Journal of Eurasian Studies 4 (2013) 123–135

Contents lists available at SciVerse ScienceDirect

Journal of Eurasian Studies

journal homepage: www.elsevier.com/locate/euras

The spread of human capital in the former Soviet Union area in a comparative perspective: Exploring a new dataset☆

Dmitry Didenko [a,*], Péter Földvári [b], Bas Van Leeuwen [b]

[a] State Corporation 'Bank for Development and Foreign Economic Affairs (Vnesheconombank)', 9, Academik Sakharov Ave., Moscow 107996, Russia
[b] Utrecht University, Drift 4-6, 3512 BS Utrecht, The Netherlands

ARTICLE INFO

Article history:
Received 17 January 2013
Accepted 12 March 2013

Keywords:
Human capital
Education
Economic development
Socialism
USSR
Russia

ABSTRACT

To date, the rise and fall of the (former) USSR has triggered a lot of research much of which has focussed on the accumulation of physical capital, growth, and consumption. Recently, also the accumulation of human capital has increasingly been incorporated in this picture. However, few datasets exist that cover this crucial variable for this vast area. Therefore, our main objective is to make available a new dataset that contains human capital related time-series for the USSR (and the Newly Independent States (NIS) after its dissolution), constructed mostly on an annual basis. These data are drawn together from various primary sources, available datasets and secondary literature where our focus was on constructing a dataset as consistent as possible. It is our hope that, by supplying these data in electronic format, it will significantly advance quantitative economic history research on Russia and all over the former Soviet Union area (FSU) and will inspire further research in various new fields relating to intellectual production.

The data presented in this paper follow after the discussion of the information value of the primary sources utilised, and the various problems that arose when linking and splicing the data from various sources. After constructing series of human capital indicators we perform a time-series and spatial analysis in order to identify the long-term trends of education penetration and of the human capital development in the FSU area with a strong emphasis on inequality issues between the NIS. Applying these results in a simple growth accounting framework provides us with some preliminary insights on the role of human capital in economic development in the FSU area.

1. Introduction

It is undisputed that human capital plays an important role in economic growth and human development. It is seen as indicative of long run growth, reduction in corruption, participation in decision making, etc (e.g. Alesina & Perotti, 1996; Lucas, 1988; Perotti, 1996; Romer, 1990). However, especially for the former socialist countries, very little information on this variable is available. Recently, some papers on long run development of human capital and growth have appeared dealing with China and Eastern Europe (e.g. Földvári & Van Leeuwen, 2005, 2009; Van

☆The findings, interpretations, and conclusions are the authors' own views which may not be shared by the institutions of their affiliation.

* Corresponding author.
E-mail addresses: Didenko_D_V@veb.ru, ddidenko@bloomberg.net (D. Didenko), peter.foldvari@econ.unideb.hu (P. Földvári), bas.vanleeuwen1@googlemail.com (B. Van Leeuwen).

Peer-review under responsibility of Asia-Pacific Research Center, Hanyang University

Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.euras.2013.03.002

Leeuwen & Földvári, 2011a, 2011b; Van Leeuwen, Van Leeuwen-Li, & Foldvari, 2011), but research on how it affects economic development in these countries is still in its infancy.

This is especially true for the former Soviet Union area (FSU)[1] where the standard datasets do hardly ever include human capital. For example, the dataset 'Soviet Economic Statistical Series' constructed by the Slavic Research Center at Hokkaido University, is primarily focussed on external trade while Easterly and Fischer (2001) do not include human capital as a monetary measure. Even the big international datasets from Cohen and Soto (2007) and Morrisson and Murtin (2009) do not include estimates for the USSR (although Morrisson and Murtin in their paper do make some guesstimates).

Therefore, in Section 2 we construct a new and consistent dataset on human capital and related measures for the USSR and the Newly Independent States after its dissolution. We have constructed the data series of various human capital indicators (both in natural- and monetary units), basically on an annual basis stretching back in most cases to 1920s, and in some instances even to the 19th century Russian Empire. To this dataset we add population (which is a crucial variable in many human capital estimates) in age-cohort breakdown, as well as comparable macroeconomic indicators like GDP, fixed (physical) capital stock, size of the general government expenditures, and the total wage bill. These data are drawn from various primary and secondary sources (including available datasets and literature) where our focus lay in constructing a dataset as clear, transparent, and consistent as possible. Section 3 discusses the construction of the human capital indicators as well as their spread throughout the FSU area, while Section 4 deals with economic development and spatial growth of human capital in the FSU comparing it with China. We end with a brief conclusion.

2. Primary and secondary sources, description, and data discussion

2.1. General description of the sources

The starting point in constructing the dataset consisted of the official statistics, available datasets and the research literature based on them (Table 1).

The official statistical data are easiest to reach. Indeed, as pointed out in Davis and Wheatcroft (1994) as well as in other literature starting at least from Gerschenkron (1947), the Soviet official series contain the information that at least was not intentionally falsified in a straightforward way as the government statistical offices preferred either to not to publish the unpleasant data or to adjust the methodology to let the resulting figures look better.

The basic official publication used for this study is the statistical yearbook "The national economy of the USSR". In addition, the USSR statistical office also published topical volumes like "Labour", "Construction of culture", "Culture, education and science", "Women and children", since end 1950s normally once per decade. We used some official volumes (e.g. "Labour in the USSR" of 1975 and 1983 editions) which were not available to the scholars at the time of their publication but have been disclosed after the Soviet Union collapsed.

Besides these publications, the government financial office (Ministry of Finance since 1946) published the national budget execution reports on a 5-yearly basis since 1962 (providing annual historical data for the latest 5-year period and back to 1940 with 10- and 5-year intervals). Such publications had not been regular before. In the late 1980s they launched such reporting on an annual basis. The financial office also published topical volumes on educational-, cultural services-, and research expenditures twice (in 1939 and 1958).

2.2. Population size, literacy and numeracy

The population data were obtained from the published census data. There were 9 comparable censuses in the FSU: 1897, 1920, 1926, 1937, 1939, 1959, 1970, 1979 and 1989. We have assured that the data from HSE IDEM (2011) comply with those from the published census volumes with some minor exceptions. The discrepancies within the data for 1897, 1926, 1937 (most of all) and 1939 censuses are, however, not considered to be significant.

In all the FSU censuses, literacy was defined as an ability to read at least one language. Hence, writing skills were not taken into account at all. In our opinion, conventional measurement based on direct questions left much room for reading proficiency criteria also to be eased, especially since literacy was a politically sensitive topic.

Innumeracy (age heaping) is measured as the excess of people reporting their ages ending on multiples of −5 and −0 (i.e. 25, 30, 35 etc). This measure is then converted into the ABCC index, proposed by A'Hearn, Baten, and Crayen (2009), which captures the percentage of persons correctly reporting their ages. Availability of the census data on 1-year age cohorts for male and female population at age 23–62 allows calculating their levels of numeracy, which is probably less upward-biased than literacy.

2.3. Educational attainment and enrolment

Our third educational variable (besides age heaping and literacy) concerns educational attainment. We express educational attainment and enrolment for the male, female and total population separately in 6 ISCED levels to which the national systems of the Russian Empire (less), the Soviet Union and the NIS after its dissolution (more) generally fit.

[1] 'The former Soviet Union' (the FSU or ex-USSR) is the mostly common term used hereinafter for all time periods and for all territorial coverage of both the Russian Empire, Soviet states after its fall, the USSR and the Newly Independent States after its collapse. The terms 'USSR' or 'Soviet Union' are used for the period of 1922–1991 only when this state existed within its actual borders. The term 'Newly Independent States' refers to multiple of existing states on the territory of the former USSR, both to the period after its dissolution and to the period when they were the Soviet republics, basically within their current borders. 'Russia' refers to the territory basically within the borders of the contemporary Russian Federation, in various periods.