

Executive Summary

Israel's Growth Paradox:
Declining Productivity and Returns to Human
Capital

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Directed by the Milken Institute Israel Center, the Milken Institute Fellows Program awards annual fellowships to outstanding Israeli university graduate students. Through the Milken Institute Fellows program, we train some of Israel's best and brightest young professionals in creating pragmatic financing and economic policy solutions, and they deploy them as resources to government ministries, nonprofits and other key organizations. Our applied research and Financial Innovations Labs® are a launching pad for transformative change, using innovative financing mechanisms, programs and policies to bridge social, regional, economic and productivity gaps within Israel and between Israel and the world.

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There is a growing paradox concerning the relationship between human capital and labor productivity in Israel. Although the rate of applicants for higher education has multiplied since the early 1990s¹, it appears that Israel is on the same trajectory of growth in labor productivity that it has been on for the past four decades with little substantial improvement². This prompts the obvious question: Why are increases in education attainment not translating to an increase in the output per worker? Why is more education not leading to faster economic growth?

A cross-country analysis shows that the human capital component in the GDP is higher by about 15 percent from what we would expect from our level of total factor productivity (TFP), labor and capital. This comparison reveals that our TFP level is much too low, approximately by 10 percent. When we look at the rate of growth of the human capital component in the GDP over the past decade, it fails to match the rapid increase in education rates. In fact, according to OECD estimates, less than 8 percent of per capita GDP growth over the past decade is due to the increase in human capital. Thus it appears that the contribution of education to the GDP-- and therefore to the standard of living has declined. This represents a significant challenge for activist labor policies to insure increasing rates of return of investment in human capital--- Israel's most critical growth resource.

Without changes in these dismal standards of labor productivity performance, continued increases in income inequality and a lack of job creation for a growing share of the educated work force will result.

Economic theory and empirical studies suggest that an increase in education has a positive influence on productivity, both directly by enhancing cognitive skills thus increasing workers' ability to adapt to new technology, and indirectly by advancing the labor force up the value chain towards more productive employment opportunities.³

¹ See Bank of Israel annual report (2011), 40-43.

² See The Taub Center for Social Policy Studies in Israel, "*State of the nation report 2011-2012*", 18-20.

³ However, several more recent studies show empirical cross-country evidence casting doubt on the impact of schooling on aggregate growth See Bils, and Klenow (2000). "Does schooling cause growth?" and Pritchett. (2001). "Where has all the education gone?".

However, as of 2011, Israel is ranked third among OECD countries regarding tertiary education among the primary working age population (25-64). Yet Israel's labor productivity is lower than most OECD countries, consisting of only 75% of the OECD average, 63% of the average in the G-7 countries, and only 56.3% of the labor productivity in the United States⁴. This gap is further widening as Israel's labor productivity is diverging from the rest of the developed countries⁵.

Israel's segmented labor market

Employing historical time series data and manpower surveys conducted by the Central Bureau of Statistics (CBS), the study builds upon a data set ranging from 1995 up until and including - 2009, allowing for employment, output and educational trends to be examined. In addition, using the CBS Supply and Use tables, we devised a tradability index in order to indicate the sensitivity of the economic sectors to foreign competition.⁶

After that, we divided the labor market into tradable and non-tradable components so that both could be examined. We found that in the tradable sector, education is associated with a rise in GDP per worker. On average, an increase of one year of education translates into a 26 percent increase in output per worker.

On the non-tradable side, we fail to find a statistically significant correlation between these two variables. This is despite a dramatic increase in education in both sectors. When applying the tradability index, we find that the educational impact on output per worker increases as the degree of tradability of the industry increases. This was expected, because while output per worker rose substantially on the tradable side, on the non-tradable side, output per worker has stagnated.

Unfortunately, a growing share of employment is concentrated in the non-tradable sector, resulting in a steady decrease in the share of the tradable sector in the labor market. For

⁴ OECD, "Education at a glance" (2013) and OECD stat data.

⁵ See Bank of Israel annual report (2012), 43-47.

⁶ I do so by using the CBS Supply and Use tables. The index is computed by the share of exports and competitive imports in the total supply.

example, in 1995 there were about four workers in the non-tradable sector for every worker in the tradable sector. This imbalance increased to 5:1 by 2011⁷.

There are considerable potential implications of these findings upon income distribution and resulting aggregate demand. Since a larger share of employment is being generated in the non-tradable sector, where output per worker has remained constant, and since labor productivity is highly correlated with income, this helps to explain both the increase in income inequality and the stagnation of wages across large segments of the workforce.⁸

So why do less than 20 percent of the workers get the opportunity to realize income returns from their education?

This study shows that the tradable sector is moving up the value chain, gravitating toward higher value-added employment opportunities, hence creating better job prospects and higher wages. However, this is true only for a decreasing share of the educated workforce. Finding better jobs is becoming more difficult. Whereas education rates are increasing, the share of high-end employment opportunities is not. As a result, employers are growing more selective in their hiring standards.⁹

This is not the case in the non-tradable sector, consisting of more than 80 percent of the labor market. Despite technological advancements across all sectors of the economy, the substantial increase in education did not result, on average, in better employment opportunities.

We believe that the main reason for this lies in the lack of local competition and an excess supply of low-paid workers in the non-tradable sector.¹⁰ Employers have little incentive to adapt new technologies and more efficient work methods and attract higher rates of capital investment and technology adoption.

⁷The complete data set is up until and including 2009, due to the fact that data on productivity is only available up until that time. The remaining data on employment components was available up until 2011. Therefore I am presenting this finding on the more recent data.

⁸ This finding is common in other developed. See Spence (2011), *"The evolving structure of the American economy and the employment challenge."*

⁹ See also Helpman, Itzhoki and Redding, *"Unequal effects on workers with different abilities."*

¹⁰ This is apparent in CBS labor market surveys and described in detail in the study.

Policymakers must reverse the decline in employment in the tradable sector. This is a crucial task that, if successful, would decrease the excess employment in the non-tradable sector, and over time would lead to higher wages in this sector thereby reducing growing income inequality.

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