin and Katz, the Race between Education and Technology



Goldin & Katz

Figure 3: from Goldin and Katz, the Race between Education and Technology

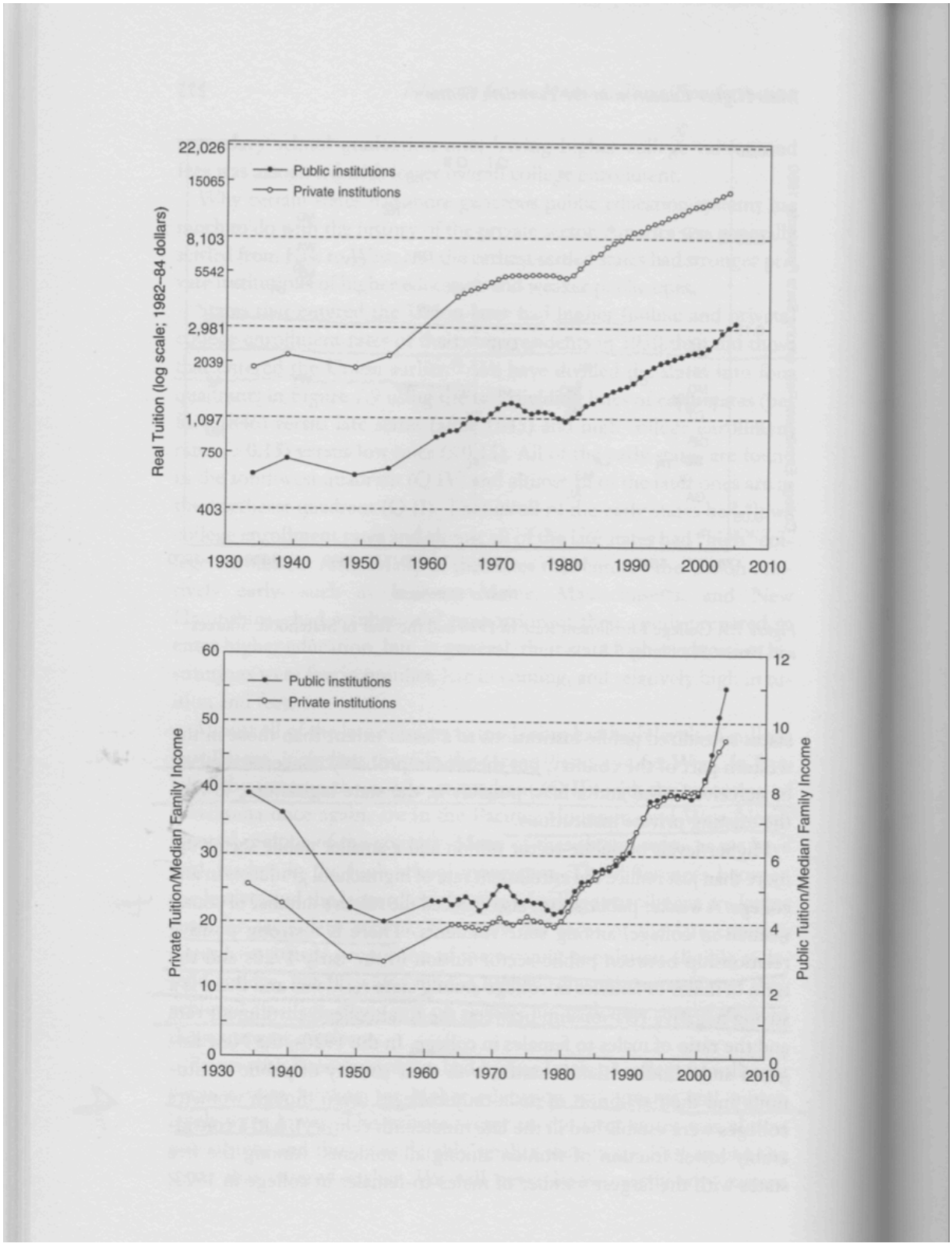
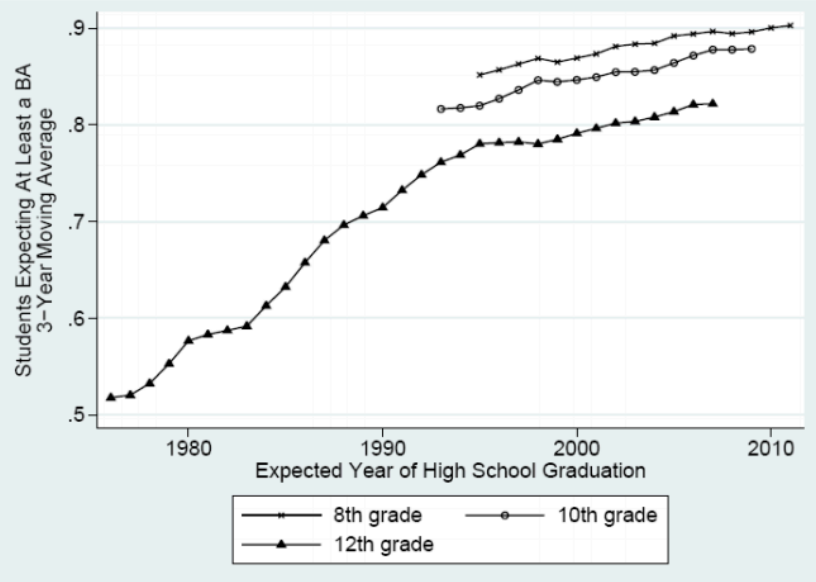


Figure 4: from Jacob and Wilder 2009, "Educational Expectations and Attainment" NBER 15683.



(b) College Degree

28

Jacob & Wilder

Figure 5: from DiPrete and Buchman, 2013. The Rise of Women. NY: Russell Sage Foundation

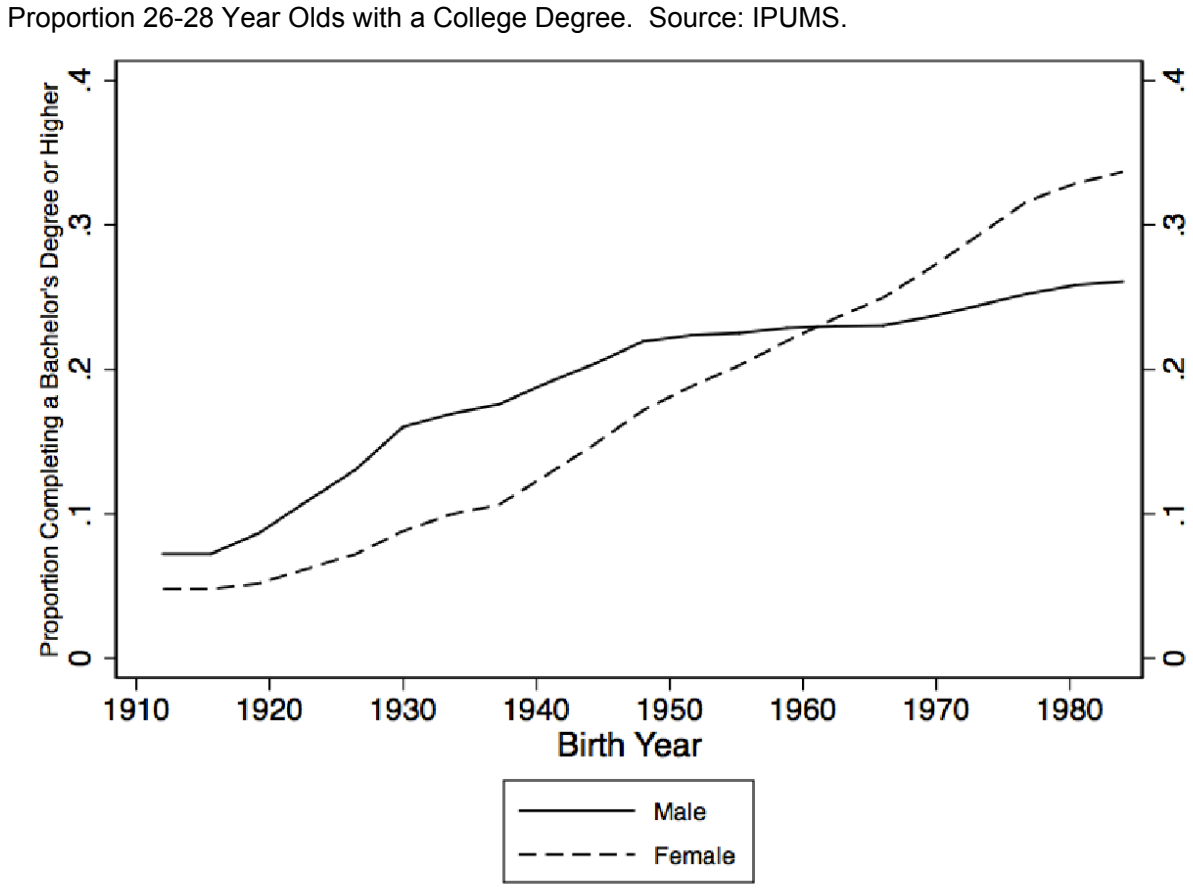
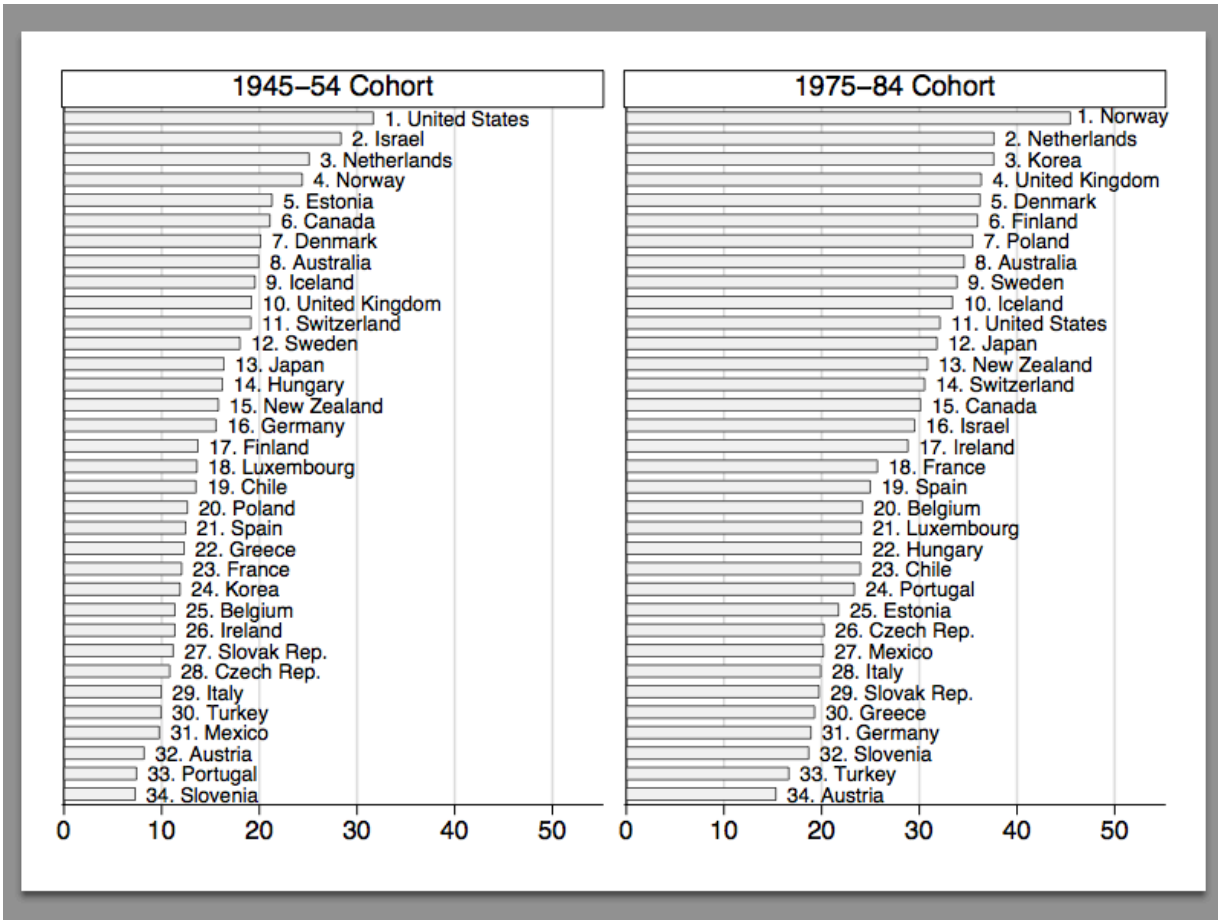
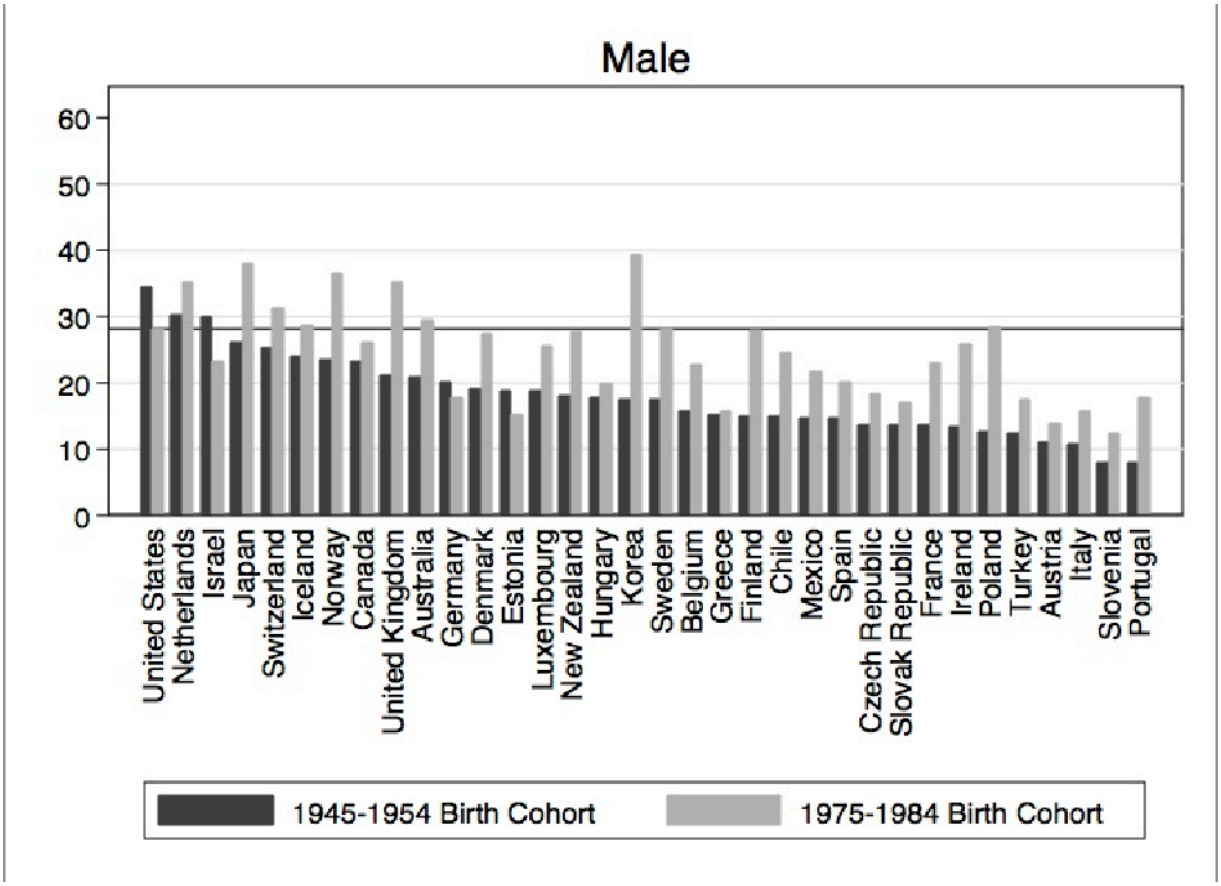


Figure 6: from DiPrete and Buchmann. The Rise of Women



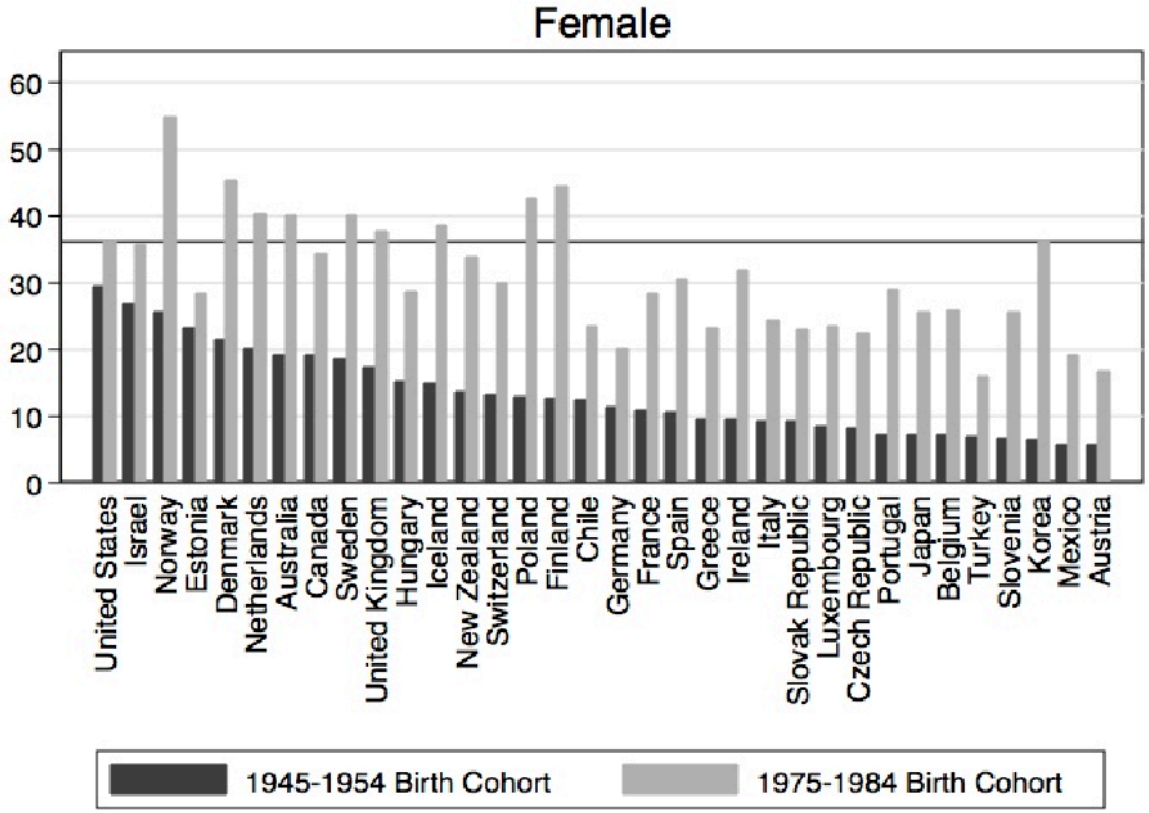
DiPrete & Buchmann

Figure 7: from DiPrete and Buchmann, The Rise of Women



DiPrete & Buchmann

Figure 8: from DiPrete and Buchmann. The Rise of Women.



DiPrete & Buchmann

Figure 9: from Fry and Parker. 2013. Record Shares of Young Adults have finished both High School and College.

Untitled Note

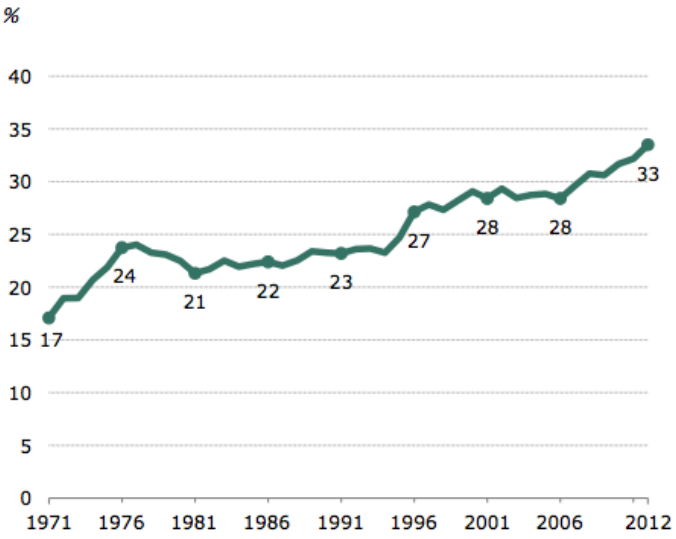
PEW SOCIAL & DEMOGRAPHIC TRENDS

SECTION 2: BACHELOR'S DEGREE COMPLETION AMONG YOUNG ADULTS

Completion of four-year college degrees is up sharply in the past five years among the nation's young adults. In 2012 a record one-third of adults ages 25 to 29 have attained at least a bachelor's degree. As recently as 2006 fewer than 30% of 25- to 29-year-olds had finished at least a bachelor's degree.

Record levels of bachelor's degree attainment in 2012 are apparent for most basic demographic groups.

Share of 25- to 29-Year-Olds Completing Four-Year College Degrees, 1971-2012



Note: The educational attainment question was changed in 1992. Before 1992, persons completing at least four years of college are considered to have completed at least a four-year college degree.

Source: Pew Research Center tabulations of March Current Population Surveys, 1971-2012

PEW RESEARCH CENTER

Fry and Parker

Figure 10: from OECD Skills Outlook 2013.

■ Figure 2.4 ■

Distribution of literacy proficiency scores

Mean literacy proficiency and distribution of literacy scores, by percentile

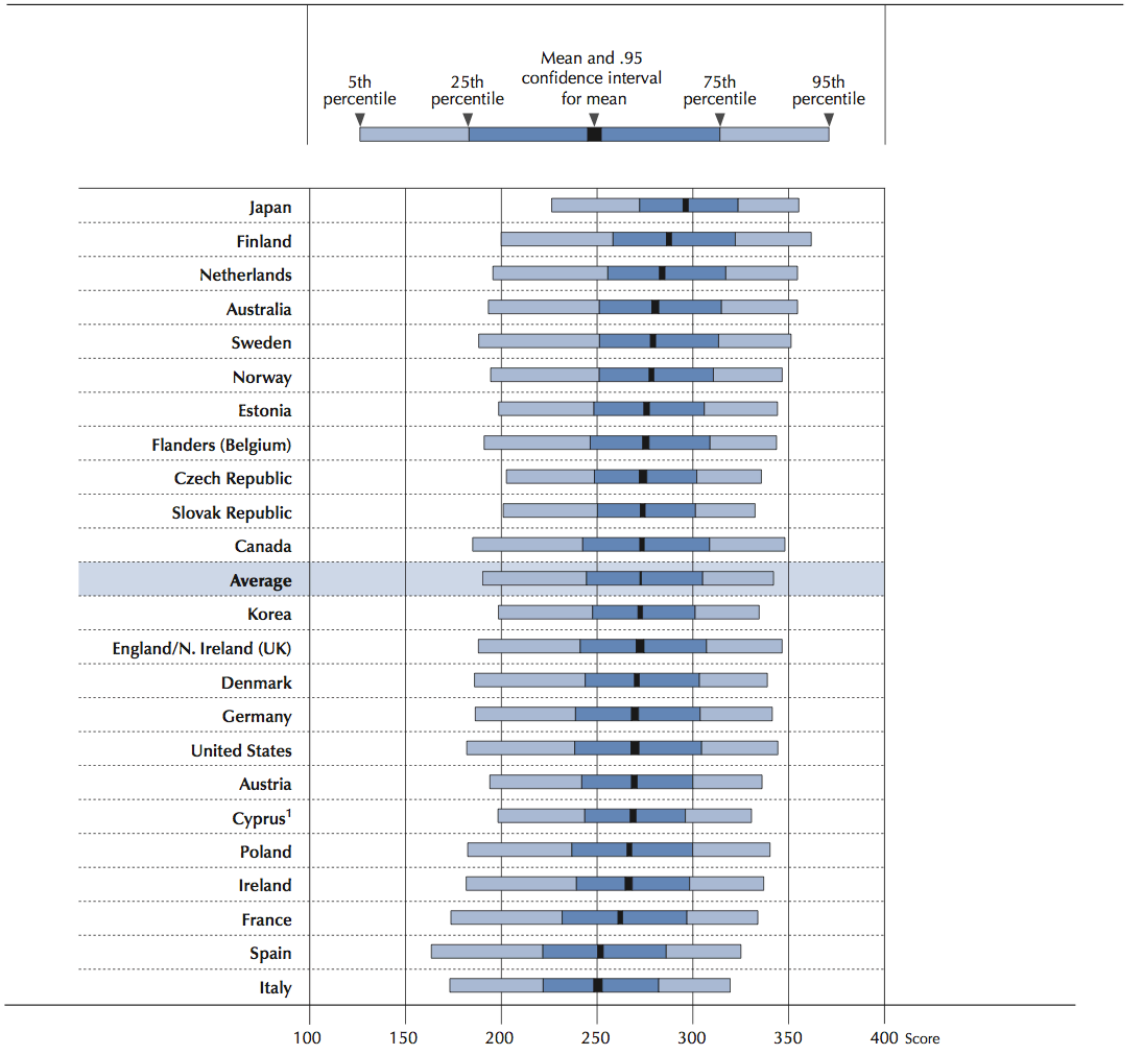


Figure 11: from OECD Skills Outlook 2013.

■ Figure 2.8 ■

Distribution of numeracy proficiency scores

Mean numeracy proficiency and distribution of numeracy scores, by percentile

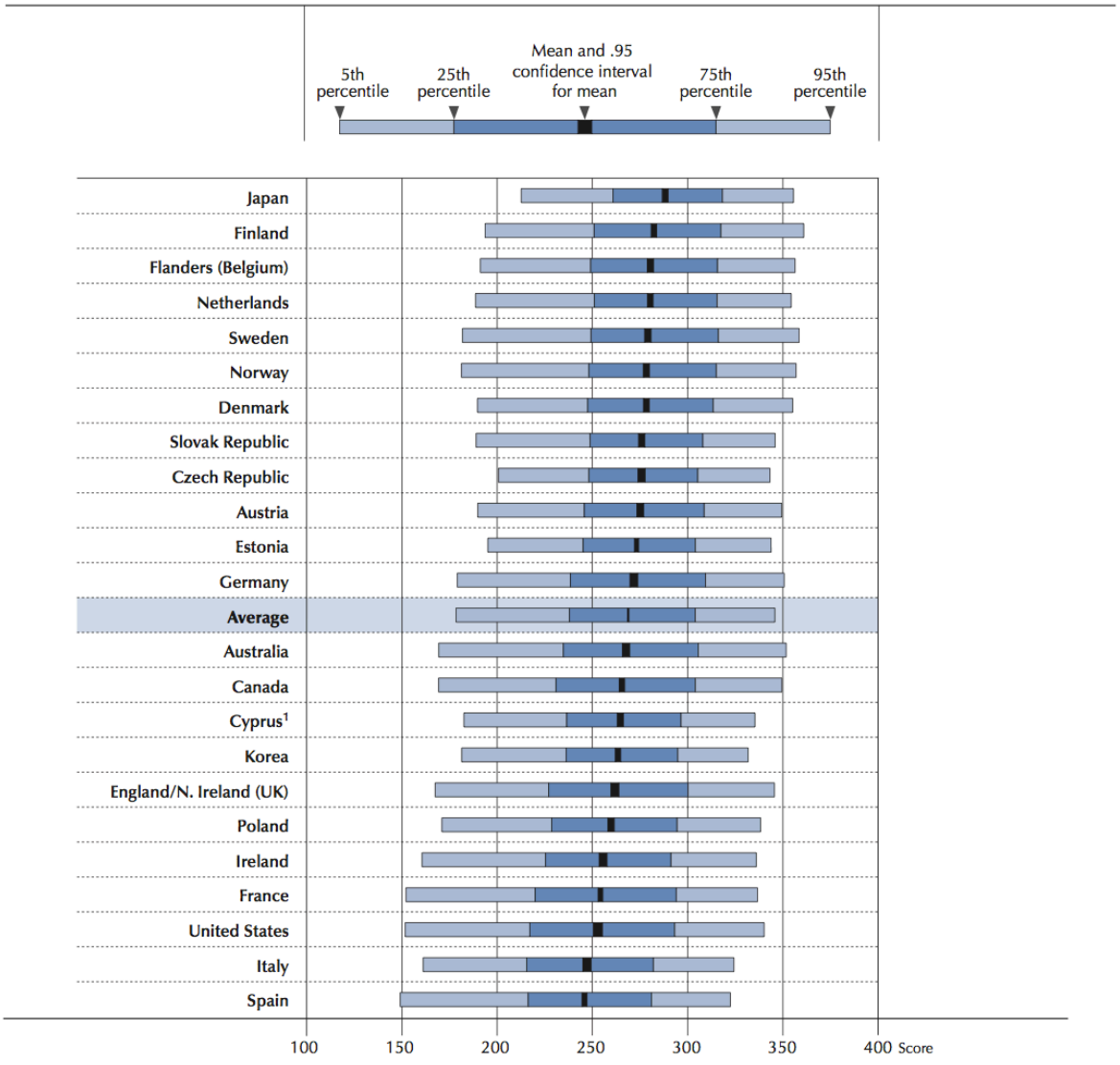
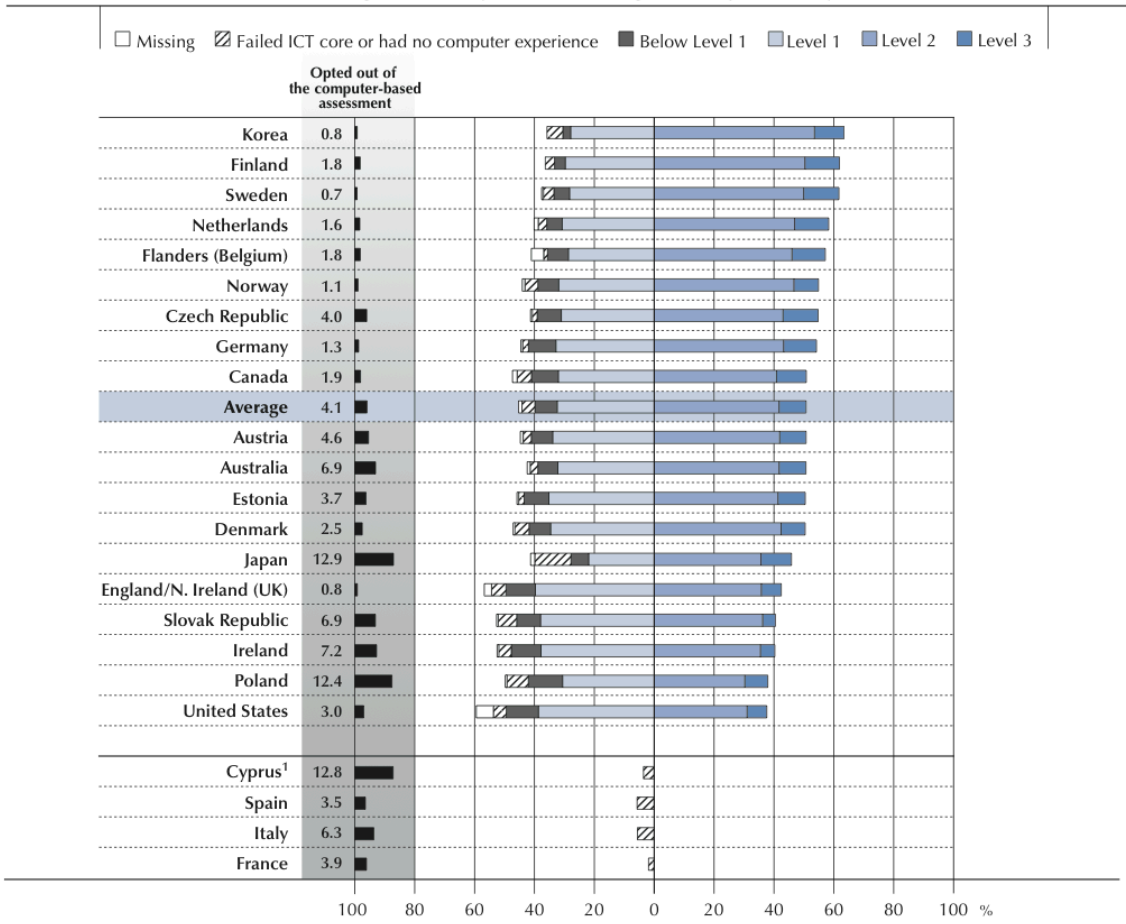


Figure 12: from OECD Skills Outlook 2013.

■ Figure 2.10b ■

Proficiency in problem solving in technology-rich environments among young adults

Percentage of 16-24 year-olds scoring at each proficiency level



1. See notes at the end of this chapter.

Notes: Young adults in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response). The missing category also includes adults who could not complete the assessment of problem solving in technology-rich environments because of technical problems with the computer used for the survey. Cyprus,[1] France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment.

Countries are ranked in descending order of the combined percentage of adults scoring at Levels 2 and 3.

Figure 13: from Hanushek and Woessman. 2011 The Economics of International Differences in Educational Attainment. Ch. 2. Handbook of the Economics of Education Volume 3.

Table 2.4 An Example of an International Education Production Function: PISA 2003

	Coefficient	Standard error
STUDENT CHARACTERISTICS		
Age (years)	17.59***	*(1.10)*
Female	−17.36***	*(0.64)*
Preprimary education (more than 1 year)	5.61***	*(0.70)*
School starting age	−3.86***	*(0.51)*
Grade repetition in primary school	−35.79***	*(1.41)*
Grade repetition in secondary school	−34.73***	*(1.65)*
Grade		
7th grade	−47.18***	*(4.07)*
8th grade	−28.01***	*(2.24)*
9th grade	−12.49***	*(1.34)*
11th grade	−6.95***	*(2.06)*
12th grade	7.03	*(4.83)*
Immigration background		
First generation student	−9.05***	*(1.54)*
Non-native student	−9.04***	*(1.64)*
Language spoken at home		
Other national dialect or language	−23.74***	*(2.85)*
Foreign language	−8.38***	*(1.67)*
FAMILY BACKGROUND		
Living with		
Single mother or father	19.35***	*(1.84)*
Patchwork family	21.27***	*(2.03)*
Both parents	27.43***	*(1.83)*
Parents' working status		
Both full-time	−2.48*	*(1.33)*
One full-time, one half-time	6.74***	*(1.06)*
At least one full time	13.75***	*(1.17)*
At least one half time	8.42***	*(1.13)*
Parents' job		
Blue collar high skilled	0.43	*(0.97)*
White collar low skilled	2.86***	*(0.93)*
White collar high skilled	8.64***	*(0.99)*
Books at home		
11–25 books	5.55***	*(0.98)*
26–100 books	22.94***	*(1.01)*
101–200 books	32.78***	*(1.12)*
201–500 books	49.83***	*(1.22)*
More than 500 books	51.18***	*(1.40)*
Index of Economic, Social and Cultural Status (ESCS)	18.11***	*(0.52)*
GDP per capita (1,000 $)	−1.89*	*(1.06)*
SCHOOL INPUTS		
School's community location		
Town (3000–100,000)	3.23*	*(1.53)*
City (100,000–1,000,000)	10.78***	*(1.89)*
Large city with > 1 million people	7.90***	*(2.38)*

Figure 14: from Hanushek and Woessman. 2011 The Economics of International Differences in Educational Attainment. Ch. 2. Handbook of the Economics of Education Volume 3.

Table 2.4 An Example of an International Education Production Function: PISA 2003—cont'd

	Coefficient	Standard error
Educational expenditure per student (1000 $)	1.17***	*(0.41)*
Class size (mathematics)	1.47***	*(0.07)*
Shortage of instructional materials		
Not at all	−10.18***	*(2.58)*
Strongly	6.72***	*(1.30)*
Instruction time (minutes per week)	0.04***	*(0.01)*
Teacher education (share at school)		
Fully certified teachers	9.72***	*(3.42)*
Tertiary degree in pedagogy	6.57***	(2.01)
INSTITUTIONS		
Choice		
Private operation	57.59***	*(8.36)*
Government funding	81.84***	*(22.33)*
Accountability		
External exit exams	25.34*	*(10.05)*
Assessments used to decide about students' retention/promotion	12.19***	*(1.63)*
Monitoring of teacher lessons by principal	4.56***	*(1.34)*
Monitoring of teacher lessons by external inspectors	3.80***	*(1.42)*
Assessments used to compare school to district/national performance	2.13*	*(1.26)*
Assessments used to group students	−6.07***	*(1.30)*
Autonomy and its interaction with accountability		
Autonomy in formulating budget	−9.61***	*(2.18)*
External exit exams x Autonomy in formulating budget	9.14***	*(3.12)*
Autonomy in establishing starting salaries	−8.63***	*(3.25)*
External exit exams x Autonomy in establishing starting salaries	5.87	*(3.98)*
Autonomy in determining course content	0.18	*(1.91)*
External exit exams x Autonomy in determining course content	3.22	*(2.86)*
Autonomy in hiring teachers	20.66***	*(2.25)*
External exit exams x Autonomy in hiring teachers	−28.94***	*(3.37)*
Students	219,794	
Schools	8,245	
Countries	29	
R^2 (at student level)	0.390	
R^2 (at country level)	0.872	

Notes: Dependent variable: PISA 2003 international mathematics test score. Least-squares regressions weighted by students' sampling probability. The models additionally control for imputation dummies and interaction terms between imputation dummies and the variables. Robust standard errors adjusted for clustering at the school level in parentheses (clustering at country level for all country-level variables, which are private operation, government funding, external exit exams, GDP per capita, and expenditure per student). Significance level (based on clustering-robust standard errors): *** 1%, ** 5%, * 10%.

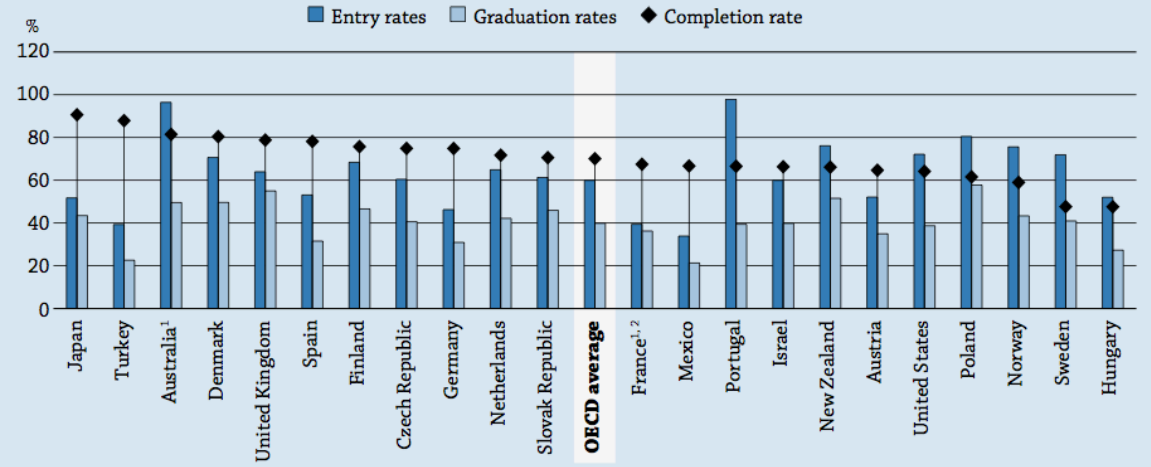
Source: Own calculations based on Woessmann, Luedemann, Schuetz, and West (2009), who provide additional background details.

Figure 15: from OECD Education at a Glance 2013.

Box A4.1. Interaction between entry rates, graduation rates and completion rates

These three indicators are highly correlated and explain the main differences between tertiary education systems across countries. A change in one of these factors can affect the others. Entry and graduation rates are based on the total population, unlike completion rates, which are calculated from an entry cohort at a certain level of education.

Chart a. Entry, graduation and completion rates at tertiary-type A level (2011)



1. Year of reference 2010.
2. First-degree graduation rates instead of first-time graduation rates.

Countries are ranked in descending order of the completion rates in 2011.

Source: OECD. Tables A3.1a, A4.1 and C3.1a. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).

StatLink http://dx.doi.org/10.1787/888932846462

The definitions of entry rates, graduation rates and completion rates (see *Definitions* section) shed light on the relationships among them. In reality, completion rates do not correspond to the simple division of graduation rates by entry rates; but a significant change in entry rates or in completion rates will definitely influence the indicator on graduation rates.

...

Figure 16: from OECD Education at a Glance 2013.

Table A4.1. Completion rates in tertiary education (2011)

			Year for new entrants		Tertiary education				Tertiary-type A education				Tertiary-type B education			
					Completion rates (completed at least first 5B or 5A programme)[1]			Not graduated from tertiary education (4) = 100-(1)	5A completion rates (completed at least first 5A programme)[2]			Not graduated from 5A level but re-oriented with success at 5B level	5B completion rates (completed at least first 5B programme)[3]			Not graduated from 5B level but re-oriented with success at 5A level
		Method	5A	5B	M+W	Men	Women		M+W	Men	Women		M+W	Men	Women	
					(1)	(2)	(3)	(4) = 100-(1)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Australia	Cross-section	2005-07	m	m	m	m	m	82	74	88	m	m	m	m	m
	Austria	Cross-section	2006-08	m	m	m	m	m	65	63	67	m	m	m	m	m
	Belgium (Fl.)	True cohort	2007-08	2007-08	73	66	79	27	69	62	76	4	73	65	79	1
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	True cohort (ISCED 5A), cross-section (ISCED 5B)	2001	2001	72	64	78	28	75	67	83	m	59	49	64	m
	Denmark	True cohort	2000-01	2000-01	81	78	84	19	80	77	83	3	68	68	69	6
	Estonia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Finland	True cohort	2000	a	76	66	83	24	76	66	83	a	a	a	a	a
	France	Longitudinal survey	2002-09	2002-09	80	m	m	20	68	m	m	14	73	m	m	2
	Germany	True cohort (ISCED 5A), cross-section (ISCED 5B)	1999-2002	2008-09	m	m	m	m	75	73	77	a	75	71	77	a
	Greece	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Hungary	Cross-section	2006-07 / 2009-10	2009-10	53	48	56	47	48	45	50	m	42	33	47	m
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	m	m	m	m	m	m	m	66	62	70	m	m	m	m	m
	Italy	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Japan	Cross-section	2004-06	2008	90	87	92	10	91	88	95	m	87	86	89	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	Cross-section	2007-08	2009-10	66	61	72	34	67	61	72	m	62	58	67	a
	Netherlands	True cohort	2003-04	a	72	65	78	28	72	65	78	m	m	m	m	a
	New Zealand	True cohort	2004	2004	59	56	61	41	66	65	67	5	45	41	48	7
	Norway	True cohort	1999-2000	1999-2000	59	52	64	41	59	52	64	m	59	55	64	m
	Poland	Cross-section	2006-09	2008-09	62	48	74	38	62	48	74	m	64	46	68	m
	Portugal	Cross-section	2006-10	2009	67	59	73	33	67	59	73	m	m	m	m	n
	Slovak Republic	Cross-section	2006-09	2008-10	71	m	m	29	71	m	m	m	76	68	80	m
	Slovenia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Spain	Cross-section	2008-09	2007-10	m	m	m	m	78	70	84	m	73	71	74	m
	Sweden[4]	True cohort	2002-03	2002-03	53	53	53	47	48	48	48	5	50	49	50	6
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Turkey	Cross-section	2007-08	2009-10	75	72	78	25	88	86	90	m	62	60	66	m
	United Kingdom	Cross-section	2007-08	2007-08	72	m	m	28	79	m	m	m	53	57	51	m
	United States[5]	Longitudinal survey	2003-04	2003-04	53	51	54	47	64	61	67	m	18	18	18	m
	OECD average				68	62	72	32	70	65	74	m	61	53	60	m
	EU21 average				69	61	73	31	69	62	73	m	59	52	60	m
Other G20	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average				m	m	m	m	m	m	m	m	m	m	m	m

Note: The cross-section method refers to the number of graduates from these programmes divided by the number of new entrants into these programmes in the year of entrance. The cross-section method refers to the number of graduates in the calendar year 2011 and is calculated according to the traditional OECD approach, taking into account different durations. True-cohort method is defined from a cohort analysis and based on panel data. Data refers to full-time and part-time when available (please see Table A4.2 for the availability of part-time data).

Figure 17: from Bound et al. 2010. "Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources." American Economic Journal: Applied Economics. 2: 129-157.

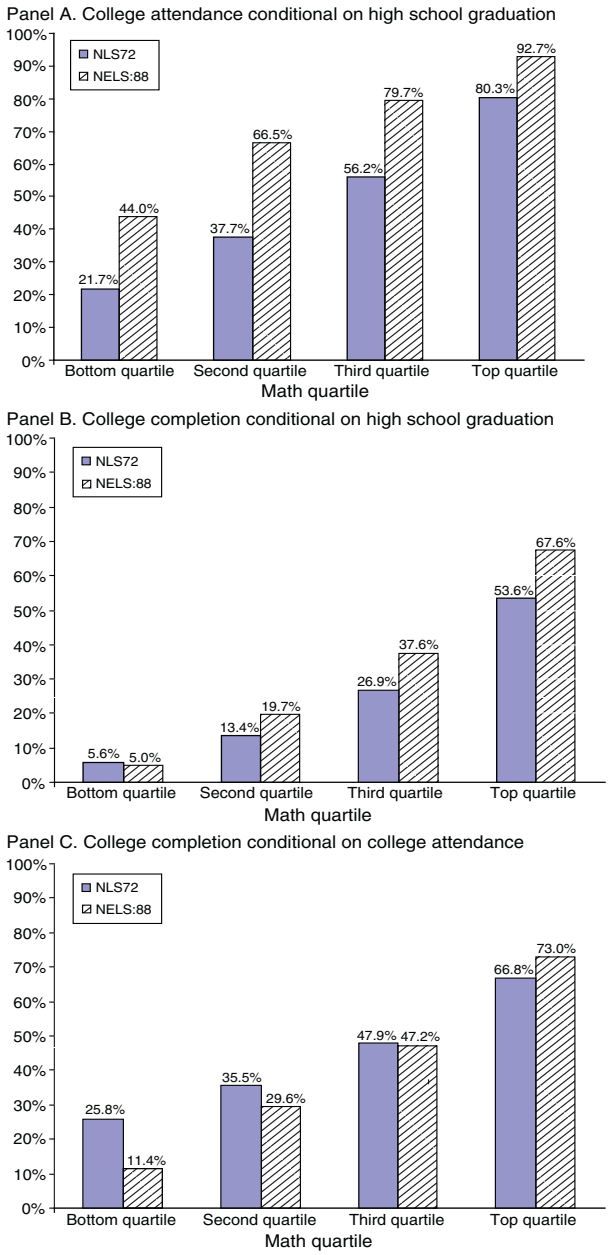


FIGURE 2. COLLEGIATE ATTAINMENT BY PRECOLLEGIATE ACHIEVEMENT

Source: Authors' calculations as described in the text from the NLS72 and NELS:88 surveys. NLS72 calculations were made using the fifth follow-up weights included in the survey. Fourth follow-up weights were used for the NELS:88 survey calculations. Only those participating in these follow-ups are included in the regression.