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SUBSIDIZING INEQUALITY: POLICY AND HIGHER EDUCATION IN THE MIDDLE EAST AND NORTH AFRICA

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This policy perspective demonstrates that attainment of higher education is notably unequal in Egypt and Tunisia, but less so in Jordan. In all three countries family socioeconomic characteristics are the primary driver of inequality, even after accounting for test scores. Particularly in Egypt and Tunisia, where higher education is free of charge, public spending on higher education is regressive. Thus, a theoretically meritocratic and equitable system perpetuates inequality.

Introuction

Countries in the Middle East and North Africa (MENA) have made enormous investments in higher education, with most countries providing higher education for free (Assaad, 2010). The three countries this brief examines—Egypt, Jordan, and Tunisia—follow this regional investment pattern. Egypt and Tunisia guarantee free higher education. Jordan does not have such a guarantee but instead relies on a mix of public subsidies and private funding. Whether by providing free higher education, as in Egypt and Tunisia, or scholarships for poor students, as in Jordan, these higher education policies are designed to provide equal access to higher education in MENA. For instance, the Jordanian Constitution states “the Government ... shall ensure ... equal opportunities to all Jordanians” for education. Despite good intentions, this brief demonstrates that all three countries fail to provide equal opportunities to attain higher education.

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Whether young people are able to attain higher education could be affected both by their efforts, factors within their control, such as how hard they study in school, and the circumstances over which they have no control, such as their parents' education. While those who exert more effort (for instance, study harder) should be rewarded with higher education, the principle of equal opportunities means that circumstances, such as sex, should not affect attainment of higher education. When circumstances affect attaining higher education, this is termed inequality of opportunity (Roemer, 1998).

In an attempt to ensure all young people have fair access, MENA countries have national exams that determine if students can enter higher education. In theory this system is fair, as it is based on merit. A

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system based on merit should, theoretically, ensure equality of opportunity. Personal background (circumstances) should not influence young people's test scores or their ability to enter higher education. Although the current system may be well-intentioned, this research demonstrates that the current approach fails to ensure equal opportunities. Individuals' background determines their attainment of higher education. Test scores do affect attainment, but test scores themselves are determined in part by background. Furthermore, even after accounting for test scores, social background has a substantial, direct effect on attaining a higher education. Thus, no country provides equal opportunities.

Due to the very unequal opportunities to attain higher education, the large investments countries make in higher education are ultimately regressive. In Tunisia 2.0% of GDP is devoted to higher education spending, Egypt spends 1.1% of GDP on higher education, and Jordan spends around 0.8% (Abdessalem, 2010; Kanaan, Al-Salamat, & Hanania, 2010; OECD/The World Bank, 2010). This money primarily benefits those from advantaged social backgrounds. Essentially, public spending on higher education is a handout of public resources to those who are already the best off in society.

Notably, we find that the two nations that guarantee free public higher education, Egypt and Tunisia, have the highest inequality of opportunity. Egypt and Tunisia also spend a greater share of their education funding on higher education than Jordan. Jordan devotes more resources to levels of schooling prior to higher education, where enrollment is more equitable, and also provides scholarships to poor students. While Jordan's policies have not fully ensured equal opportunities, compared to Egypt and Tunisia, they have generated less inequality. Abolishing free higher education in MENA, charging tuition, and reallocating resources to lower levels of education and scholarships targeted to the poor

would reduce the share of limited public resources going to the rich and reduce inequality in attainment of higher education.

Measuring Inequality

This brief's assessment of inequality in higher education uses the Egypt Labor Market Panel Survey (ELMPS) of 2012, the Jordan Labor Market Panel Survey (JLMPS) of 2010, and the Tunisia Labor Market Panel Survey (TLMPS) of 2014. The analyses measure attainment (completion) of a higher education degree. Higher education is defined to include completing at least a two-year post-secondary degree (short cycle in Tunisia) or four-year university degree (long cycle in Tunisia). In order to ensure individuals were old enough that higher education attainment would have occurred, we examine only those ages 25-59 at the time of each survey. The sample is therefore 19,499 individuals in Egypt, 9,131 individuals in Jordan, and 5,402 individuals in Tunisia.

Aspects of circumstances examined in the analyses include where individuals were born, their parents' education level, their father's work sector when they were 15, their number of siblings, and their sex. The data for Egypt and Tunisia, but not Jordan, also include test scores that determine access to higher education. In Egypt preparatory scores are used, since preparatory scores determine secondary tracking and thus access to higher education. In Tunisia secondary (baccalaureate) scores are used. To measure inequality, we use the D-index, a statistical measure that quantifies inequality of opportunity in terms of the percentage of opportunities to attain higher education that would need to be redistributed for individuals to have equal chances of higher education regardless of their background (de Barros, Ferreira, Vega, & Chanduvi, 2009). A Shapley decomposition (Shorrocks, 2013) allows us to look at what percent-

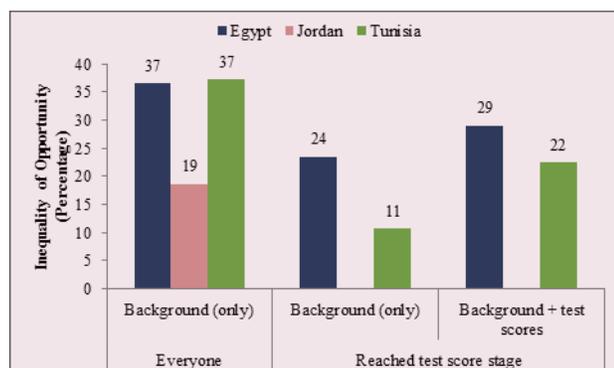
age of inequality is due to different factors, such as sex. Additionally, we use regression models to assess the contributions of individual factors, for instance father's education, to inequality, while accounting for other factors. This allows us to separate the impact of one characteristic—such as father's education—from other, related factors—such as mother's education. These models also allow us to simulate outcomes for individuals of very different backgrounds. Specifically, we compare a “most advantaged” girl and boy to a “least advantaged” girl and boy to see how higher education attainment varies between those from the best and worst backgrounds.

Inequality of Opportunity in Attainment of Higher Education

Under the current system attainment of higher education is far from equitable. Figure 1 shows inequality of opportunity, first examining the inequality due to background for everyone. Inequality among those who make it to the test score stage (preparatory in Egypt, secondary in Tunisia) is then presented. Comparing inequality among those who make it to the test score stage and everyone allows for an examination of how much inequality of opportunity occurs in even reaching this level, and how much inequality of opportunity occurs in moving from the test score stage to higher education. The final columns present inequality after adding in test scores. Examining the increase in inequality that occurs in adding test scores shows how much of inequality in attaining higher education is driven by test scores—which are supposed to be the sole determinant of accessing higher education in a meritocratic system.

Looking first at inequality among everyone, in Egypt inequality of opportunity for higher education is 37%. In Jordan inequality of opportunity is 19% and in Tunisia 37%. In no country are there equal chances of attaining higher education regardless of back-

Figure 1. Inequality of Opportunity (Percentage)



ground. The extent of inequality, particularly for Egypt and Tunisia, is notably high. Although there are not other studies examining inequality of opportunity in higher education outside MENA (primarily due to the need for data on family background), comparisons can be made to a study examining primary completion in almost 50 developing countries throughout the world. In that study, the highest inequality of opportunity in primary completion was 43.5% in Niger (World Bank, 2016), very close to the level of inequality of opportunity in higher education observed in two of the MENA countries. Tunisia and Egypt are currently far from providing equal opportunities for higher education, despite their policies of free higher education. While Jordan does still have substantial inequality, it has a lower level of inequality than Egypt or Tunisia. Notably, Jordan has lower inequality despite the fact that higher education is not free.

Restricting the analyses to the select group who reached the test score stage shows that in Tunisia much of inequality of opportunity occurs before the test score (secondary) stage. In Egypt more inequality occurs later in the education system. In Egypt, when examining the impact of background on attainment of higher education among those reaching the test score stage, inequality of opportunity is 24%, compared to 37% for everyone. The lower

level of inequality among those reaching the test score stage compared to everyone indicates that an important component of inequality of opportunity is even progressing far enough to potentially test in to higher education. In Tunisia inequality is only 11% among those reaching the test score stage, compared to 37% for everyone. Most of the inequality in attaining higher education in Tunisia occurs in terms of even reaching the test score stage. Thus, those who even have a chance to access higher education are a much more select group in Tunisia.

It is important to keep in mind that test scores themselves are determined by family background. In Egypt, 20% of the variation in test scores is related to background and in Tunisia 13% of the variation in test scores is related to background. Disparities are substantial; for instance, the net effect, accounting for other characteristics, of having a mother with a higher education rather than an illiterate mother is an approximately 10 percentage point increase in test scores in both countries (Krafft & Alawode, 2016). Thus, test scores mediate some of the inequality of opportunity in attaining higher education. Those from richer and more educated families get higher test scores, and this is one of the ways they are more likely to attain higher education.

When test scores are included as a factor contributing to inequality, in the final columns of Figure 1, inequality increases only a little in Egypt, from 24% among those reaching the test score stage to 29% when test scores are included. This means that including test scores explains only a little more of attainment of higher education in Egypt, indicating that family background is the driving factor in attaining higher education. In Tunisia, adding test scores doubles the share of inequality explained, from 11% to 22%. In Tunisia, background contributes considerably to reaching the test score stage, and then test scores contribute half of inequality beyond that point. Comparing Egypt and Tunisia

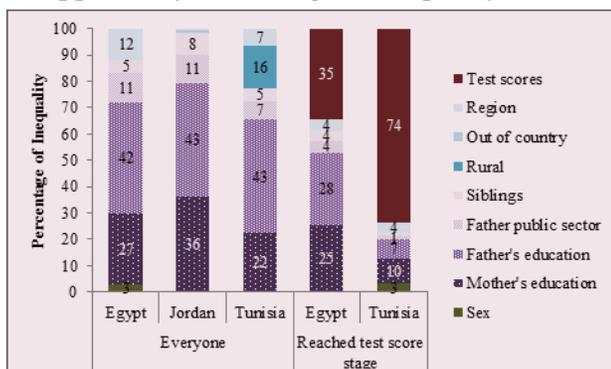
suggests there is more inequality in moving from lower grades to higher education related to family background in Egypt, while in Tunisia test scores have a larger direct effect.

Examining the different characteristics that drive inequality, it is father’s education that is the most closely related to inequality. Figure 2 examines what characteristics contribute to the inequality shown in Figure 1. This decomposition is undertaken for the impact of background on everyone and then for those who reach the test score stage, including the role of test scores (decomposing the last set of columns in Figure 1). Looking first at the results for everyone, in all three countries father’s education accounts for 42%-43% of inequality. Mother’s education also plays a large role (from 22% in Tunisia up to 36% in Jordan). Father’s job sector makes modest contributions to inequality (7% in Tunisia to 11% in Egypt and Jordan). Being born out of the country is only relevant in Jordan, where it has a small contribution. Regional geographic disparities are substantial (12% of inequality) in Egypt and urban/rural disparities are large (16% of inequality) in Tunisia. There are only small differences by sex, and only in Egypt, where disparities by sex comprise 3% of inequality. These results demonstrate that a person’s socioeconomic background determines whether

or not they attend higher education. In particular, educational attainment is transmitted across generations, from parents to their children.

When test scores, which are supposed to determine access to higher education, are included, family background still makes major contributions to inequality. It is important to keep in mind that, as discussed earlier, test scores are in part determined by family background, so family background has a double impact. Comparing the results in Figure 2 to Figure 1, we can see that the difference in total inequality of opportunity when test scores are added is less than the share of inequality related to test scores. This means that some of the impact of family background in both countries is mediated through test scores. We see that in Egypt test scores account for 35% of inequality, meaning background is still having a large direct effect, 65% of inequality. In Tunisia, however, the largest driver of inequality when accounting for test scores are the test scores themselves, 74% of inequality. This result is due in part to there being so much inequality beforehand in Tunisia that those who receive the test are already at an advantage. Overall, in both countries, even after accounting for test scores, background is a substantial determinant of attaining higher education. Thus, inequality of opportunity is due to not only background determining test scores, but also background directly impacting attainment of higher education even after accounting for test scores. Attainment of higher education is not determined by merit.

Figure 2. Factors Contributing to Inequality of Opportunity (Percentage of Inequality)



In all three nations we see that father’s education greatly influences individuals’ ability to attain higher education. Figure 3 focuses on this result and presents the net effects of father’s education on the probability of attaining higher education, after accounting for other characteristics (holding other characteristics constant). The characteristics other than father’s education used to predict the chances

of higher education are those observed for the 1980-1989 birth cohort, as a representation of current trends. All else equal, in Egypt someone whose father is illiterate only has a 15% chance of attaining higher education while someone's whose father has attained higher education has a 62% chance. Egypt has the greatest disparities, but disparities in Jordan and especially Tunisia are also substantial. In Tunisia, a person whose father is illiterate only has a 16% chance of attaining higher education, while someone whose father had attained higher education has a 55% chance. That father's education has such a large net effect, all else equal, illustrates the impact of family background on attaining higher education and the pervasive inequality of opportunity.

Although Figure 3 shows the impact of father's background, all else equal, individuals are likely to have multiple advantages or disadvantages. To see how far apart the chances of attaining higher education would be for such individuals, we compare a most advantaged individual and a least advantaged individual in each country, separately for boys and girls,¹ in Figure 4. The disparities are stark. In Egypt the least advantaged boy has a 6% chance of attaining higher education whereas the most advantaged boy has a 94% chance of attaining higher education. For girls in Egypt the least advantaged has a chance

Figure 3. Attainment of Higher Education by Father's Education, Net Effects (Percentage)

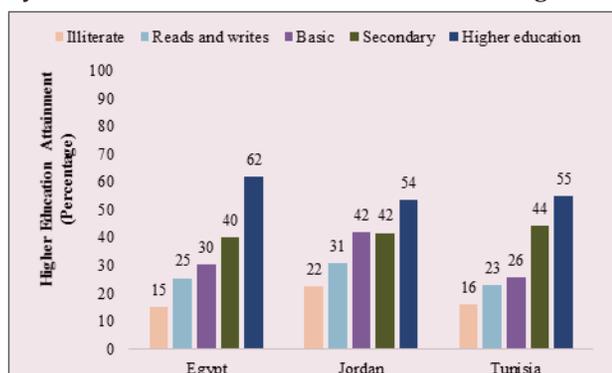
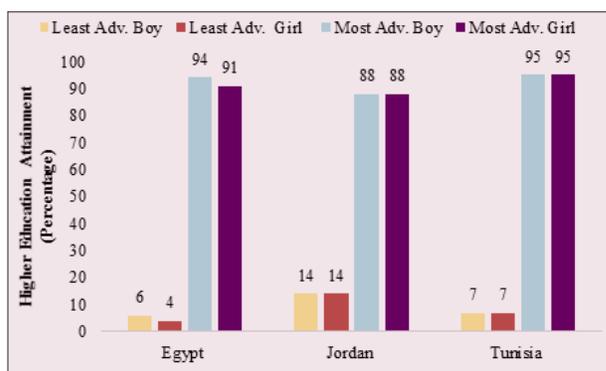


Figure 4. Attainment of Higher Education for Least and Most Advantaged Girls and Boys (Percentages)



of 4% and the most advantaged 91%, an even larger disparity. In Jordan the disparity is less, but still large, with the least advantaged boy or girl having only a 14% chance of attaining higher education and the most advantaged having an 88% chance. In Tunisia the least advantaged boy and girl have an only 7% chance while the most advantaged boy and girl have a 95% chance. Across all three nations the most advantaged boys and girls are more than six times more likely to attain higher education than the least advantaged, and up to 22 times more likely (for girls in Egypt). Children of different backgrounds have radically different opportunities to attain a higher education.

¹ The most advantaged boy or girl in Egypt is defined as one that lived in urban Greater Cairo, with 2-0 siblings, whose father worked in the public sector, and whose parents both have attained higher education. The least advantaged boy or girl is one that lived in rural Upper Egypt, with +8 siblings, whose father worked in the private sector, and whose parents were illiterate. For Jordan we defined most and least advantaged using the same criteria as for Egypt, except in Jordan's case the most advantaged person was from the Middle region whereas the least advantaged was from the North region. Tunisia was categorized using the same method, but the location for the most advantaged person was an urban area of the North region and for the least advantaged was a rural area of the Center West region. In all cases outcomes were simulated for someone born in 1989-1980.

Conclusions and Policy Recommendations

Whether young people in MENA attain higher education profoundly affects their futures, including their prospects for work, income, and even marriage (Amer, 2014, 2015, Assaad & Krafft, 2014, 2015a; Krafft & Assaad, 2016). While MENA countries are moving towards compulsory and universal primary and even secondary education, opportunities to attend higher education are not universal. Only a fraction of young people will be able to attain higher education. Who has the chance to attain higher education is thus a question of great importance. This brief has demonstrated that there are not equal opportunities to attain higher education in Egypt, Jordan, or Tunisia. MENA countries disproportionately provide higher education to those from more advantaged backgrounds. Ultimately, higher education policies are subsidizing inequality, not only in higher education, but also in the opportunities for work and marriage that are determined by attaining a higher education.

Equal opportunities for higher education would only occur if individuals' attainment of higher education were determined solely by their efforts—not by their backgrounds. Yet background is a substantial driver of inequality in Egypt, Jordan, and Tunisia, with particularly high levels of inequality in Egypt and Tunisia. Parents' education in particular is linked to inequality, such that countries are subsidizing and reinforcing the intergenerational transmission of socio-economic status. Although test scores are supposed to provide access to higher education based on merit, test scores are themselves affected by background. Furthermore, background affects attainment of higher education even after accounting for test scores, creating a double barrier to higher education for disadvantaged youth.

Free higher education, offered in Egypt and Tunisia,

is thus a regressive policy that primarily benefits the rich. Jordan, which does not guarantee free higher education, is still subsidizing the best off in devoting substantial public funds to higher education. Instead of offering free higher education Egypt and Tunisia should charge tuition to those who can afford it and offer need-based scholarships, as is done (and ought to be expanded) in Jordan (Kanaan, Al-Salamat, & Hanania, 2010). Targeted scholarships will help ensure that students from less advantaged backgrounds receive the aid needed to complete their degree and that all members of society benefit from the higher education system, not only the wealthy. Charging tuition will also provide additional financial resources to the education system, allowing for greater investments in earlier stages of education, helping to equalize opportunities to progress through school and potentially attain higher education.

Notably, the two countries that guarantee free public higher education, Egypt and Tunisia, have the highest inequality of opportunity. One of the reasons that Jordan may have less inequality of opportunity than Egypt and Tunisia is that it devotes relatively more public resources to basic education, providing a more equitable path through the education system. While Egypt devotes 32% of its education spending to higher education and Tunisia 27%, the share of education spending allocated for higher education is only 20% in Jordan (Abdessalem, 2010; El-Baradei, 2013; Kanaan, Al-Salamat, & Hanania, 2010; OECD/The World Bank, 2010). The lower share of higher education spending in Jordan allows relatively more resources to flow to pre-university levels. This funding structure increases the chances that free public education prior to university is adequate to subsequently provide access to university. Because free public basic education is inadequate to ensure success in contexts such as Egypt, families invest substantially in tutoring (Assaad &

Krafft, 2015b). The ability to invest in tutoring is one mechanism that contributes to primarily better-off students progressing through the education system and benefiting from free higher education.

To reduce inequality in education and the regressiveness of education investments, all three nations should allocate more of their education budgets towards pre-university education. This recommendation runs directly counter to the current policy direction in the region. For instance, Egypt's new constitution mandates 4% of GDP spent on education and 2% on higher education; this means half of education spending will go to higher education. This planned resource shift is likely to exacerbate inequality. If, instead, nations focus their investments on earlier levels of school, they will ensure that students have fairer chances to progress, including to attain higher education. Equalizing access to kindergarten and other early educational experiences can also play a critical role in reducing school-readiness disparities between children from wealthy families and children from poorer families (El-Kogali & Krafft, 2015; Krafft, 2015). By reducing inequality early on countries can reduce inequality in higher education as well.

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