

Education and economic development: evidence from mass migration to Israel

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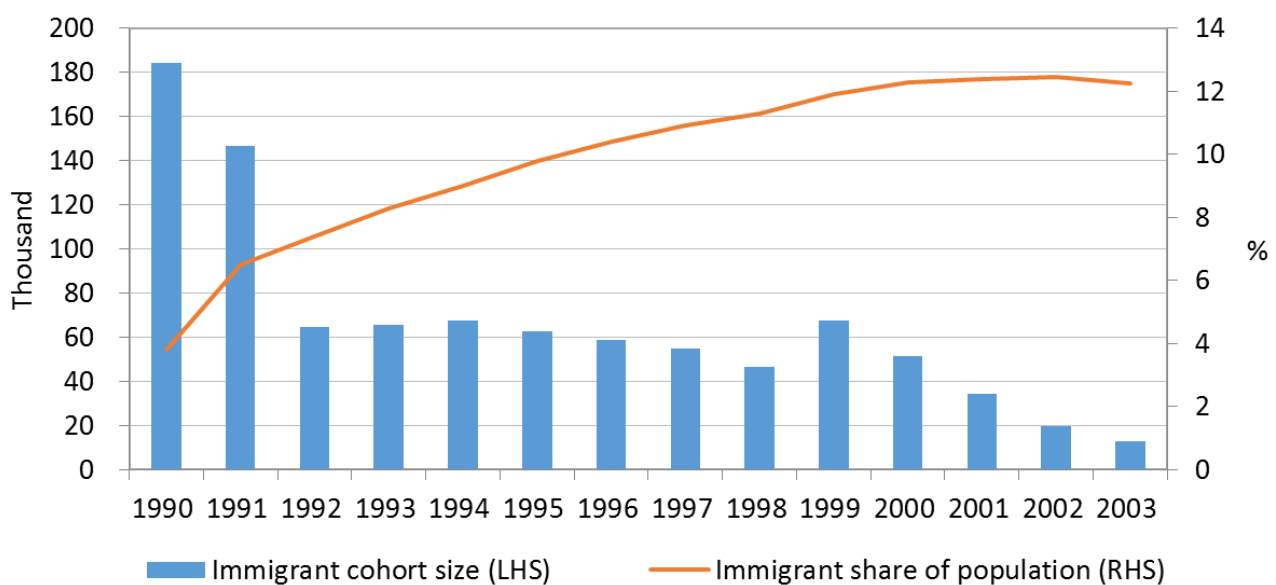
Education levels in the developing world have increased remarkably over many decades yet there is [no clear evidence](#) that nations that boosted education have benefited in terms of faster economic growth. While the benefits of education are broader than what can be measured through changes in income levels, there is an apparent disparity between this lack of evidence and development policy aimed at increasing economic development through investments in education. What then is the impact of a broad increase in education on an economy, if anything at all, and how can countries maximise returns on their investments in education?

Lant Pritchett, in trying to understand this problem nearly 20 years ago, posed the question: [where has all the education gone?](#) Unfortunately, this question is just as relevant today. Pritchett put forward three possible explanations. First, while human capital is important to development, education may not create human capital. Second, the supply of educated labour may have outpaced demand, resulting in declining returns to education (or skills in the workforce not being utilised). Third, education may be devoted to self-serving activities that are counter-productive to economic development.

A new Development Policy Centre [Discussion Paper](#) sheds further light on this issue by analysing a natural experiment on the level of educated labour in an economy: the mass migration of nearly one million highly educated Russian Jews to Israel following the collapse of the Soviet Union in the 1990s.

This exogenous shock provides a rare opportunity to study the impact of a large increase in the supply of educated labour on labour market outcomes and the production structure of the Israeli economy – it can then give us insight into how other economies might be responding to the massive increases in education around the world in recent decades.

Figure 1: Russian immigrants to Israel by cohort size and share of Israel’s population



The initial cohort of Russian immigrants to Israel in 1990-91 was the largest and the highest educated on average (including 57,400 engineers and 12,200 medical doctors). Around 68 percent of this cohort had completed more than 12 years of schooling and 30 per cent had completed 16 or more years of schooling

(compared to 36 and 17 per cent in the general population, respectively). By 2003, 63 per cent of immigrants had more than 12 years of schooling compared to a 50 per cent share for non-immigrants, reflecting slightly less schooling of latter immigrant cohorts and general improvements in Israel's schooling outcomes.

The increase in labour from the immigration shock initially led to high rates of unemployment amongst the immigrants (a peak of around 24 per cent in 1991) but had reduced to less than 10 per cent by 1995, only slightly more than the unemployment rate for all other Israelis. Labour force participation of Russian immigrants was initially much lower than other Israelis but stabilised at around the same level by the middle of the 1990s ([Cohen and Hsieh](#)).

How did the production structure of the Israeli economy respond to this unanticipated influx of highly educated labour? Initial evidence on this for 1989-1996 is from [Gandal, Hanson and Slaughter](#) (henceforth GHS) who breakdown changes in the mix of labour types (by years of schooling categories) into changes that reflect output mix changes and changes in production techniques.

Output mix changes are increases or decreases in production across sectors of the economy. They can help absorb additional supply of educated labour if sectors that expand tend to employ high shares of educated labour and those that contract tend to employ low shares of educated labour. On the other hand, production technique changes refer to changes in the mix of inputs within sectors, such as the relative importance of labour with different levels of education.

The GHS results were surprising because they find that output expanded in sectors that tend to use high shares of labour that have relatively low levels of education. These output mix changes create increased demand for workers with low levels of education. However, this result makes little intuitive sense given a relative decrease in the supply of low educated workers. Instead, GHS find that changes in production techniques enabled the economy to absorb the increase in educated labour. GHS attribute this latter effect to a general trend of skills-biased technical change – that is, the adoption of technology that is complementary to workers with higher education/skills.

A problem with the GHS approach was that there is evidence of substantial occupational downgrading of Russian immigrants in Israel. Occupation downgrading occurs when people end up being employed in occupations that do not utilise their skills or qualifications to a full extent. While there were government programs to help ease the entry of immigrants into the economy, most immigrants could not speak Hebrew and had skills that, at least initially, were not valued or accredited in the labour market – doctors were working in the construction industry, for example. Racial discrimination was also a contributing factor.

In this situation, the level of schooling of immigrants is a poor measure of the value of their skills in the Israeli labour market. Instead, I use a measure of skills based on occupation types as reported in labour force surveys; for example, technicians are categorised as high skilled, clerks are medium-high, industry workers are medium-low, and unskilled workers are low skilled.

Table 1: Composition of total employment by occupation (%)

Occupation group	High	Med-High	Med-Low	Low
Total employed				
1990	30	39	28	3
1995	30	34	27	9
2003	36	36	20	8
Change in total employed				
1990-1995	-0.2	-5.3	-0.5	5.9
1995-2003	5.9	1.8	-6.8	-1.0

Notes: “High” designates academics, technicians and managers; “Med High” designates clerks and service workers; “Med Low” designates workers in agriculture and industry; and “Low” designates unskilled workers.

Despite a relative increase in highly educated workers between 1990-95 (see [Table 1](#)), this new approach shows that over this period there was a shift in the composition of labour away from high skilled occupations consistent with occupational downgrading: the low skilled occupation group share increased by 6 per cent. This outcome is also consistent with the GHS finding that output shares of low skill intensive sectors increased during these years.

The table above also shows, however, that there was occupational upgrading between 1995-2003, in part reflecting the time needed for immigrants to adjust to living in Israel and find employment suitable to their skill set. Applying the same decomposition technique to the period 1995-2003, but this time using occupation groups to classify skill levels, gives the result (not shown here) that changes in output mix across sectors did indeed play an important role in the economy absorbing the relative increase in skilled labour: that is, the output share of the relatively skilled sectors increased. Similar to GHS, I also find that changes in production techniques within sectors were important in the absorption of the additional supply of skilled labour but only at the high skill level – these changes tended to occur in sectors that were characterised by greater utilisation of high-technology capital in production.

While these findings are derived in the context of a specific country, they nonetheless suggest a number of ways in which economies more broadly might maximise returns on their investments in education and skills in the workforce.

First, it is important to facilitate flexibility in the economy so that output across sectors can grow or contract in a way that best utilises growth in skilled labour supply. Achieving this will help arrest declines in returns to education that would probably otherwise occur. Rigid economies prevent the birth of new firms that take advantage of increased skill levels in the workforce and allow firms that don’t to persist. Improving infrastructure and removing red-tape are ways to help the birth of new firms on the supply side and improving access to export markets helps the birth of new firms on the demand side.

Second, production technique changes may also be important to make best use of a growing supply of skilled labour, but possibly only at the higher end of the skill level spectrum, and if firms have access to high technology capital complementary to these skills.

Third, economies may benefit little from investments in education if occupational downgrading occurs in the workforce, which may occur when education is of low standard or certain skills are not valued in the workforce.

Fortunately the issue of low quality of education in many developing countries seems to be increasing in prominence, such as the move to include education quality as an objective in the new [Sustainable](#)

[Development Goals](#) rather than just [universal primary education](#) in the MDGs. Success in this area together with broad economic reforms in countries that promote the most efficient use of skilled labour will hopefully make Pritchett's "Where has all the education gone?" a much less relevant question in the not too distant future.

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