

## HIGHLIGHTS

### Productivity Convergence: Is Anyone Catching Up?

#### Key Points

- *Labor productivity in emerging market and development economies (EMDEs) is less than one-fifth of the advanced-economy average, while in low-income countries it is a mere 2 percent. Although productivity levels in many EMDEs have been catching up to the advanced-economy average since 2000, it would still take over a century to halve their current productivity gap.*
- *Five convergence clubs have emerged since 1970. EMDEs that have joined the highest productivity club along with advanced economies have had better education, investment, and governance characteristics, as well as more sophisticated production systems.*
- *The COVID-19 pandemic threatens the convergence of EMDEs to the productivity frontier. EMDEs need to take proactive steps to rekindle productivity by promoting higher education, supporting worker training, attracting foreign direct investment, committing to effective governance, and strengthening institutions.*

**Large productivity gaps.** There is a sizable gap in labor productivity *levels* between advanced economies and emerging market and developing economies (EMDEs), even though EMDE productivity gaps narrowed in the 2000s (Figure 1A). Since 2010, the average output per worker in EMDEs has been less than one-fifth of that in the average advanced economy. In low-income countries (LICs), that figure drops to a mere 2 percent (Figure 1B).

**EMDEs are catching up, but at a slow pace.** Since 2000, labor productivity *growth* in about 60 percent of EMDEs has exceeded the advanced-economy average. Even though convergence has improved after 2000, the pace of convergence has been slow and it would take over a century to halve the productivity gap between EMDEs and advanced economies (Figure 1C). However, the pace of convergence was higher during the 2010s in economies with stronger educational attainment, trade openness, investment, and governance (Figure 1D).

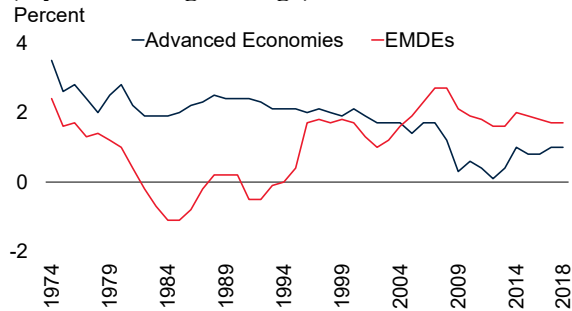
**Convergence clubs.** Since the 1970s, EMDEs have formed five convergence clubs (Figure 1E). An increasing number of EMDEs have joined the top-tier productivity club along with advanced economies. These EMDEs have had systematically better initial education levels and greater political stability, which helped them deepen the complexity of their economies, better integrate into global value chains and attract foreign direct investment (Figure 1F).

**Challenging environment: COVID-19 headwinds.** The COVID-19 pandemic has depressed commodity prices and led to deep downturns in activity and trade in many countries. Over time, it may call into question the viability of existing global value chains and some EMDEs' reliance of a few economic sectors as growth engines. Yet, it may also present opportunities as the post-pandemic global economic landscape is reshaped. To seize such opportunities, EMDEs need to rekindle productivity growth by promoting higher education, supporting worker training, attracting foreign investment, committing to effective governance, and strengthening institutions.

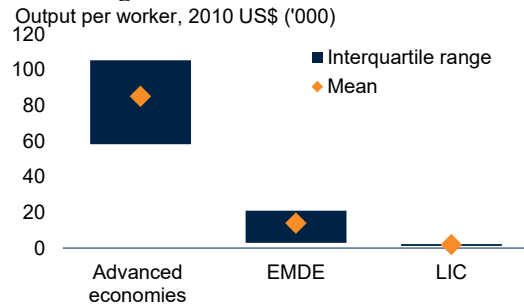
### Figure 1. Convergence

Since 2000, EMDE productivity gaps with the advanced economy average have narrowed, reflecting that productivity growth has been higher in those economies with lower initial levels of productivity. However, productivity levels in EMDEs are less than 20 percent of the advanced-economy average, and just 2 percent in LICs. The implied pace of convergence is small, suggesting that the productivity gap will halve only after 140 years. In this context, EMDEs have become part of five convergence clubs since 1970s.

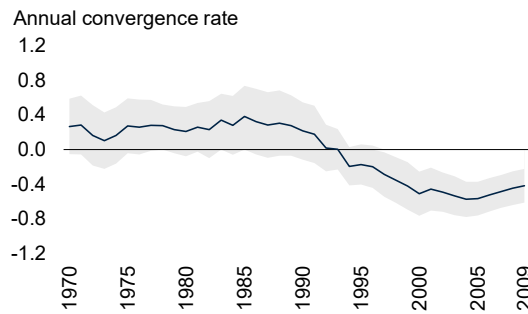
#### A. Average annual labor productivity growth (5-year moving average)



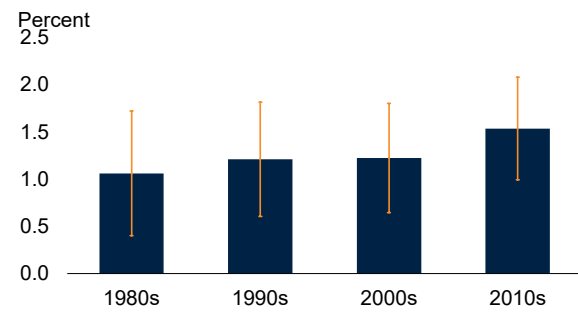
#### B. Labor productivity by country group, 2010-18 average



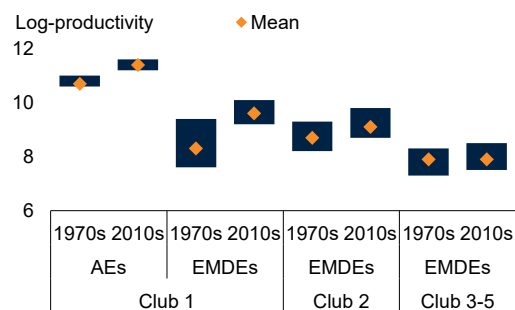
#### C. Unconditional convergence rate



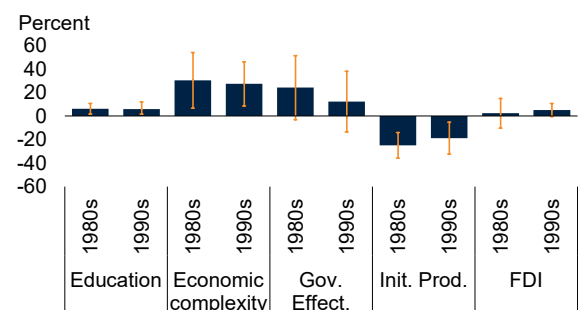
#### D. Conditional annual convergence rate: all economies



#### E. Productivity by convergence club, 1970s-2010s



#### F. Probability of EMDE joining convergence Club 1



Source: Barro and Lee (2015); Hausmann and Hidalgo (2009); Conference Board; Penn World Table; World Bank, World Development Indicators.

Note: A.B. Productivity defined as output per worker in U.S. dollars (at 2010 prices and exchange rates). Sample of 35 advanced economies and 126 EMDEs, of which 27 are LICs. EMDEs = emerging market and developing economies, LICs = low-income countries.

Panel A shows simple average of productivity growth in advanced economies and EMDEs.

C.D. Based on data for 98 economies, consisting of 29 advanced economies and 69 EMDEs. Sample excludes 6 EMDE oil exporters with productivity levels above those of the United States in the 1970s. Gray shaded area indicates 95 percent confidence intervals. Estimation in Panel C performed over 10-year rolling windows in the specification  $\log \Delta y_t = c + \beta \log y_{t-10} + \epsilon_t$  where  $y$  is output per worker. X-axis indicates start year of regression sample. Negative value indicates productivity gaps are declining at rate indicated. Regression coefficient converted to a convergence rate using the transformation  $\beta = e^{(-\lambda T)} - 1$ , where  $\lambda$  is the annual convergence rate and  $T$  is the number of years over which the regression is estimated. Annual convergence rate in Panel D implied by a cross-sectional  $\beta$ -regression in each decade which controls for country features, including average years of education, a commodity-exporter dummy, economic complexity (Hidalgo and Hausman 2009 measure), trade openness, investment as a share of GDP and a measure of political stability.

E. Based on convergence clubs estimated as in Phillips and Sul (2009). Unweighted average log-productivity levels during 1970-79 and 2010-18. Blue bars show interquartile range.

F. Marginal effect of a one unit increase in the covariates on the probability of an EMDE joining the fast productivity growth convergence Club

1. Derived using a logit model.