Past Trends and Gender Differences of Higher Education in the Former Soviet Union and Eastern Europe

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In this study the past trends in tertiary education of selected Eastern countries, including many from the former Soviet Union, are investigated through population projections. In order to overcome data depletion and the difficulty of comparing dissimilar data, the approach is based on comprehensive back-projection population studies ranging from year 2000 to 1970. National proportions of population with tertiary education are obtained and differentiated by gender and age. Results show a historical trend of fluctuating higher education levels. However, investigation by gender and age groups gives a more detailed view. The level of education, and its change in the past has interesting gender developments. In most of the Eastern countries, the level of

tertiary education attainment of women has surpassed that of men. Countries are grouped according to similar trends along gender lines in past education attainment. However, Estonia shows a distinctively different pattern compared with the other countries. We discuss the results in light of the former communist era and consequent policy, and derive possible implications for the future of higher education in these countries.

Keywords: back-projection, demography, education policy, former Soviet Union, human capital, multi-state population projection, tertiary education

INTRODUCTION

Trusted officials in education statistics such as the UNESCO and OECD have attested to the steady increase in higher education levels. According to an OECD outlook on education (OECD 2008) countries have increased their share of the highly educated to an average of 33% in the age group 25-34-year-olds. The OECD report further stipulates that the trend of increasing tertiary attainment will continue. However, there are enormous differences between countries, in terms of policy of providing and facilitating tertiary education. The question remains, does the increase in education levels benefit all? This study sheds light on a group of countries that used to be united in terms of education policy, namely the Former Soviet Union and Eastern European countries. What were the implications on higher education attainment levels and gender equity of the policy of a centralized education system?

On the national policy level, a key issue of any education system is to provide for the level and diversity of skills required by the labor market. In some cases, high (tertiary) education levels are the result of heavy, national pro-education policy. The question that arises is, whether or not there is a match between the educational

attainment and jobs available. During the Soviet era, the motivation for educating the population were geared towards the party needs for workers in industry and farming, thus securing high proportions of secondary education attainment and vocational training. This was done in some countries at the expense of existing higher education institutions.

A special case in the group of Soviet and Eastern European countries seems to be Estonia, due to its high level of acquired tertiary education in the young population, and women especially. The shifted educational gender balance in Estonia has happened way faster than in any other Eastern country, and is interesting in the light of having had the exact same education policy prior to the fall of the Soviet regime. Looking at the past 30-year trend in higher education attainment, it is concluded that the Soviet model enhanced gender equality in higher education even faster than in other European countries, given national differences in institutional infrastructure and overall education levels.

The concept of back-projections has been applied before. Examples include the so-called inverse projections carried out by Lee (1978) as well as the back-projections by Wrigley and Schofield (1982). The method has been applied to e.g. estimations of HIV and heroin use incidences based on later availability of AIDS statistics, and opiate-related deaths and methadone treatment respectively (Law et al. 2001). Back-projections are a powerful tool to overcome problems such as scattered, unreliable or even non-existing data sources.

HIGHER EDUCATION IN THE SOVIET ERA

In order to comprehend the fundamental differences between the Western market economies and the Soviet societies where a single political party had a monopoly in

decision making, basic functioning mechanisms of communist-led countries must be considered. Titma and Saar (1995) distinguish three such prevalent features. Firstly, the complete disregard of an individual as a subject on its own, instead, society as a whole was a central unit in the Soviet Union which all the members had to serve for a collective goal. Another component of the Soviet framework was the complete identification of the Soviet state with the society with the purpose to exercise complete power over various domains of social life and direct the civil society in certain directions. A third element was the full distribution of power to the ministries of specific fields; this domination of party-state institutions was the very reason why Soviet societies were totalitarian.

In line with the first feature, the authorities considered education a collective good just as any other in the Soviet system, therefore education was not a private matter but only to be used for the benefit of the society. By means of central planning and the rejection of private ownership, the apparatus aimed at creating ideal conditions for complete social equality (Kotasek 1993), along with the main target of the Soviet system – uniformity in all domains of life and in all countries in the Soviet Union. Since opting for equality, several issues were heavily denied, such as gender differences in education. As Silova and Magno (2004: 418) put it, the 'women question' was 'solved on the basis of econometrics rather than social, cultural, and political measures'.

Education was exploited as a very powerful tool for achieving the overarching totality and uniformity. Hence, school structures, curricula, textbooks and teaching methods were standardised throughout the Soviet Union. Teachers were given the responsibility to bring up the youth in the spirit of Marxist-Leninist ideology so that

they would become a proper ‘socialist men’, without any deviation whatsoever (Szebenyi, 1992). The new Soviet-related subjects such as history, constitution and geography of the USSR took a large share in the curricula. Russian language lessons were incorporated as well, at the cost of other foreign languages. The emphasis was strongly focused on factual knowledge; neither comprehension of the study material nor synthesis of analysis was encouraged in order to restrain students from thinking ‘on their own’ but only in terms of the socialist discourse.

After having created a constant shortage of labour, that of low-skilled manual workers in particular (Titma et al. 2003), the authorities had a justified reason to introduce vocational training in curricula, which gained even more prominence when vocational school at secondary education level was introduced. The compulsory eight-year school at the incomplete secondary education level was to be continued in three different tracks, a system that eventually lead to enormous differences in terms of tertiary education and life chances (Titma and Saar 1995). Only the best students were allowed into general secondary schools, which were more or less the only channels to universities. The second type of schools, so-called specialised secondary schools, gave students semi-professions such as teachers, nurses, or engineers. Thirdly, an increasing focus was on vocational schools in order to supply the industrial and agricultural sectors. Students coming from vocational schools had very poor chances of proceeding to a higher education institution. Thus, by means of centralised education policy, the Soviet elite was able to condition the process of social reproduction.

The university system was significantly redesigned in the communist era. Research and teaching were commonly divided into different institutions in such a manner that

research was conducted at state research institutes. Courses in dialectical materialism and the history of the Communist Party were incorporated in every study programme, as well as Russian language. The apparatus strived for control over the composition of students in tertiary education, doing so by means of promoting students from working class or peasant families as well as enforcing social control (Simkus and Andorka 1982). Quotas were set for the admission of a minimum proportion of students of proletarian background, whereas students from 'wrong' families – such as intelligentsia, bourgeois, political affiliation other than communist – were impeded from the entry to tertiary education by merits, deportations to rural areas. Additionally, when applying for a university, students were required to present a recommendation letter from a Party member or a trade union. A direct admission was ensured for people already in a leading position in the Party as well as students who had some years of working experience. Since the 1960s admission to higher education institutions was thus limited, to some extent, in order to channel the high school graduates to less popular jobs in the reconstruction and agricultural sectors.

This study comprises the former Soviet republics Armenia, Estonia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Russia, Turkmenistan, Ukraine and Uzbekistan, as well as the formerly communist states Bulgaria, Croatia, Czech Republic, Hungary, FYR Macedonia, Poland, Romania, Slovakia and Slovenia. In many of these countries, low salaries, even payment arrears of teaching personnel and the academia are nowadays common, and may have provided fertile ground for bribery and corruption in higher education (Temple and Petrov 2004). Equally alarming are the still wide spread low state contributions to education and facilities, and the consequent heavy increase in privatization of the education sector, as well as increasing use of tuition as means of sustenance for the institutions of education.

METHOD

The method is based on demographic multi-state population projections, developed at the International Institute for Applied Systems Analysis (IIASA) during the 1970s and is now a well-accepted method among technical demographers. The aim of the projection is to obtain a comprehensive dataset that can be further applied to questions pertaining to subjects of little documentation or reliable data.

The baseline year providing the empirical starting point is 2000. Year 2000 was chosen as the base year, since the data for 2005 were not available for a vast majority of countries. The population is distributed by five-year age groups, from the age of 15 to 100+ by sex, and by four levels of educational attainment. With reference to the ISCED classification of education levels by UNESCO they are: no education, primary (ISCED 1), secondary (ISCED 2-4) and tertiary education (ISCED 5-6). The basic idea of the projection is straightforward: Assuming that the educational attainment of a person remains invariant after a certain age, e.g. the proportion of women without any formal education aged 50-54 in 1995 can be derived directly from the proportion of women without any formal education aged 55-59 in 2000. Continuing to assume that this proportion is constant along cohort lines, the proportion of women without education aged 25-29 in 1970 for the same cohort follows directly. In a similar manner, the proportions for each educational category and each age group of men and women can simply be moved to the previous five-year age group as one moves back in time in five-year steps. Unlike previous models, the model developed by KC and co-workers takes into account the education specific mortality and migration rates and introduces adjustments for these differentials. A more detailed description about the model has been documented earlier, see Lutz et al. 2007.

Population projections inherently contain uncertainty. They should always be interpreted with caution. All projections, even back-projections are possible scenarios and should be treated as such. However, it can be noted that demographic changes are sluggish in being transferred to educational attainment. This means that it takes many decades for a dramatic change in the educational level of young cohorts to significantly affect the educational level of the whole population. Population back-projections can thus be relevant in many ways, and indicate very close to the real past depending on e.g. migration events.

RESULTS AND DISCUSSION

A few countries in this study have had stable proportions of tertiary attainment for a long time. However, looking at tertiary attainment levels by sex, a more detailed picture is revealed. In nearly all the countries with increased tertiary attainment, the increase is due to female attainment levels going up. In some countries, the male attainment levels have in fact decreased.

The historic trend shows that at first men have higher proportions of tertiary attainment than women. Then women start catching up and later do not wait for men to catch up. Women surpass men in proportion and keep on increasing their tertiary education attainment levels.

Dividing the data on educational attainment by gender, we can group the countries based on differing trends. Groups 1+2 make up all the countries in this study. Notice the difference in scales (y-axis). The third group is selective, based on one specific trend of education attainment, namely that of non-decreasing level of tertiary attainment.

Looking at the attached figures, one can conclude that depending on which gender development in tertiary education attainment is followed, the majority of countries fall under different groups. According to the female tertiary attainment levels, nearly all countries in this study have an increasing percentage of tertiary attainment from 1980 to 1990 as well as for the period 1990 to 2000. The same, increasing trend for tertiary education attainment is not visible for the male counterparts. The finding is not explained by a previously higher level of male tertiary attainment, since even in the beginning of the study period, there was no great male advantage in tertiary attainment levels.

All Group 1 countries have a decreasing tertiary attainment level going from 1980 to 1990. The group of countries is far greater for *male* tertiary attainment. Group 2 countries have a level or increasing percentage of tertiary attainment from 1980 to 1990. This group is far bigger for *female* tertiary attainment. Group 3 countries experience an increase or leveling of tertiary attainment from 1990 to 2000. Figure 6 is added so as to attest to the clear increase in female tertiary attainment levels in the last 10 years of the back-projection for 17 of the 19 countries considered in this study.

Figure 7 shows in a combined graph of 4 figures the development over the decades of the 19 countries with respect to the male vs. female tertiary education attainment. It shows the one country steadily becoming dominatingly female-driven in terms of its tertiary education attainment levels, and that country is Estonia. Most of the 19 countries depict the trend of steadily increasing female tertiary attainment levels.

In figure 8 it is studied whether the current EU members were distinguishable in their female-male tertiary education levels in 2000, and the answer is negative. Only two countries stand out as not having followed the general higher education trends, and

those are Turkmenistan and Uzbekistan. Reasons for the findings are further explored in the to-be-published research paper.

Figures

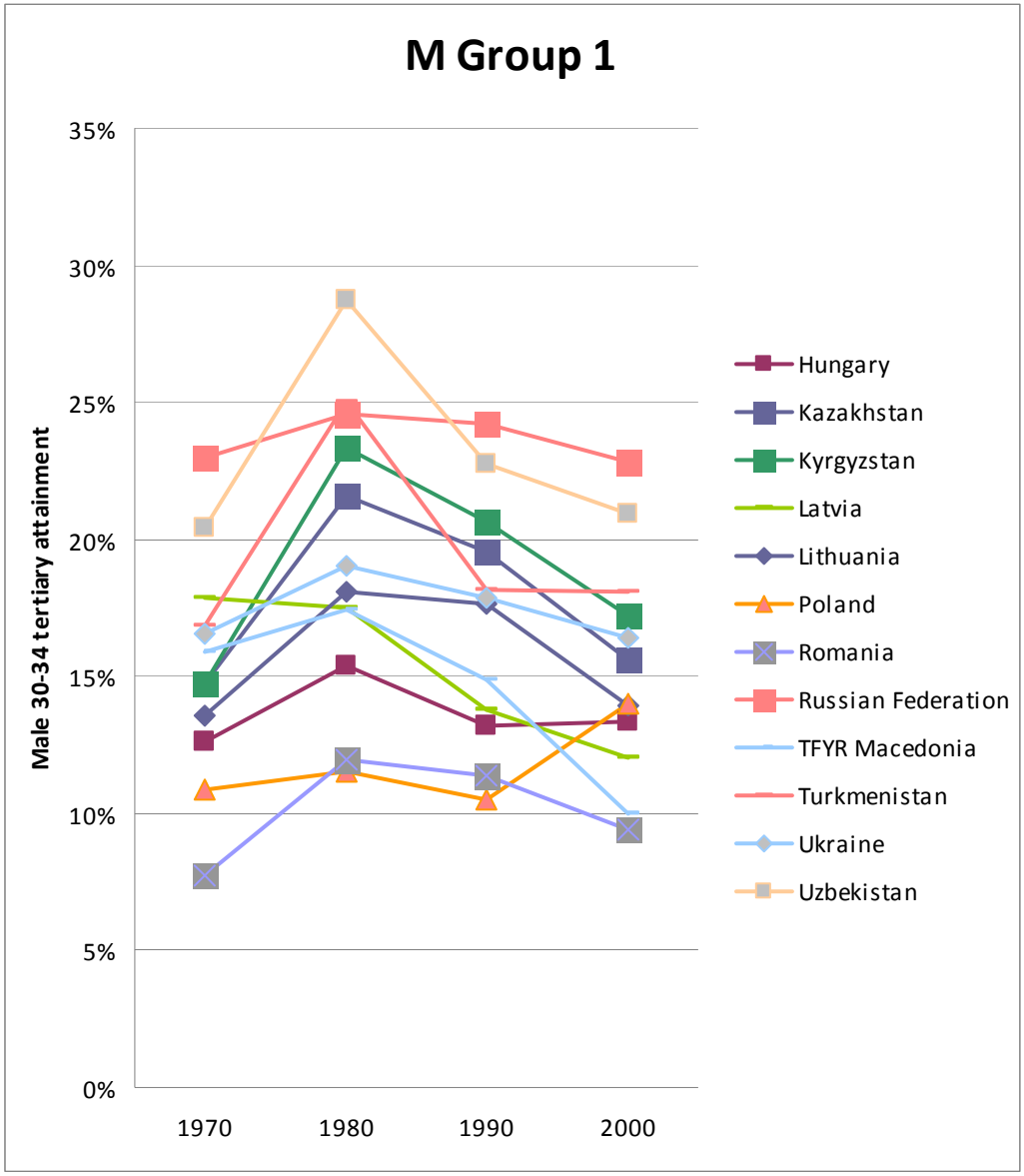

Figure 1. Group 1 males 30-34 years old.

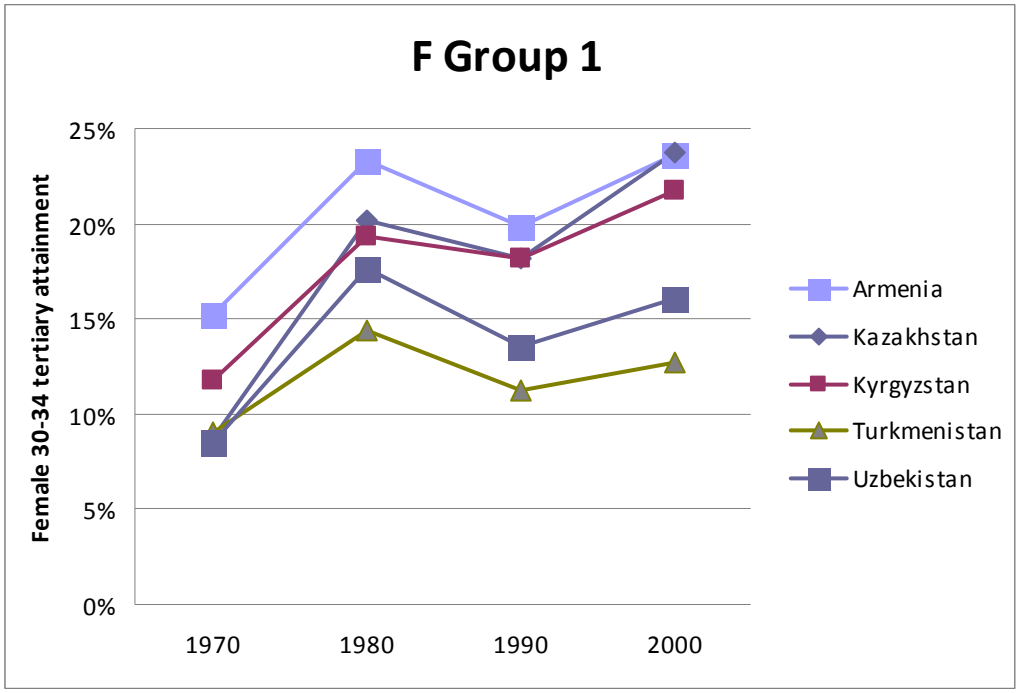

Figure 2. Group 1 females 30-34 years old.

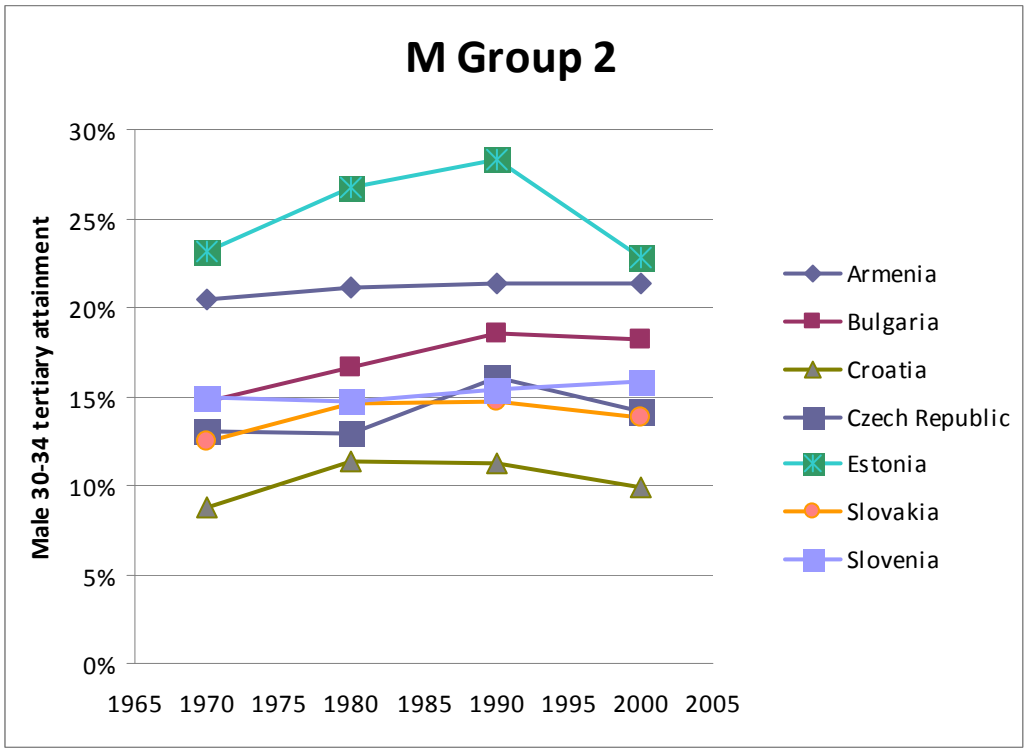

Figure 3. Group 2 males 30-34 years old.

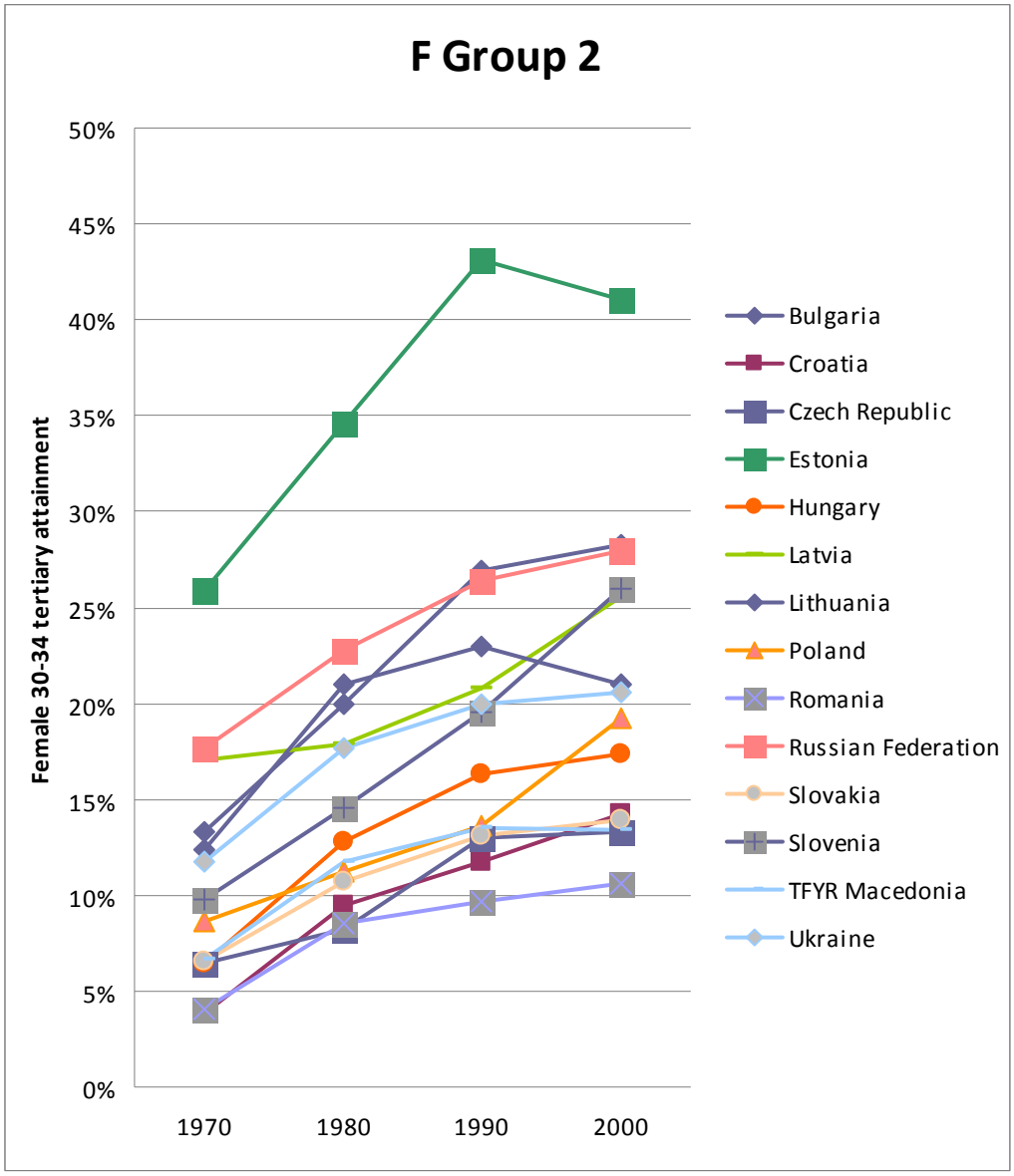

Figure 4. Group 2 females 30-34 years old.

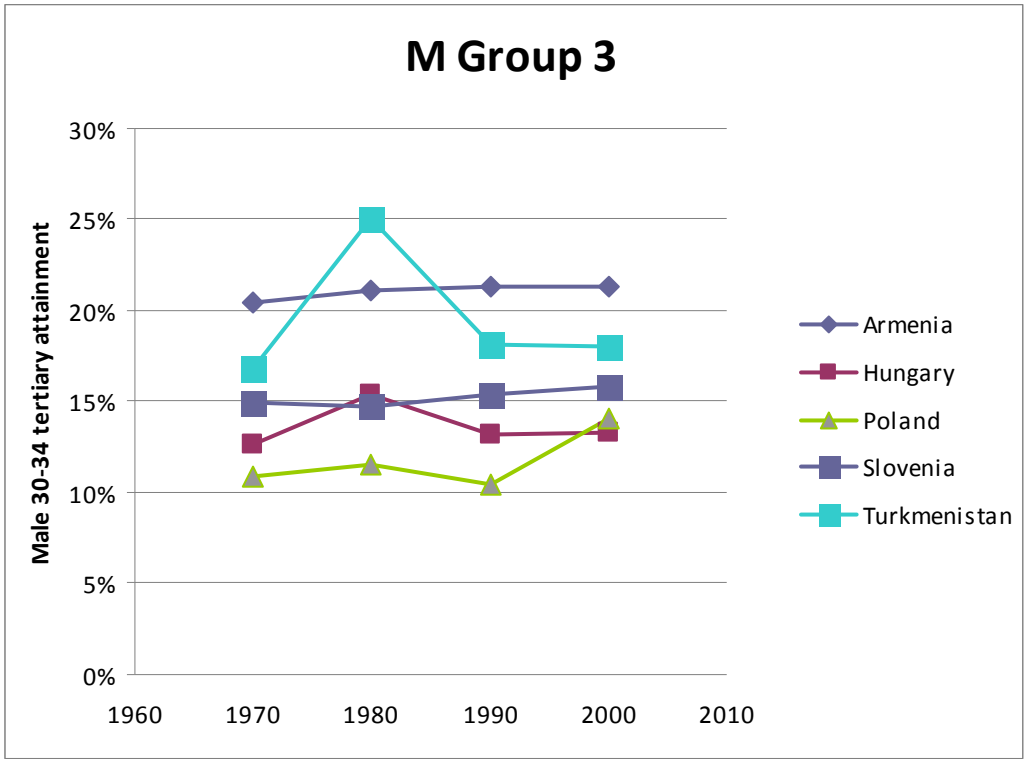

Figure 5. Group 3 males 30-34 years old.

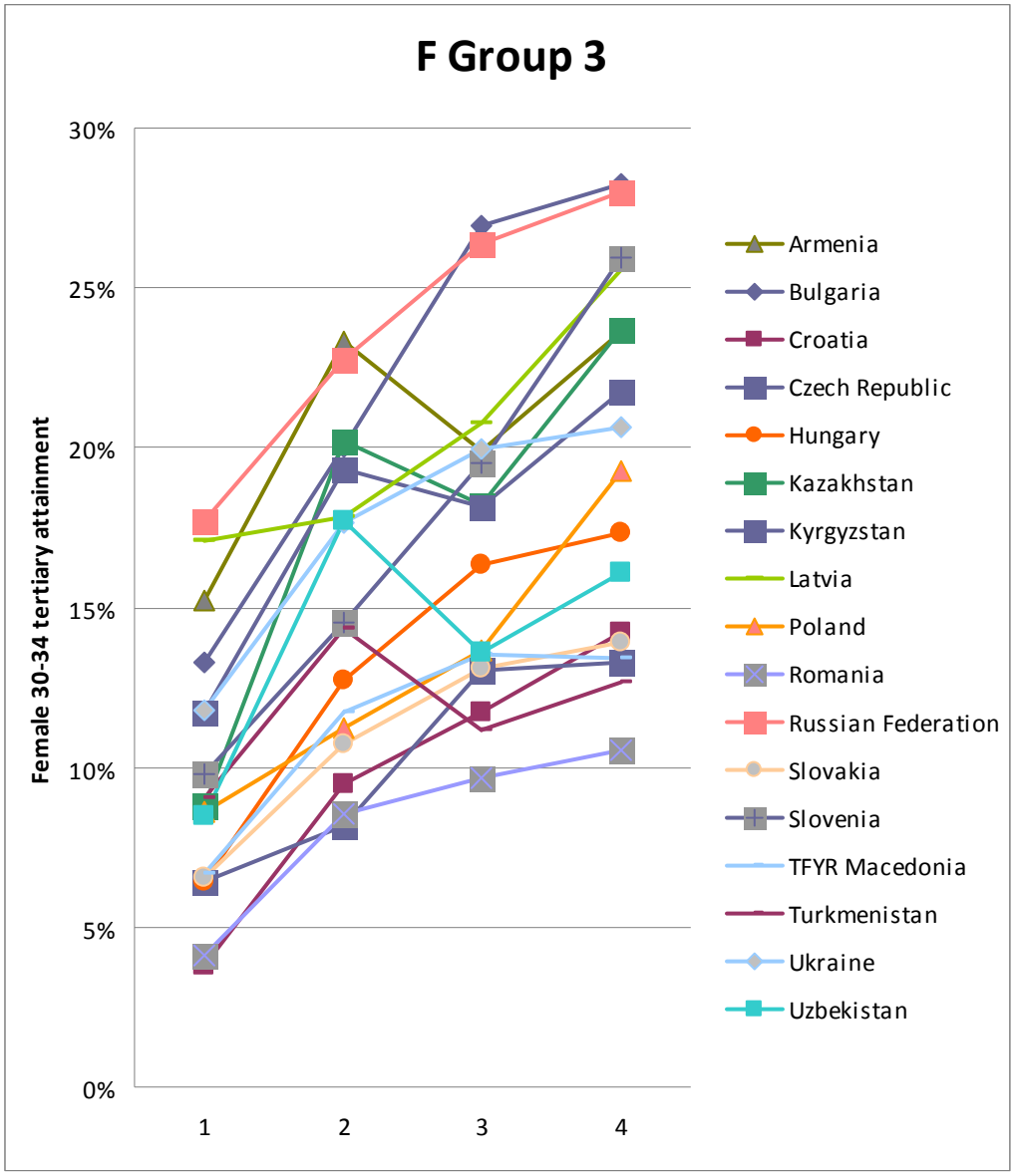

Figure 5. Group 3 females 30-34 years old.

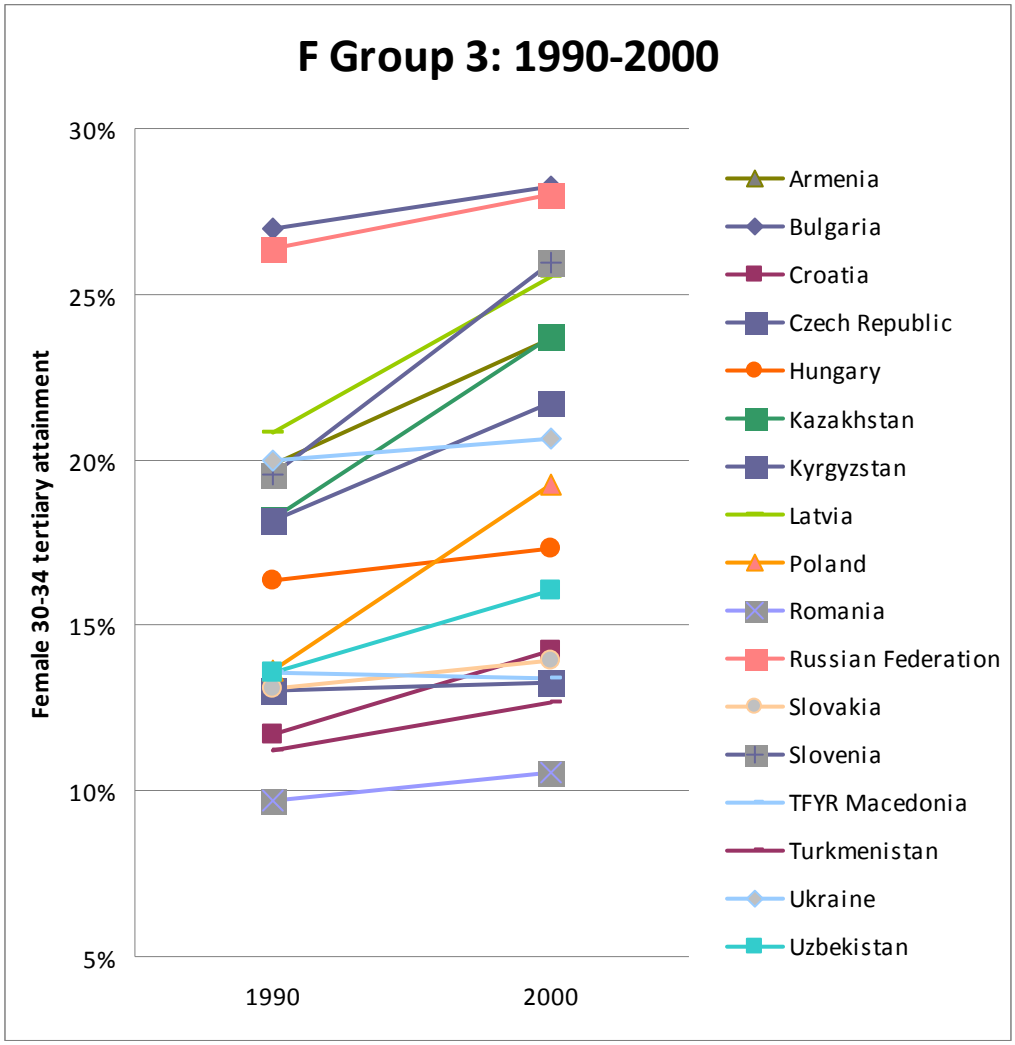

Figure 6. Group 3 females 30-34 years old for 1990-2000.

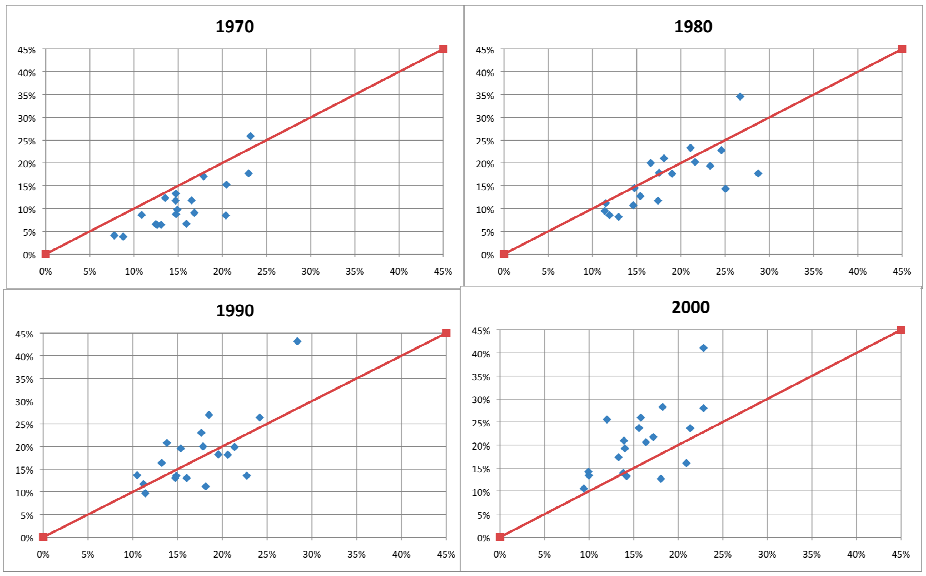

Figure 7. Plot of progress in tertiary education attainment of 30-34-year-olds by sex: Women y-axis vs. men x-axis in 19 Eastern countries. Points at pink line represent a 50-50 tertiary attainment btw men and women.

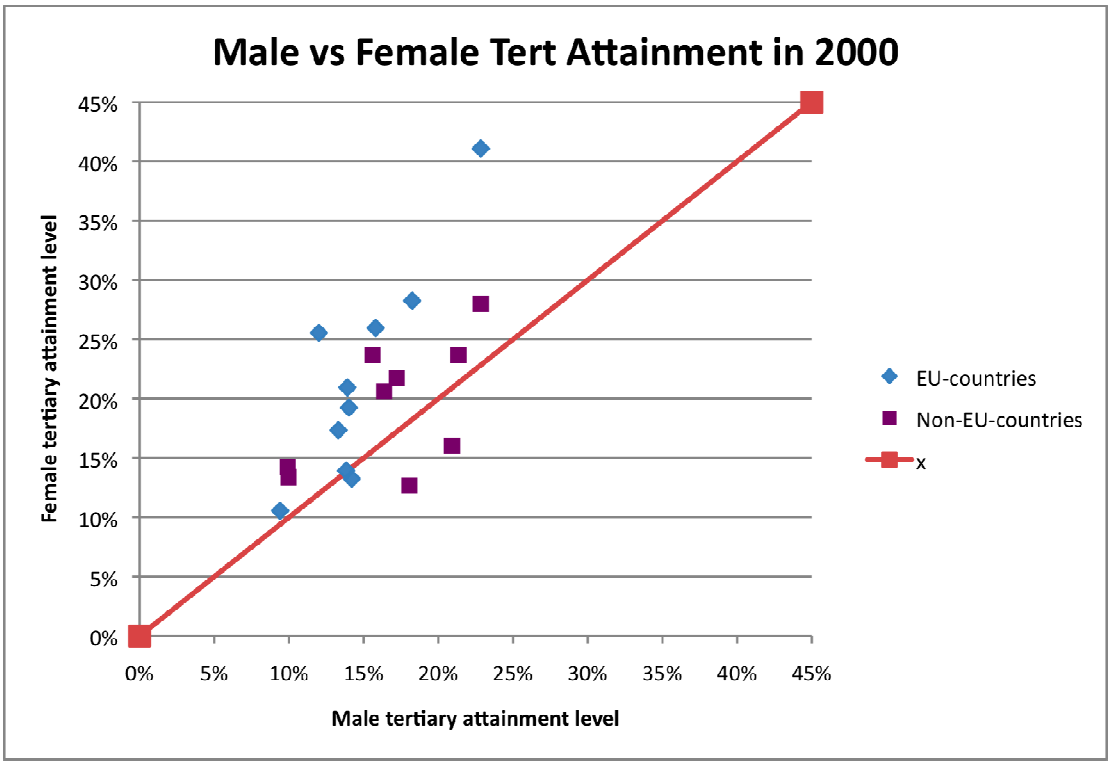

Figure 8. Year 2000 separate for current EU and non-EU countries. Pink line represents the 50-50 tertiary attainment level.

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