How Responsive Is Investment in Schooling to Changes in Redistributive Policies and in Returns?

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Israeli kibbutzim are voluntary communities that have provided their members with a high degree of income equality for almost a century. Traditionally, all kibbutzim were based on full income sharing between members. Specifically, each member of a kibbutz was paid an equal wage, regardless of her contribution to the community. Kibbutz members who worked outside their kibbutz brought their salaries in, and these were split equally among members. This compensation scheme meant that monetary returns to ability and effort were close to zero.

The episode that we study is a unique pay reform that kibbutzim in Israel adopted beginning in 1998. During the following years, many kibbutzim shifted from equal sharing by introducing compensation schemes based on members’ productivity, which created a link between productivity and earnings in kibbutzim for the first time. These pay reforms were a response to changing external pressures and circumstances facing kibbutzim. Some contributing factors were a decline in world prices of agricultural goods, bad financial management, and a high-tech boom during the mid-1990s, which increased members’ outside options considerably. Perhaps the biggest factor was the 1985 stabilization program in Israel following a few years of high inflation, which raised interest rates dramatically and left many kibbutzim with huge debts they could not repay. As a result, living standards in many kibbutzim fell substantially, members left in large numbers during the late 1980s and early 1990s, and talk about a major reform of kibbutz life began.

In reformed kibbutzim, members’ wages reflected market wages. Members who worked outside their kibbutzim (about a quarter of all members) kept a large share of the wages they received from their employers. Members who worked inside received wages based on the wages of non-kibbutz workers of similar occupation, education, skills, and experience. A kibbutz “tax” was deducted from these gross wages to guarantee older members and very-low-wage earners in the kibbutz a safety net (i.e., a minimum wage). The pay reform was essentially a sharp decrease in the income tax rate. Before the reform, the income tax rate in kibbutzim was 100 percent. Post reform, the tax rates in kibbutzim became more similar to the Israeli tax rates. Specifically, kibbutz members faced a progressive tax system, with marginal tax rates ranging from 20 to 50 percent.
The pay reform was also highly salient. The move from equal sharing to differential pay strongly signaled an increase in the financial rewards for human capital. This increase in the return to skills was noticeable within a family, as students’ parents experienced a decrease or increase in their earnings depending on their skills. Moreover, with the implementation of the reforms, kibbutz members received detailed information about the new sharing rule and how earnings were now going to be linked to productivity and reflect market forces. The productivity-based sharing rules were hotly debated by members in the kibbutzim and the reforms also received a lot of attention in the media, both in Israel and abroad.

Our research studies whether this sharp change in the redistributive policy, by increasing the returns to schooling for kibbutz members, induced high-school students to invest more in their education. We use administrative records collected by the Israeli Ministry of Education for six consecutive cohorts (from 1995 to 2000) of 10th-grade students, following them to graduation, combined with National Social Security Administrative data on completed years of higher education when individuals in our sample were 28 to 33 years old. One outcome is whether the student passed all the matriculation exams successfully and got a matriculation diploma (equivalent to a baccalaureate diploma in most European countries), which is necessary for post-high-school education in Israel and yields a substantial earnings premium in the general Israeli labor market. Other outcomes of interest are whether the student graduated high school, her average score in the matriculation exams, and whether her diploma meets the university entrance requirements. We then study whether, in the long run, these students enrolled in post-high-school education of various types and how many years of schooling they completed.

Our empirical strategy relies on the fact that the pay reform was not implemented in all kibbutzim in the same year. We compare educational outcomes of high school students in kibbutzim that reformed early (1998–2000) versus late (2003–2004), before and after the early reforms. We show evidence that students in early reforming (the “treatment group”) and late-reforming kibbutzim (“control group”) are similar in their observable background characteristics and in their pre-reform schooling outcomes.

Overall, we find that students in kibbutzim that reformed early experienced an improvement in high-school outcomes such as graduation rate and mean score in matriculation exams (Bagrut). We further show that the effect is driven mainly by students in kibbutzim that reformed to a larger degree and appears to be driven by males and by the subgroups of students who have less-educated parents. In the long term, we show that the affected students in kibbutzim that reformed early tended to expand their post-secondary schooling in academic colleges and teachers’ colleges but not in universities.

This paper contributes to two strands of the literature. From a public economics perspective, this paper sheds light on the extent to which redistributive policy influences long-run labor supply, as mediated through educational choices. While it is well known that changes in taxes affect labor supply decisions in the short run (Saez, Slemrod, and Giertz, 2009), much less is known about how such changes affect labor supply decisions in the long run, because it is difficult to determine empirically how such tax changes affect educational choices. This paper fills this gap by studying how responsive educational choices are to tax changes.

From a labor economics perspective, economic models of optimal human capital investment (Ben Porath, 1967) suggest that the level of investment in schooling is expected to increase in the perceived rate of return to education. However, despite its centrality in modern labor economics, this fundamental assumption has hardly been tested empirically, both because variation across individuals in the rate of return to schooling is rarely observed and because sharp changes in this return rarely occur.

While the pay reform in kibbutzim sharply increased the returns to schooling, it could also have influenced schooling outcomes through two other channels. The first is via the reduction in social incentives for encouraging education that had been used under equal sharing (pre reform). Under equal sharing, the kibbutz provided members with various services and communal organization, and members might have felt indebted to their kibbutz and invested in education for the common cause. Such social norms would be reduced following the pay reform. The second is via the changes in income levels of parents, which might affect education decisions they make for their children. Our paper cannot fully disentangle these mechanisms, but we provide suggestive evidence that the returns to education channel operated above and beyond the social incentives channels, and that the income channel played only a limited role.

NOTE


All works cited are provided therein.