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The Oil Boom and Human Capital Development in Azerbaijan: “Turning Black Gold into Human Gold”

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Abstract

This article addresses the link between state fiscal resources and human capital development in Azerbaijan during the peak period of oil prices. The economic growth figures offer quite an optimistic picture. However, a more thorough look at the social and economic data indicates that Azerbaijan's state investment in education and healthcare was relatively low compared to other countries in the Commonwealth of Independent States (CIS) region. Despite the possibilities presented by the expanding fiscal space and increasing capital inflows, the government of Azerbaijan did not manage to effectively increase public sector expenditures on human capital development and has not utilized the available funds to reach higher levels of overall human development.

Introduction

Over the last decade, human capital development (HCD) has held the attention of political actors in Azerbaijan, at least on a rhetorical level, in both public media and speeches by government officials. The government has set a priority to transform “black gold into human gold”. Under this tag line, Azerbaijan has adopted numerous conceptual papers and decrees, including the “Azerbaijan 2020” vision in 2012, the “National Strategy for the Development of Education” and the action plan for its implementation in 2013. Both documents formulated the state's policy toward achieving higher levels of human capital development and aimed to escape the so-called ‘resource curse’ by advancing the quality of the educational system and strengthening the competitiveness of knowledge-based industries in Azerbaijan. In addition, the government declared the goal of increasing public spending on social sectors to facilitate human capital development.

Although the establishment of the policy framework intended to enhance human capital development in Azerbaijan is a positive step, there is an obvious lack of evaluation and monitoring of the implementation of these policies in practice. Thus, the efficiency and real impact of these policies remain unclear.

Transforming Oil into Human Capital

In natural resource-exporting countries, human capital development (defined as the stock of knowledge, skills and capabilities of a country's workforce) should be set as a primary goal to break the vicious circle of the resource curse, diversify the economy and ensure sustainable

growth. To achieve these results, the World Bank prescribes three policies: 1) ensure efficient resource extraction to increase generated resource rent, 2) establish a tax system that allows government to recover rents and 3) design a well-defined policy framework for the investment of rents into productive assets.¹ The investment of these revenues in productive assets is closely related to the Hartwick rule, according to which the rents from natural resources should be invested in productive assets for future returns rather than consumed immediately. Productive assets consist of tangible (such as infrastructure and machinery) and intangible (human, social and institutional) types of capital.

Education and health expenditures are among the most crucial areas for raising the level of human capital. A study found that an increase in public spending on education of 1 percent of the GDP is associated with 3 more years of schooling on average and boosts economic growth by 1.4%.² Correspondingly, an increase in health expenditures by 1% of the GDP improves the under-5 child mortality rate by 0.6 and increases the annual per capita GDP growth by 0.5 %.

Investing in Human Capital: Promises and Realities

In the period 2005–2014, Azerbaijan enjoyed an influx of revenue from oil exports, which improved GDP performance and opened fiscal space for increased public spending. During the period of 2001–2009, GDP growth was on average 16% per year, and Azerbaijan had the highest annual GDP growth rate worldwide at 34.5% in 2006 and 25% in 2007 (World Bank). Per

1 World Bank. *The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium*. Washington, D.C.: World Bank, 2010.

2 Emanuele Baldacci et al., “Social Spending, Human Capital, and Growth in Developing Countries,” *World Development* 36, no. 8 (2008): 1317–1341

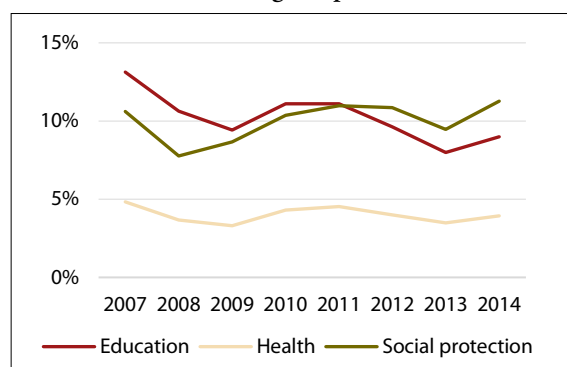
capita GNI doubled from \$8,570 in 2006 to \$16,920 in 2014. Due to this massive budget surplus, Azerbaijan had sufficient resources to invest, as it did in tangible capital such as construction and infrastructure.

Public investment was a major engine of non-oil GDP performance during the oil boom. The major sectors of the non-oil economy predominantly depended on funds from the state budget itself funded through transfers from the State Oil Fund of Azerbaijan (SOFAZ). The transfers from SOFAZ to the state budget increased rapidly, from only 10% of the overall budget in 2007 to as much as 61% of the national budget in 2012.³ This expansion of state budget revenue created a favorable fiscal space for expanding government social policies set out as a priority area in the strategic planning of the government during the early years of the oil boom. These social policies were targeted at three sectors: healthcare, education and social protection. The social protection system in Azerbaijan includes social insurance, which covers contributory benefits related to unemployment and social assistance and provides social benefits for vulnerable and low-income groups. As shown in Figure 1 (opposite), public expenditures on education and healthcare actually decreased in proportion to the overall expenditure budget from 2007 to 2014. Public spending on education showed a decrease from 13% of the total budget in 2007 to 9% in 2014. Public spending on healthcare remained fairly stagnant, standing at 5% of the total budget in 2007 and falling to 4% in 2014. Expenditures on social protection remained at approximately 11% of the total budget. In contrast, a substantial portion of the state budget was invested in infrastructure and construction, on average 35% of the overall budget from 2007–2014. The lion's share of these expenditures was devoted to the hosting and organization of international events, such as the Eurovision song contest in 2012 and the European Games in 2015.

Public spending on social sectors is typically measured as a fraction of GDP to account for the level of social spending relative to the size of a country's economy. In addition, this measure is commonly applied to facilitate comparisons of public spending patterns across countries and regions with different economic output and shows the relative priority given by the government to various sectors.

Figure 2 (opposite) displays public healthcare expenditures as a percentage share of the GDP and shows that healthcare spending stood at just 1% of the GDP from 2007–2014. Public expenditure on education remained at 2.8% of the GDP during this period.

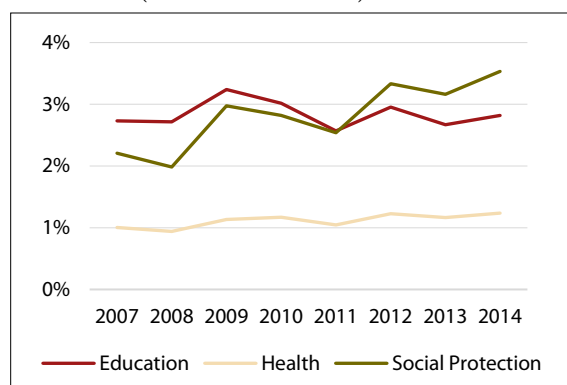
Figure 1: Azerbaijan: Public Spending on Education, Healthcare and Social Protection (% total budget expenditure, 2007–2014)



Calculated by author based on data taken from the laws regarding the state budget of the Republic of Azerbaijan (2007–2014). Available from: <budget.az>

To provide a more complete picture of social policy in Azerbaijan, it is imperative to compare its public spending allocation with the performance of neighboring countries, both resource-poor and resource-rich, including Armenia, Georgia, Kazakhstan and Turkmenistan. As illustrated in Table 1 overleaf, Azerbaijan has the lowest status among this group of countries on social spending indicators. The level of public spending

Figure 2: Azerbaijan: Public Spending on Education, Healthcare and Social Protection (% GDP 2007–2014)



Calculated by author based on data taken from the laws regarding the state budget of the Republic of Azerbaijan (2007–2014) and World Bank database (GDP US\$) (<budget.az> and <data.worldbank.org/indicator/NY.GDP.MKTP.CD>)

on healthcare did not match the increase in oil revenue and was less than that in resource-poor Armenia and Georgia and half that of resource-rich Kazakhstan. Its spending on education in 2006–2012 was less than that

3 Presidential decrees on the approval of the budget of the State Oil Fund of Azerbaijan (2007–2014). Available from: budget.az.

Table 1: Public Expenditure on Health and Education as % of GDP

Average	Azerbaijan	Armenia	Georgia	Kazakhstan	Turkmenistan
Health (2006–2014)	1.1%	1.9%	1.7%	2.3%	1.3%
Education (2006–2012)	2.6%	3.2%	2.8%	2.8%	N/A

Note: figures are averages for education expenditures (2006–2012) and healthcare (2006–2014); time frames for categories differ due to the lack of compatible data for all countries.

Source: World Bank database on health and education expenditure

of resource-poor Armenia and at approximately the same level as in Georgia.

Contrary to the promising discourse around public expenditures on social sectors, Azerbaijan actually invested less in social welfare than other comparable countries in the region. In short, during the oil boom, the level of the social spending budget was not positively correlated with the rate of budget expansion.

Did the Oil Boom Help or Hinder Human Capital Formation?

What was the impact of social sector expenditures on human capital development in Azerbaijan?

At first glance, over the last decade, Azerbaijan had quite impressive progress in human development. UNDP ranked the country with a “high” human development status and its HDI score improved from 0.61 in 2000 to 0.75 in 2015 on a scale ranging from 0 to 1. However, HDI has several measurement shortcomings. For example, due to the application of the arithmetic average, dividing the overall score achieved in all dimensions by three, a higher performance in just one of them can actually compensate for lower results achieved in other dimensions.

To evaluate the impact of social spending on two human development indices (education and health), I present an alternative method called data envelopment analysis (DEA). DEA is mathematical programming approach used to evaluate the relative efficiency of decision making units in management science and econ-

ometrics. By focusing on the input-output efficiency of public spending, the DEA approach avoids deficiencies inherent in the HDI Index and can better capture a country’s relative performance in human development.

The input and output scores in Table 2 below were taken from a study conducted by Asian Development Bank economists. In the DEA estimation, the input is determined by health and education expenditures per country. The outputs for health are subtracted from the life expectancy, DPT (diphtheria, pertussis, tetanus) and measles immunization rates from 1995–2010. The outputs for education are represented using the average over 2006–2012. Data for education are taken from the percentages of completed primary and lower secondary education.

Azerbaijan’s education expenditure efficiency score of 0.29 on the input side is far below the regional average of 0.73, and its output level is less than desirable. For health expenditures, it matches the average for the Asian region on the output score but not on the input score. Thus, in three of the four categories, Azerbaijan was one of the least efficient countries in investments in social spending. Therefore, the problem is not only with the amount of money allocated to social security and education but also with ineffectiveness.

To understand the actual impact of input-output ineffectiveness on human capital development in Azerbaijan, it is worth looking at the Human Capital Index (HCI), a ranking compiled by the World Economic Forum. The scores are presented as standard deviations

Table 2: DEA Analysis: Education and Health Expenditure Efficiency Scores for Azerbaijan

	Input Oriented	Output Oriented
Education expenditure efficiency score for Azerbaijan (average from 2006–2012)	0.29	0.89
Average for Asian countries—education (2006–2012)	0.73	0.94
Health expenditure efficiency scores for Azerbaijan in 2010	0.86	0.96
Average for Asian countries—health in 2010	0.93	0.96

Source: Lavado, R. F., Domingo, G.A., *Public Service Spending: Efficiency and Distributional Impact—Lessons from Asia*. 2015 Asian Development Bank (Economics Working Paper, No. 435), <<https://www.adb.org/sites/default/files/publication/161539/ewp-435.pdf>>

from the mean (0), which is the average for countries included in the ranking. Positive scores are set above the mean, and negative scores are below the mean. For instance, a standard deviation of plus or minus 1 equals 34.13% above or below the mean.

In 2013, Azerbaijan ranked 64th out of 122 countries with a score of -0.157, which indicates the number of standard deviations below the mean⁴. The country performed better on the ‘workforce and employment’ category but scored poorly on education and health care evaluation. Within the Europe and Central Asia region, Azerbaijan scored higher than both Georgia and Armenia overall but still performed lower in the ‘health and wellness’ and ‘education’ categories (in comparison to Armenia) and ‘health and wellness’ (compared to Georgia).

The Reality Behind the Numbers

The low ranking achieved by Azerbaijan on the ‘health and wellness’ category is an indicator that health services and the health system in general suffer from negligence and disregard by public authorities: The majority of investments in the health sector are targeted at infrastructure and construction projects, such as building new hospitals and buying new equipment. While nobody would contest the importance of replacing outdated equipment and mending the crumbling walls of hospitals, the majority of the medical staff lacks sufficient training to use such new facilities properly. The government officially provides free health care to all citizens, but health care services in Azerbaijan are unofficially privatized, and “out-of-pocket” payments add up to 89% of total private expenditure on health.⁵ This could be explained by the fact that medical personnel in Azerbaijan are heavily underpaid. The average wage for public health sector nurses is \$150 per month.⁶

According to the Human Capital Index, Azerbaijan was given the lowest score for the tertiary education category. However, the country managed to achieve near universal coverage of primary and secondary education, though the *quality* of education deteriorated substantially over the years. In the 2009 Programme for International Student Assessment (PISA) report, Azerbaijan had one of the lowest scores in reading (64), mathematics (45), and science (63) out of the 65 countries included, of which only one other post-Soviet republic, Kyrgyz-

stan, performed worse. In addition, data from the State Students Admission Commission, which oversees and administers university entrance exams, show that many university applicants fail to achieve even the minimum passing score. In 2015, 37% of all university applicants scored below 100 on the test, which has a maximum possible score of 700.⁷

Concluding Remarks

In the wake of the decline in oil prices, Azerbaijani policy makers have found themselves in a difficult position. The substantial decrease in the influx of oil money has impaired their ability to collect fiscal revenue. The strategy designed to diversify the economy through building a solid human capital base did not succeed due to the insignificant amounts of funds allocated and the inefficiency in public spending on social sectors. This limits Azerbaijan’s ability to compete in international markets. Under the conditions of a weak human capital base and low oil prices, the productivity rate in the private sector decreases, whereas the unemployment rate increases leaving more people on the verge of poverty.

With regard to healthcare and education, the amount and direction of investment do not seem to change the quality of services offered in those sectors. A high inflation rate and a series of currency devaluations hit public sector employees particularly hard. When left underpaid, health sector workers will demand more informal out-of-pocket payments from patients to make ends meet. As a result, rampant corruption undermines whatever positive effects social spending is expected to have on human capital development. The lack of a strong human capital base will lead to a widening of the inequality gap between the poor and the rich because only the latter can afford higher-quality private education and health services. Amid the oil price slump, the government has tried to slash public investment projects and increase public spending on education and healthcare. However, without major institutional reform improving efficiency in the allocation and use of public funds and the quality of policy implementation, these measures are unlikely to lead to gains in human capital progress.

Information about the author and recommended reading are overleaf.

4 Saadia Zahidi et al., *The Human Capital Report: Insight Report*. Geneva: World Economic Forum, 2013.

5 Caucasus Research Resource Centres, “Funding for Healthcare in the South Caucasus”, October 15, 2013. <<http://crrc-caucasus.blogspot.se/2013/10/funding-for-healthcare-in-south-caucasus.html>>

6 Durna Safarova, Azerbaijan: Growing Number of Citizens Heading Abroad for Medical Care, Eurasianet.org, August 15, 2016. <<http://www.eurasianet.org/node/80151>>

7 The State Students Admission Commission of the Republic of Azerbaijan, *Abituriyent 2015/2016, 2016*. <<http://tqdk.gov.az/activities/statistics/>>

About the Author

Surayya Mammadova recently graduated from Kassel University with an MA degree in Global Political Economy. She wrote her MA Thesis on the relationship between resource dependency and human capital development in Azerbaijan. Her research interests include natural resource governance and sustainable development with a regional focus on Post-Soviet rentier states.

Recommended Reading

- Baldacci, Emanuele, Benedict J. Clements, Qiang Cui, and Sanjeev Gupta. "Social Spending, Human Capital, and Growth in Developing Countries: Implications for Achieving the MDGs". *IMF Working Paper* No. 04/217, 2004. <<http://elibrary.imf.org/view/IMF001/06304-9781451875140/06304-9781451875140/06304-9781451875140.xml>>.
- Hanushek, Eric A. "Economic Growth in Developing Countries: The Role of Human Capital." *Economics of Education Review* 37 (2013): 204–212.

The Quality of Education in Azerbaijan: Problems and Prospects

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Abstract

Over the past two decades, Azerbaijan has experienced a drastic decline in the quality of education, particularly at the higher education level. Although the oil industry experienced a boom for nearly a decade, the education sector stagnated and underperformed. The level of funds allocated to education remained unusually low, especially compared to the funds allocated to infrastructure development and vanity projects. Consequently, the quality of public education deteriorated precipitously, falling behind even the Commonwealth of Independent States (CIS) regional standard. Using a demand-and-supply perspective, I argue that the diversion of public funds away from human capital development toward unproductive investments by rent-seeking elites on the supply side and low returns to high-quality education (valuing educational certificates more than knowledge and skills obtained) and an excessive reliance on patronage and personal connections on the demand side are the key impediments to the advancement of educational quality in Azerbaijan. Further structural reforms are required to address these perverse incentives embedded in the existing institutional framework.

Performance

Azerbaijan has a young population: nearly 40% of its 10 million-strong population is below 24 years old. It also has one of the highest birth rates in the CIS region. Having a large proportion of young people is advantageous in providing manpower to meet the needs of the market and boost the economy; however, it poses a challenge regarding training a highly skilled workforce for a job market in which youth employment represents only 23% (as of 2014). In other words, the specific problem currently facing Azerbaijan is whether the country's public school system has sufficient capacity, funds and teaching resources to accommodate the growing numbers of young people.

As in other resource-dependent countries, the "oil curse" hurts young people's employment opportunities

as domestic jobs are scarce due to the underdevelopment of non-oil sectors and weak private business. The international labor market is highly competitive with many barriers to entry. A strong modern education system and continuous professional training opportunities for the Azerbaijani workforce are crucial in order to meet domestic demand and provide the skills required to compete in international markets. However, evaluations by international organizations and education experts demonstrate that Azerbaijan is underperforming in education quality and is clearly underutilizing its potential demographic advantage. This reverses the 'youth bulge' advantage, forcing better educated young people to exit and emigrate ("brain drain") to western countries. Meanwhile, the majority of poorly educated labor was, until recently, absorbed