How Important Is Human Capital for Development?

Technical Appendix

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1. Mincer Regressions

Only a subset of the Mincer regressions reported in Psacharopoulos (1994) or Bils and Klenow (2000) are usable for my purposes. Reasons for excluding individual countries or other country-specific comments are provided below.

A number of earnings regressions have implausible slope coefficients (e.g., Jamaica 1989, Italy 1987). These are dropped, if one of the following conditions is satisfied:

- Returns to education are negative or exceed 25% per year.
- The coefficient on experience is negative or that on experience squared is positive.
- Wage growth between ages 25 and 45 is negative or greater than 5-fold.

1.1 Notes on Individual Countries

1.1.1 Argentina

I drop the 1980 Mincer regressions for women of Psacharopoulos and Ng (1992) because the implied average earnings are only around 10 percent of per capita GDP. I retain the 1989 earnings regression although they predict average earnings about 3 times higher than RGDPW.

1.1.2 Australia

I drop Lorenz and Wagner's (1990) results for 1981 because the implied age-earnings profiles are implausible.

1.1.3 Austria

Lorenz and Wagner's (1990) results for 1987 are dropped because the implied age-earnings profiles are implausible.

1.1.4 Botswana

The data are taken from Lucas and Stark (1985), table A2. Since average years of schooling are reported only for both sexes combined, I assume they are the same for men and women. The sample year is reported as 1978-79; I assign this to 1979. Earnings may be overstated because of an additional control variable of unknown mean ("1/(1+years in town)").

1.1.5 Colombia

Mincer regressions for 1980 and 1989 are available from Psacharopoulos and Ng (1992). I drop the 1980 estimates for men because of their extreme slope coefficients. Earnings growth due to 20 years of experience and 12 years of schooling exceeds 30 for men, compared with 15 for 1989.

1.1.6 Costa Rica

Mincer regressions for 1981 and 1989 are available from Psacharopoulos and Ng (1992). However, I drop the 1981 estimates because of their extreme slope coefficients. Earnings growth due to 20 years of experience and 12 years of schooling exceeds 30 for men, compared with 6.7 for 1989. The exchange rate for July 1981 is taken from the IFS (18.89 per dollar).

1.1.7 Denmark

The data are taken from Rosholm and Smith (1996) for salaried workers (including unskilled workers would not make a big difference because their earnings structure is similar to that of salaried workers and they constitute only 20 percent of the population). Intercepts do not precisely represent the average worker because of several dummy variables (with small coefficients).

1.1.8 Ecuador

The data are for November 1989. I therefore use the year-end exchange rate for 1989 (221.5) as reported in the IFS yearbook.

1.1.9 El Salvador

The exchange rate for October 1990 is taken from the IFS (8.06 per dollar).

1.1.10 Greece

No comparable estimates are available for Greece. Lambpropoulos and Psacharopoulos (1992) do not have individuals with less than secondary education and use education dummies, not "years of schooling."

1.1.11 Guatemala

The PWT exchange rate for Guatemala differs from the IFS one. The data are for June 1989. I therefore use the period average exchange rate of 3.6096.

1.1.12 India

No comparable estimates are available for India. Rao and Datta's (1989) are not representative of the population (data are for one firm only and are censored at earning of $2750 per year).

1.1.13 Italy

I drop Lorenz and Wagner's (1990) results for Italy because the implied age-earnings profiles are implausible.

1.1.14 Jamaica

Estimates for Jamaica from Psacharopoulos and Ng (1992) are dropped because of implausible slope coefficients. For example, the coefficient on schooling exceeds 30 and hours are not a significant determinant of earnings.

1.1.15 Nicaragua

Estimates are taken from Behrman, Wolfe, and Blau (1985, tables 4 and A3, central metropolis). I use their exchange rate of 1/7 C$/dollar.

1.1.16 Norway

Estimates are taken from Hayfron (1998) for married men. Age is used instead of experience.

1.1.17 Pakistan

The estimates of Shabbir (1991) are implausible and the implied average earnings are an order of magnitude higher than per capita GDP. I therefore use the newer results of Shabbir (1994), which are based on a nationally representative sample.

1.1.18 Peru

The exchange rate for July 1990 (44215 per dollar) is taken from the IFS. Psacharopoulos and Ng (1992, annex 3) report average hours for males of 792 in 1985. This cannot be correct since women work 1564 hours and average hours in the entire sample are 1854. I therefore set male hours to average private sector hours of 1914.

1.1.19 Portugal

No comparable estimates are available for Portugal after 1977 (Psacharopoulos 1981). Only the estimates for men are used because the earnings equation for women uses firm experience

instead of worker experience. Kiker and Santos (1991) include too many control variable to reliable extract returns to education and experience.

1.1.20 Puerto Rico

Earnings regressions for Puerto Rico are taken from Ramos (1992) whose sample unfortunately pools men and women. I use estimates for the "never migrated" category which is the majority of the sample (table 2.6, column 2). The intercept is adjusted for the coefficient on the "never migrated" dummy.

1.1.21 Singapore

Liu and Wong (1981) use actual instead of potential experience in their earnings regressions (table 3).

1.1.22 Spain

Data for Spain are taken from Lassibille (1998), table 3. The sample consists of private sector workers. From the intercept I subtract the dummies for "married" and the selection bias term (λ_i).

The results of Alba-Ramirez and San Segundo (1995) cannot be used because it is not clear what variables are included in the regressions (years of schooling or degrees attained). The regressions also include additional control variables (such as hours worked).

1.1.23 Thailand

Average years of schooling are imputed based on Chiswick's (1976) table 1 where I assume that on average workers with "more than primary" education have 12 years of schooling.

2. References

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