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Fact or Fiction? The Reversal of the Gender Education Gap across the World and the Former Soviet Union

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In this policy brief, I discuss the reversal of the gender education gap in many countries around the world – a fact that is still not widely known, although is increasingly gaining attention. I describe recent studies that have documented this fact for both developed and developing countries and have provided evidence on the trend. As there has not been much analysis of the education gap in the former Soviet Union countries, I present some measures of the education gap in the USSR and FSU countries, and compare them to other countries around the world. Finally, I discuss the potential causes of the reversal identified in the literature and how the reversal of the gap is related to other gender disparities.

The Fact: Documenting the Reversal of the Gender Education Gap

Although still not widely known, one gender gap that has narrowed – and even reversed – in many countries is the gender gap in education. The reversal of the gender education gap is increasingly gaining attention and has been documented for several countries and using various measures, both at the secondary and tertiary levels. Moreover, now that there is greater awareness about the reversal of the gender education gap, attention is turning to understanding why it has reversed in so many countries and the possible effects.

For example, for the United States, Goldin, Katz and Kuzmienko (2006) use Census data to show that the gender gap in higher education reversed beginning around 1980 (or for cohorts born around 1960), when women's college graduation rates began surpassing men's, and the same is true for other measures at the college level. Pekkarinen (2012), meanwhile, examines the gap in education across many industrialized countries and focuses on the Nordic countries and the US, using cross-country datasets, such as the Barro-Lee data on educational attainment. He shows that in the Nordic countries and the US, men's average years of schooling was higher than women's for cohorts born before the 1950s, and then women began surpassing men. A similar pattern holds for university attainment, except that in the US, men's university attainment started to decrease for cohorts born in the 1950s, while women's attainment increased. However, he finds that in the Nordic countries, both men's and women's university attainment was increasing for cohorts born after the 1950s, but women's attainment was increasing at a faster rate. He also shows that there is a gender gap in drop-out rates in secondary education for the US

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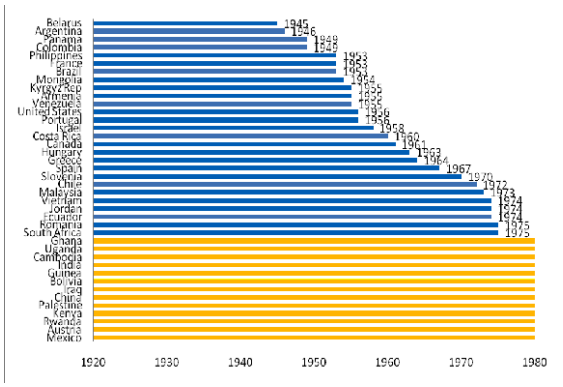
and Nordic countries, with higher drop-out rates for boys than girls.

Much of the evidence on the gender education gap has focused on trends in the US and other developed countries, but there is also evidence of a reversal in the education gap in many developing countries. For example, Duryea, Galiani, Ñopo and Piras (2007) use household data for Latin American and Caribbean countries and show that the education gap, measured as the difference in average years of schooling between men and women, was equal for cohorts born at the end of the 1960s, and reversed for cohorts born thereafter. They decompose the change in the gap and show that most of the change resulted from increases in women's schooling at high levels of education.

Parro (2012) also uses the Barro-Lee data to examine cross-country dynamics in the gender gap in education, measured by the difference in the share of men and women with tertiary education, and the sample includes many developing countries. He specifically looks at the dynamics during 2 periods, 1950-1975 and 1975-2005. After aggregating the data by major world regions, he shows that in every region, a similar pattern holds – the gender gap in education increases before 1975 and decreases after 1975, with women then outnumbering men in tertiary education. He points out that the rise and decline in the gap are more pronounced for developed economies. He also shows that men had stable levels of education during the entire period (1975-2005), while women had greater increases in education after 1975.

In joint work with Ricardo Hausmann and Martina Viarengo, we document the reversal of the gender education gap using Census data for many countries in regions around the world, including many developing countries. In Ganguli, Hausmann and Viarengo (2011) and an earlier contribution to the World Economic Forum's 2009 Global Gender Gap Report (Hausmann, Ganguli and Viarengo, 2009), we use IPUMS Census data to calculate the gender education gap and to document the timing of the reversal. One measure we calculate is the difference in average years of education for men and women for birth cohorts. Figure 1 from Ganguli, Hausmann and Viarengo (2011) shows the year of birth of the first cohort where the education gap was closed in the most recent available wave of the Census for countries in the IPUMS sample. Note that for countries where no year is indicated, the gender gap in education has not reversed. we have the main text. This should be of length 4-6 pages, not too technical and based or related to your research. The policy briefs know their readers, and in our case, most of them are presumably not economists. It is therefore advised to choose your topic with this in mind so that it is not too technical and is of interest to a broader public.

Figure 1. Year of Birth of First Cohort when the Education Gap Closed



Source: From Ganguli, Hausman and Viarengo (2011), using IPUMS Census Data

Out of these 40 countries, the gender gap in education has closed in 27 countries. Several countries, primarily developing countries (11) closed the gap in education before the US, which by this measure closed the gap for the 1956 birth cohort. Interestingly, the country that closed the gap first by this measure is Belarus, a former Soviet Republic, which closed the gap for the cohort born in 1945.

The Gap in the USSR and FSU Countries

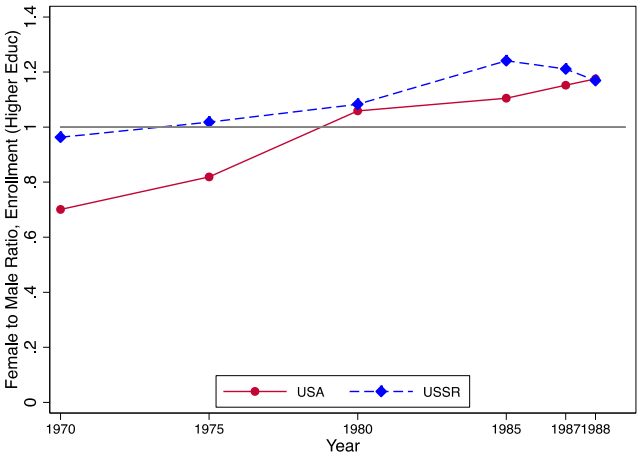
While there have been many studies on gender gaps in the former Soviet countries and Central and Eastern Europe, particularly analyses of wage gaps and gender differences in wage inequality during the transition period, few studies have documented the differences between men's and women's education in region.

The USSR was known for its commitment to higher education and gender equality in the labor market, and had some of the highest female labor force participation rate in the world (see e.g. Brainerd, 2000 for a discussion). In light of these commitments to gender equality, how large was the gender education gap during Soviet times, and how did it change after the transition period? Have the FSU countries also experienced a reversal of the gap?

In Parro's (2012) analysis of the changes in gender education gap across major world regions using the Barro-Lee data, he shows that for 19 countries of Central and Eastern Europe, the pattern was similar to the rest of the world – the education gap was increasing from 1950-1975 (although slightly less so in the region compared to others) and decreasing after 1975. For the Central and Eastern Europe region, the pattern is also similar to other parts of the world in that the decrease in the gap after 1975 was due to a faster increase in women's education after 1975 compared to before, while men's increases in education were similar across the two time periods.

A closer look at the trend at the education gap in the USSR is shown in Figure 2, which shows the trends from 1970 to 1988 in the female to male enrollment ratio in higher education for the USSR and the US. As has been documented in other studies, the US gap reversed around 1980, but it is evident that the gap in the USSR was almost at parity earlier in 1970, and began reversing around 1975. Consistent with other findings like Parro (2012), when looking at men's and women's enrollment separately (not shown here), the data shows that the reversal in both the US and USSR through 1988 was because of women's enrollment increasing after 1975, while men's enrollment was relatively stable or slightly decreasing.

Figure 2. Female to Male Ratio of Higher Education Enrollment, US and USSR, 1970-1988



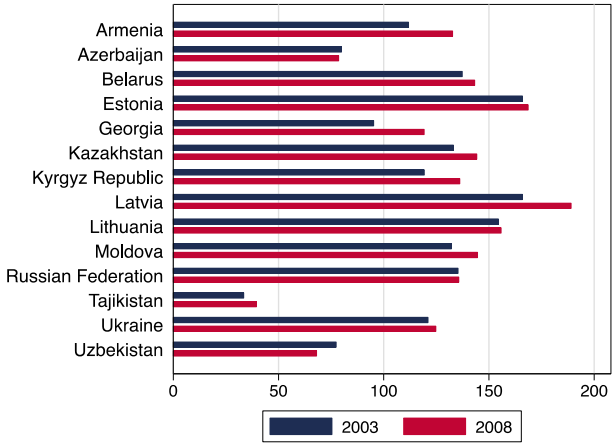
Notes: U.S. Bureau of the Census and State Committee on Statistics of the USSR (1991). For the US, higher education includes universities, colleges, professional schools, junior and teachers colleges. For the USSR, higher education includes students enrolled in institutions of higher education, which is after the secondary level (eleventh class).

Turning to the post-Soviet period, I next provide some measures of the gender education gap for the FSU countries. The World Development Indicators (WDI) data, developed by the World Bank, is one data source that allows easy cross-country comparisons of gender differences in education, including FSU countries. (Note that a Stata-ready user-friendly version is available through the Macro Data 4 Stata website, developed by Catini, Panizza and Saade (2010), along with many other useful data sets.)

Figure 3 shows the ratio of female to male tertiary enrollment for the FSU countries for 2003 and 2008 (data for Turkmenistan is not available). In 2003, 4 out of the 14 countries had not had a reversal of the gap (Azerbaijan,

Georgia, Tajikistan and Uzbekistan). By 2008, the gap had also reversed in Georgia. For most countries, the reversal became more pronounced from 2003-2008, except for Lithuania and Russia, where the gap was stable. In Azerbaijan and Uzbekistan, both countries where the gap didn't reverse, the gap increased from 2003-2008 to favor men even slightly more.

Figure 3. Ratio of Female to Male Tertiary Enrollment (%), 2003 & 2008

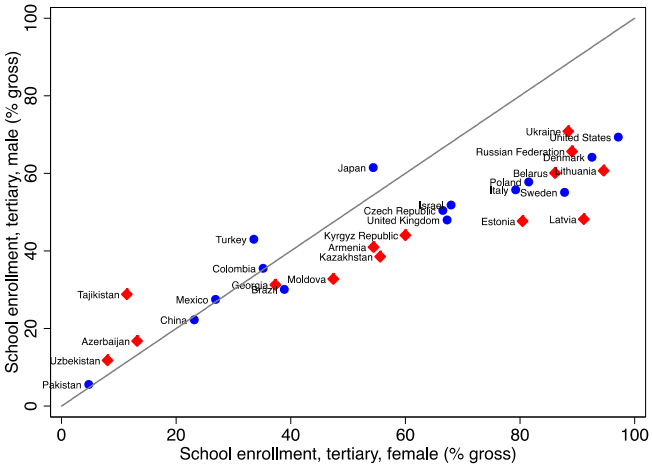


Notes: World Development Indicators (WDI) accessed from Catini, Panizza and Saade (2010). Measure is the ratio of female to male enrollment at the tertiary level in public and private schools (see WDI, World Bank). Data is not available for Turkmenistan.

How do the FSU countries compare to other countries around the world? Figure 4 plots tertiary enrollment for men vs. tertiary enrollment for women for 2008 for the FSU countries and a selection of other countries. If countries are above the 45-degree line, then the gender gap in education has not reversed, and if they are below, the gap has reversed. The farther below the line a country is, the more the gap favors women.

Clearly, the FSU countries span the range in terms of levels of enrollment, and are quite similar to other developed and developing countries in terms of the education gap. There is a cluster of countries with high levels of female tertiary enrollment, where the gap has reversed to a great extent, such as the Baltic countries, along with the US, Denmark, Poland, Sweden and Italy. Russia and Ukraine are also in this group, although they are somewhat closer to the 45-degree line, so the gap favors women slightly less than in the countries farther below the line. In another group of countries, where both men's and women's tertiary enrollment is in the middle range, the gap has reversed, but many of these countries are closer to parity in terms of the gap. Several non-FSU countries in this range have not experienced the reversal or are right at parity (e.g. Turkey and Colombia). At very low levels of tertiary enrollment, the gap still favors men for the FSU countries as noted before, and Pakistan is about at parity.

Figure 4. Tertiary Enrollment for Men vs. Women (% of gross), 2008



Notes: World Development Indicators (WDI) accessed from Catini, Panizza and Saade (2010). The measure is total male (female) enrollment in tertiary education, regardless of age, as a percentage of the total male (female) population of the five-year age group following secondary school leaving (see WDI, World Bank). Data is not available for Turkmenistan.

Why the Education Gap Reversed and the Relationship to Other Gaps

Several factors have been suggested to explain the trends in the gender education gap. Using longitudinal datasets, Goldin, Katz and Kuzmienko (2006) point to 3 main reasons for the observed changes in gender gap at the college level – increases in women's expected returns to higher education and their improved expectations of future labor market

opportunities; an increase in women's age at first marriage; and differences in boys' and girls' non-cognitive skills (more behavioral problems among boys). Becker, Hubbard and Murphy (2010) focus on these differences in men's and women's non-cognitive skills, showing that these differences lead women to have lower costs of attending college and this advantage can explain why women overtook men in college attendance.

Parro (2012), meanwhile, points to differing reasons for the increased demand in education from 1950-1970 (the creation of new high-skill services with higher penalties for mothers' wages) vs. 1970-2005 (the adoption of skill-biased technologies in workplaces more compatible with motherhood) as explaining the trends in the gap. Other work has focused on the marriage market as an explanation for greater investment in schooling by women. Chiappori, Iyigun and Weiss (2009) show how schooling decisions might be affected by future marriage decisions, and show that differences in labor market returns and marriage-market returns can explain the case where women might invest more in schooling than men.

The experience of the FSU countries could help shed light on the causes and consequences of the reversal of the gap, given the changes that men and women underwent regarding the returns to education and expectations about the labor market after the end of the USSR and during the transition period. Moreover, while the Soviet Union was known for high levels of female labor force participation and education (and as we saw a relatively early reversal of the gap), there was significant occupational segregation. One area for further research is exploring how changes in the gender education gap have been related to the distribution of men and women across occupations and fields of study.

In Ganguli, Hausmann and Viarengo (2011), we examine whether the narrowing/reversal of the education gap has been followed by decreases in other labor market disparities facing women – women's labor force participation relative to men, employment among married and single women, and among mothers and non-mothers. The benefit of using the IPUMS Census data is that we can calculate these other gaps based on characteristics of women that are not possible in aggregate country-level data.

We find that despite the improvements in the education gap, there are still significant gaps facing women in the labor market. We also find that there is a great deal of heterogeneity among the countries in our sample in terms of the size and the speed at which these gaps are changing. Overall, the findings suggest that further study is needed to understand what explains the divergent paths countries have taken, and particular attention should be paid to differences across countries in policies and conditions that make work more compatible with marriage and motherhood. In general, while the reversal of the gender education gap in so many countries implies that women are "doing better" than men by this measure, significant gender disparities still exist in most countries, including disparities in earnings and representation in top-level jobs, and warrant further research and attention from policymakers.

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