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Human Capital Accumulation at Work: Estimates for the World and Implications for Development

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Human Capital Accumulation at Work: Estimates for the World and Implications for Development

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Abstract: In this paper, we: (i) study wage-experience profiles and obtain measures of returns to potential work experience using data from about 24 million individuals in 1,084 household surveys and census samples across 145 countries; (ii) show that returns to work experience are strongly correlated with economic development - workers in developed countries appear to accumulate twice more human capital at work than workers in developing countries; and (iii) use a simple accounting framework to find that the contribution of work experience to human capital accumulation and economic development might be as important as the contribution of education itself.

JEL: O11; O12; O15; O47; E24; J11; J31

Keywords: Returns to Work Experience; Returns to Education; Human Capital Accumulation; Economic Development; Labor Markets; Development Accounting

WORK IS SCHOOL

Work is just as important as school in learning and acquiring skills. This is the main conclusion of our study on *Human Capital Accumulation at Work* which grew from the background paper for the 2019 World Development Report on "The Changing Nature of Work".

The idea that work is a teacher, or that one learns and builds skills by doing, is intuitive. Factory Girls (2008) illustrates the experience of Chunming, who grew up in a rural village with little exposure to the modern world. She moved to Dongguan to take her first job in a factory that made paint for toys. The next few jobs would teach her sales, help her climb up in a multilevel marketing firm, and then to training the salesforce for a company that sold space for storing ashes of the dead. Alternatively, The Power of Habit (2012) describes how a company like Starbucks helps employees learn emotional regulation, so that after an encounter with an angry customer, they do not carry any negative emotions over to their interaction with the next person in line. The skills learned on the job are not always the same as the ones taught in school. They are, nonetheless, skills that make a person more valuable to an employer.

The average person accumulates schooling for 10 years but works up to 50 years. Therefore, human capital accumulation at work could have important implications for long-run growth (World Bank, 2018). Human capital is obtained during childhood, at school, and at work (Heckman, 2019). Previous research has highlighted the considerable returns to early childhood investments and education, suggesting that pre-school and education investments could have important effects on economic development. While a substantial literature exists on the *returns to work experience*, the contributions of experience to human capital accumulation and economic development have attracted comparatively less attention.

Our study fills this gap by studying wage-experience profiles and obtaining returns to experience (a proxy for learning at work) and education, using data for 24 million individuals from 1,084 household surveys and census samples across 145 countries comprising 94% of the world's population. We employ a battery of checks to ensure we obtain the best estimates feasible. We

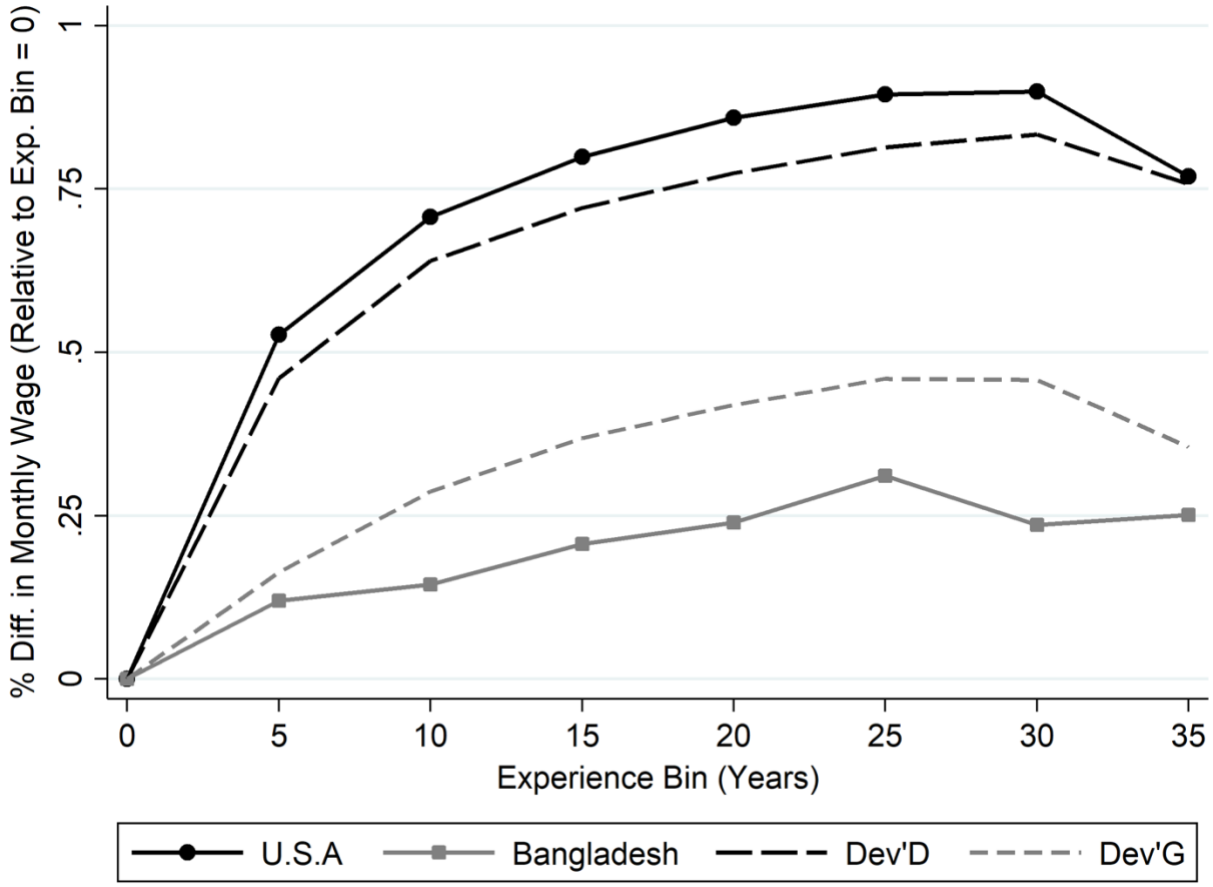
then use a simple accounting framework to calculate and compare the contribution of experience to human capital and economic development. As such, this study builds on the respective works of Bils and Klenow (2000) and Lagakos and co-authors (2018).

There are several key insights we develop.

First, although the returns to experience are lower than the returns to education, work constitutes a larger number of years than education, and thus overall the contribution of both to human capital and development are similar. Work experience directly explains about a third of cross-country differences, which is about as much as schooling.

Second, we find that returns to experience are strongly correlated with economic development and that workers in developed countries may accumulate twice more human capital at work than workers in developing countries. Figure 1 shows the wage-experience profiles of the United States vs. Bangladesh as well as developing economies vs. developed economies. The wage-experience profile is steeper for developed countries than for developing countries – a technical way of saying that workers in more developed economies earn higher wages over time than in developing economies. An interpretation of this is that workers acquire more skills at work in developed economies than in developing economies.

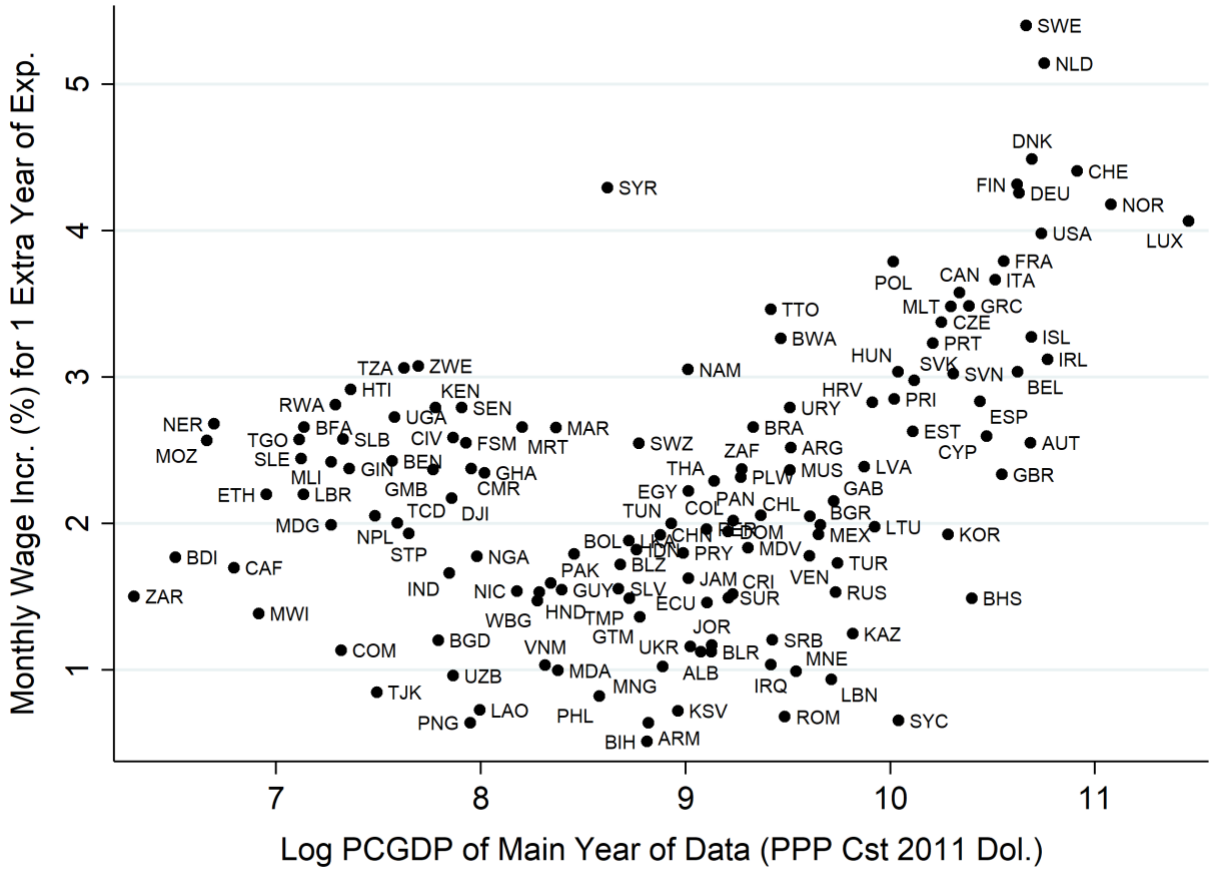
Figure 1: Wage-Experience Profiles for Developed vs. Developing Countries



Notes: This figure shows the average wage differential for the seven experience bins for the U.S., Bangladesh, developed countries (Dev'D) and developing countries (Dev'G) (using population ca. 2017 as weights). The 0 experience bin is the omitted group. Only samples from 1990 to 2016 are used.

Likewise, Figure 2 shows the strong relationship between the estimated returns to experience and economic development for 138 economies. Rich economies such as Sweden (SWD), the Netherlands (NLD) and Germany (DEU) exhibit high returns to experience while poorer economies like Burundi (BDI), Laos (LAO) and Malawi (MWI) have lower returns to experience.

Figure 2: Estimated Returns to Work Experience and Economic Development



Notes: This figure plots the relationship between the estimated returns to experience and log per capita GDP (PPP; constant 2011 USD; for the mean year in the data for each country). The sample consists of 138 countries (145 countries - 7 countries in the top and bottom 5% in estimated returns).

Our third insight is that, according to our accounting framework, the long run impact is similar whether developing countries achieve the returns to work experience or attain the same distribution of education as developed economies. However, raising returns to experience in developing economies has a faster impact, thus showing how much human accumulation at work may matter.

The finding that work is just as important for learning as schooling may have important ramifications. First, policies that improve returns to experience in developing countries could have

large aggregate effects on their economies. Presumably, such reforms would be easier than increasing the quantity of education in their society, given how difficult it is to improve education systems, especially in contexts of low financial and administrative capacity. Second, researchers should devote attention to the question of what specific reforms raise returns to experience. Third, governments should focus on creating the right conditions for job creation, especially for jobs with high returns, i.e. jobs that allow workers to acquire skills that increase their long-run productivity. Finally, the prevalence of youth unemployment and unemployment more generally as well as low labor force participation rates, as sometimes observed in emerging economies or advanced economies, means that substantial economic losses are incurred in terms of foregone human capital accumulation.

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