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ABSTRACT

Migration on the Rise, a Paradigm in Decline: The Last Half-Century of Global Mobility*

The past several decades have witnessed a rebirth of global labor mobility. Workers have begun to move between countries at rates not seen since before World War One. During the same period, economists' study of international migration has been framed by a particular textbook model of location choice. This paper reviews the evidence on the economic causes and effects of global migration during the past half century. That evidence falsifies most of the core predictions of the old model. The economics of migration will regain vitality and relevance by discarding and replacing its outworn paradigm.

JEL Classification: F22, J61, O15

Keywords: labor, immigration, emigration, selection, impact, wages, employment, roy model, production, globalization, history

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Since the 1980s, workers have moved between countries at rates not seen since before World War One. And this time has been different: migrants today are far more likely to come from Latin America, Asia, and—increasingly—Africa. What were some key causes and effects of this transformation? And what do these say about the textbook models that remain bread-and-butter for migration economics?

1 The Old Model of Location Choice

Also since the 1980s, the economics of migration has been dominated for decades by a core, elegant, textbook model of the causes and effects of workers' location choice (e.g. Borjas 2020). As workers in the Roy (1951) model choose an occupation, so they are assumed to choose a country of residence, where they swell a labor aggregate in a fixed production function with diminishing returns. These assumptions usefully predict some facts at partial equilibrium (Ariu 2018): poor countries tend to experience net emigration while rich countries experience net immigration, but not everyone migrates and not all at once.

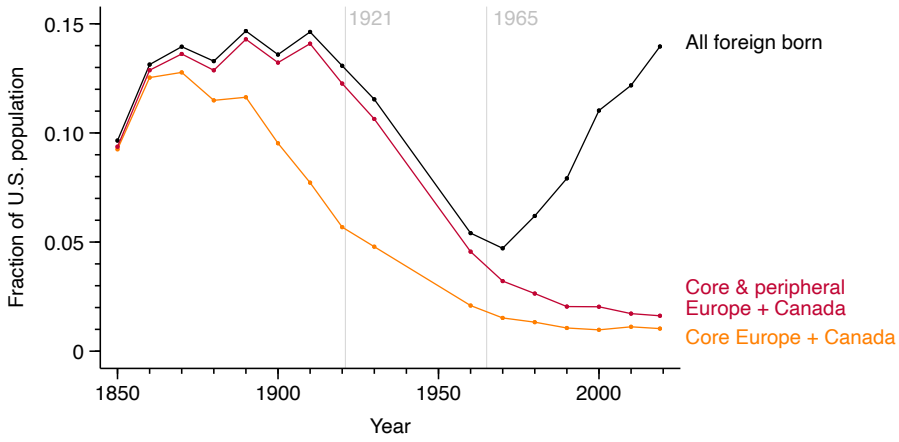
The resurgence of global migration offers a chance to assess that model by testing its numerous other, less obvious predictions.

The model predicts *causes*: Rising trade and capital flows should substitute for migration, and vice versa, via factor price equalization. Economic development in poor countries should reduce the number of migrants, just as higher wages for hunters reduce the number of fishers. Migration today should reduce migration tomorrow, as the gain is arbitraged away.

The model also predicts *effects*: Typical migrants from poor, unequal countries should be the least productive workers, as they have the most to gain. Native workers should be directly harmed, through labor-market competition and fiscal redistribution—until capital accumulation merely leaves them where they started (but leaves capital owners even wealthier). Skill-selective immigration restrictions should simply shift the harm to the world's most vulnerable, impoverishing poor countries by 'brain drain'.

In short, the still-dominant model predicted that the resurgence of global migration would be

Figure 1: The changing prevalence and composition of U.S. immigrants, 1850–2019.



Sources and methods in the Appendix.

fundamentally an *effect* of poverty in migrant-origin countries and a *cause* of poverty in destination countries (if low-skill) or origin countries (if high-skill). "[O]ne begins to wonder," write Card and Peri (2016, 1348), "why countries ever decide to have any immigrants". Alternatively, one could begin to wonder when it is time to discard a model so broadly and directly falsified by the evidence.

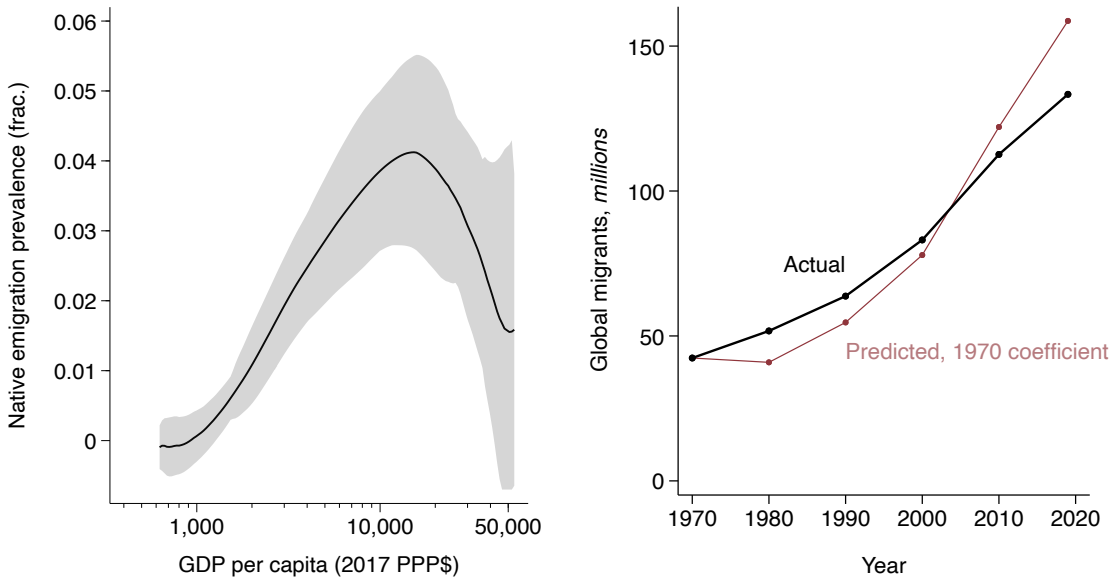
2 Causes of Rising Global Mobility

Three times more people live outside their country of birth now than 52 years ago, with a much larger share from developing countries (IOM 2022). United States immigrant stocks exemplify this sea-change (Figure 1). In 1970, 4.7 percent of the U.S. population was born abroad; today, 14.0 percent (similarly to 1860–1910). In 1970, just 32 percent of U.S. immigrants were born outside Europe and Canada; today, 88 percent.

The core causes of that transformation falsify the old location-choice model.

Did the advance of migration result from a retreat of its theoretical substitutes—trade and capital flows? Just the opposite. Global flows of goods and capital exploded during the same years.

Figure 2: Economic development is sufficient to explain the rise of migration after 1970.



(a) *In 1970, origin-country income vs. emigrants to rich countries (cross section)*

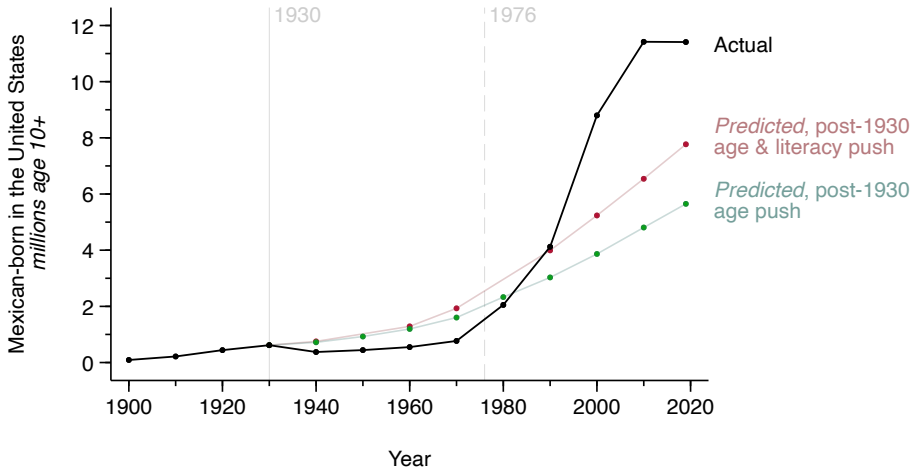
(b) *Migration post-1970, actual vs. predicted by development alone (panel a)*

Sources and methods in the Appendix.

Greater flows of goods and capital between countries have caused *more* migration between them (Campaniello 2014; Bang and MacDermott 2019). Secure contracts, worker matching, technology transfer, service provision, and other taproots of specialized exchange continue to require in-person interaction (e.g. Clemens 2013).

Did migration arise from failed economic development in poor countries? Just the opposite. Global migration surged from the European Core in the mid-19th century, the European Periphery around the turn of the 20th century, and from Latin America and Asia in the second half of the 20th (Figure 1). These surges coincided with the *arrival* of modern economic growth and each region's *ascent* out of poverty. Economic development has generally required—and caused—structural changes in demography, urbanization, human capital, and international linkages that have complemented migration flows (Hatton and Williamson 1998; Williamson 2006, 2015; Clemens 2020).

Figure 3: Mexico-U.S. migration prevalence has been driven by development in Mexico.



Sources and methods in the Appendix.

For this reason, perhaps counterintuitively, economic development in migrant-origin countries can explain the resurgence of global migration *entirely*. Figure 2a shows the cross-country correlation in 1970 between real income per capita and the prevalence of emigration to high-income countries. Now, naively suppose that correlation reflected some necessary or sufficient causal relationship. As those countries developed 1970–2019, what rise in migration prevalence would we have predicted? The striking answer is: all of it (Figure 2b).

In the broadest terms, migration in each modern era has been an unmistakable sign that development is happening, not failing. Migration has lagged most where development has lagged most, shown most starkly by the relative absence of Africans in the richest countries (Hatton and Williamson 2011; Hanson and McIntosh 2016).

Did initial waves of migration reduce the incentive for further migration, by spatially equilibrating the labor market? Just the opposite. Migration tends to beget even more migration, for generations. Prior migrants raise the net benefits and incidence of new migration by providing information, capital, and inspiration (Munshi 2020)—even if equilibration eventually affects small countries after many decades.

Policy mattered, of course. The large dip in overall migrant prevalence in Figure 1 owes much to strict quotas imposed by the United States starting in 1921 (with similar measures in Canada, Australia, and elsewhere) only relaxed in the late 1960s. Hatton and Williamson (2005, 179) attribute the closure to politically-powerful organized labor fearing competition from immigrants with decreasingly specialized skill. De facto exclusion of almost all potential first-generation immigrants deemed ethnically 'Asian' (from U.S. citizenship 1871–1952, from entry 1917–1965) certainly constrained migration from Asia. Dismantling that policy regime enhanced migration after 1970.

But relaxing policy barriers was not paramount. Africans faced no exclusion from U.S. citizenship after 1871 and no meaningful entry quota from then until 1921. Haitians faced no bar to citizenship or entry from 1871 until 1968. Neither group immigrated in substantial numbers during those 'open' years. That began *after* 1968.

The clearest case is Mexicans and Central Americans, who never faced a citizenship bar and faced no immigration quota at all *before* 1968, but immigrated in substantial numbers only *after* 1968. Mexicans only faced a tightly binding quota after 1976—which is when they *began* migrating in large numbers. And there was no major divergence of average incomes between U.S. and Mexico during this period: the U.S.-Mexico ratio of average real income per capita at purchasing-power parity was 3.3 in both 1976 and 2016 (Bolt et al. 2018). If it was not receding barriers and not wage divergence, what provoked the move?

A central answer is economic development. In Figure 3, the thick black line shows the actual number of Mexican born (age 10+) residing in the United States since 1900. Suppose that the age-specific tendency of the Mexican born to migrate had never changed *since 1930*, before they faced major immigration barriers (Kosack and Ward 2014; Lee et al. 2020). But suppose that Mexicans' age structure changed as it did—a demographic transition part-and-parcel of development. What prevalence of Mexican migration *in 2019* would we predict by fixing the age-specific tendency to migrate *in 1930*? 49 percent of it (in green). Fixing the migration tendency by age *and literacy*—since the young and literate were more likely to migrate—this rises to 68 percent (in red).

The principal explanation for rising migration from Mexico was Mexico's emergence from poverty—

hand in hand with a demographic transition (Hanson and McIntosh 2010) and vast expansion of basic schooling. People from Central America are following them now, decades later, as similar *advances* in development arrive there.

Policy mattered, of course, as a causal mediator for deeper forces. The United States, Canada, and Australia opened up at roughly the same time due to strong domestic demand at a time when many poor countries were decolonizing and beginning to develop, while the 'old' migrant origin countries were well past that (Hatton and Williamson 2005, 220–222). In the UK, similar forces explain the tripling of immigration from developing countries in the decade before 2004 (Glover et al. 2001, 10–13). The UK's 2004 opening to the EU accession countries caused more, but their accession was substantially caused (as ever) by their development.

3 Effects of Rising Global Mobility

The effects of the post-1970 rebirth of migration, like the causes, generally falsify the old location-choice model of migration.

Did the large rise in migration from the developing world broadly substitute for workers in the destinations? No. As several prior reviews have found, Edo et al. (2020, 1367) conclude that "the impact of immigration on the average wage and employment of native-born workers is zero or slightly positive in the medium to long term". The half-century of closure that preceded 1970 caused *lower* native incomes (Tabellini 2019; Sequeira et al. 2019; Abramitzky et al. 2022).

That empirical result *requires* that greatly expanded migration since 1970 had numerous other effects as separately documented in the literature: It stimulated natives' demand, investment, trade, innovation, entrepreneurship, occupational upgrading, and education. The partial-equilibrium location-choice model assumes all of these effects to be zero. Only that very strong, blanket assumption requires that "the labor demand curve is downward sloping" (Borjas 2003).

For example, there is now ample evidence that firms switched production technologies to make more intensive use of migrant labor, in the last half-century as they did a century ago (Clemens et al. 2018; Lafortune et al. 2019). In models that allow for this possibility alone, the labor demand

curve can slope upwards (e.g. Acemoğlu 2002).

Migrants *did* substitute for non-emigrants in the countries they left, typically enough for their departure to raise wages there (Mishra 2015). Migrants remitted so much money back to the developing world that by the end of the 20th century it surpassed governments' total development assistance. This has been insufficient to spark short-run economic growth (Clemens and McKenzie 2018), but often financed human capital investment affecting long-run growth (Dinkelman and Mariotti 2016; Khanna et al. 2020).

Did migration since 1970 typically select for the least-productive workers? No. Across the developing world, emigration exhibits strong positive selection on determinants of income, both observed (Hanson 2010; Abramitzky and Boustan 2017; Lazear 2021) and unobserved (Clemens and Mendola 2020). Barriers before 1970 worked poorly to induce positive selection. Chinese exclusion in the U.S. 1882–1965, explicitly designed to encourage positive selection, did the opposite—because it deterred talented workers sensitive to denigration (Chen 2015).

Did more migration broadly substitute for other forms of globalization, through factor-price equalization? Certainly not. More migration has *raised* the volume and scope of trade (Rapoport 2018), and flows of capital and technology (Kerr 2008; Gollin and Lange 2013; Burchardi et al. 2018; Mayda et al. 2019).

Recent migration has likely caused moderate rises in domestic income inequality at the destinations. It has raised pretax wages more for the most-educated natives than for the least (Ottaviano and Peri 2012), and eroded natives' willingness to redistribute (Alesina et al. 2021), but very little of the overall rise in inequality can be attributed to immigrant wage competition at the low end of the distribution (Goldin et al. 2007; Autor et al. 2008).

By helping reallocate labor to more productive places, the resurgence of global migration raised global economic product (Clemens 2011; Dustmann and Preston 2019) and modestly reduced *global* inequality (Milanovic 2015; Clemens et al. 2019). These effects have been small because migration is small: All the migration since 1970 has led the migrant fraction of the world to rise just one percentage point.

4 A Copernican moment for migration economics

There is now broad agreement that the evidence of the last half century falsifies the old model. The evidence "appears to be at odds" with the model's predictions about the causes of migration (Abramitzky and Boustan 2017, 1323). The model is "not a very good description" of the economic effects of migration (Banerjee and Duflo 2019, 27). The model fails to "take seriously any of the ideas in modern growth theory" (Card and Peri 2016, 1346). The model yields empirical estimates that are not "meaningful and policy relevant", but are instead "misleading and hard-to-interpret" (Dustmann et al. 2016, 52).

It is a model in decline, a model in crisis. One response is to layer on additional assumptions, such as crafting an "augmented Roy model" with network effects (Munshi 2020) or linear (not logarithmic) utility (Grogger and Hanson 2011). But such tweaks amount to what pre-Copernican astronomy did with 'epicycles' and 'deferents'. These were additional assumptions layered onto the old theory of the cosmos—geocentric with circular orbits—to defend it from being empirically falsified when planets moved in the 'wrong' direction, seasons had the 'wrong' lengths. What was required instead was to uproot and discard the core assumptions.

Since "it takes a theory to kill a theory," (Samuelson 1951, 323), what would a better model look like? The evidence from the rebirth of global migration points the way. A more useful set of assumptions about migration from developing countries would model it as an investment in human capital, the unfinished project begun by Sjaastad (1962).

Few would entertain for a moment a theory predicting that rising investment in basic education in a poor country would arise from reduced trade or capital investment; or result from rising poverty; or be deterred by earlier cohorts getting educated. Few would insist that theory requires rising basic education to harm the wages of the educated; or select for the least-talented children (who have the most to gain!); or reduce the incentive for capital investment. But a partial-equilibrium Roy model of workers choosing between the fixed wages of an 'educated' worker and an 'uneducated' worker would predict all of those things.

A useful model of education would predict the opposite on every count: that investment in

education is the lifeblood of specialization, which is self-reinforcing, makes workers better off at all education levels, rises (not falls) with wealth, raises the return to other investments, selects for the most-talented, and can increase inequality, but enriches the economy as a whole unless it is forcibly prevented. Analogously, a model of migration barriers as barriers to human capital investment—not barriers to partial-equilibrium occupation choice—could be much more useful to economists studying immigration now.

Labor remains very, very far from 'globalized'. The share of people who live in their birth country is currently 96.4% (IOM 2022), barely down from 97.5–98.0% in 1910. Yet the absolute number of people migrating to live outside their countries of birth rose more than sixfold over the same long century.[1] The share and composition of immigrants in the main rich destinations has shifted sharply in the last fifty years.

This was not principally caused by a grand opening of policy. Rather than broadly open or close their doors, migrant-destination countries since 1970 have raised the cost and qualifications for entry (de Haas et al. 2018). By roughly 1970, most quotas based explicitly on ethnicity had given way to tightly binding quotas based on education and occupation. The rapid rise of development around the world has meant that more and more people from developing countries can pay the cost or meet the qualifications, a process that has snowballed as migrant networks from historically underrepresented countries have gained a foothold. This is very likely to continue, given shrinking labor forces in many migrant-destination countries and continuing development and demographic transition in the developing world, particularly in Africa (Hatton and Williamson 2011; Pritchett and Hani 2020).

In short, why was migration reborn? Fundamentally it was a product of rising capability, nutrition, and education in developing countries—supporting all of those, in turn, as another form of human capital. It was a product of and cause of greater trade, investment, and innovation—as another form of human capital. It was a product of prior migration itself, which snowballs at first—as another form of human capital. What we have seen since 1970 is not a much more open world, but a more developed world, and thus a more mobile world. We will understand it better, as astronomers understood the heavens, by discarding outworn assumptions. ■

[1] This accounts for the formation of new countries since. Sources and calculations are presented in the Appendix.

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Online Appendix

"Migration on the Rise, a Paradigm in Decline: The Last Half-Century of Global Mobility"

Michael A. Clemens — January 2022

A0.1 Rise in global migration prevalence since 1910

Between 1910 and 2022, the number of people living outside their country of birth or nationality rose from around 36 million to 281 million (Ferenczi (1937, 28), an increase of 7.8 times; IOM 2022, 40) that is, from 2.0% to 3.6% of all people (using the 1910 world population estimate of 1.77bn from Klein Goldewijk et al. 2011). This change does not account for the rising number of countries, from 97 counted by Ferenczi in 1910 to 193 United Nations member states in 2022; but even the sharp rise to 166 countries by 1930 was accompanied with a *fall* to 29 million global migrants. Since 1930, the largest bias from country creation arose from the partition of the Soviet Union and South Asia, which overnight created (respectively) about 30 million and 8 million additional people living outside their (former) country of birth UNDESA (2004, vii, 23). Even adjusting for these biases, a conservative estimate is that the number of international migrants rose by a factor of more than six between 1910 and 2022.

A0.2 The changing prevalence and composition of U.S. immigrants since 1850

From Gibson and Jung (2006) and Ruggles et al. (2021, ACS 2010 5yr & 2019 1yr); U.S. population from Haines and Sutch (2003) 1850–2000 and from U.S. Census Bureau 2010–2019. 'Core Europe' is all of the British Isles, Germany, France (with Monaco), Benelux, and Switzerland (with Lichtenstein). 'Canada' includes negligible number from Bermuda, Greenland, and Miquelon.

A0.3 Decomposition of the rise of emigration prevalence to rich countries since 1970

Native emigration prevalence is the fraction of people born in each country who reside in a high-income country (as defined by the World Bank) that is not their country of birth. Panel (a) shows a cross-section of 154 countries in 1970 in a local-linear regression with bandwidth 0.8 natural log points and Epanechnikov kernel, 95% confidence interval in gray. A linear regression with the data in Figure 2 panel (a) yields slope 0.0120 (robust s.e. 0.002774) and constant term −0.07729 (robust s.e. 0.02165). Panel (b) uses that regression to predict emigration prevalence from each origin using actual economic growth at the origin, summing across all origins to yield a global stock of predicted emigrants in rich countries, and compares it to the true stock in each year. Data from Clemens (2020).

A0.4 Decomposition of Mexico-U.S. migration 1900–2019

Predicted migrants due to "age and literacy push" in year t are $\hat{m}_t = \sum_a \sum_\ell \bar{\phi}^{1930}_{a,\ell} n^t_{a,\ell}$ where $n^t_{a,\ell}$ is the number of Mexican-born residing in either Mexico or the United States in year t with age $a \in \{10\text{–}14, 15\text{–}19, 20\text{–}24, \ldots, 80\text{–}84, 85+\}$ and literacy $\ell \in \{0, 1\}$, and $\bar{\phi}^{1930}_{a,\ell}$ is the fraction of each age-by-literacy group that was residing in the United States in 1930. Predicted migrants due to "age push" are $\hat{m}_t = \sum_a \bar{\phi}^{1930}_{a} n^t_{a}$. Data on Mexican-born in Mexico from INEGI *Estadísticas Históricas de México 2014* (1930–2010), *Censo de Población y Vivienda 2020*, and MPC (2020) (literacy by age group 1930–1950 estimated by literacy rate among corresponding age cohort in 1960); U.S. data from Ruggles et al. (2021). 'Literacy' in U.S. census post-1930 defined as in the Mexican census: attainment of *any* primary schooling.