LABOR MARKET DYNAMICS AND DEVELOPMENT*

KEVIN DONOVAN
WILL JIANYU LU
TODD SCHOELLMAN

We provide new evidence on how labor market dynamics vary with development. We build a new data set consisting of harmonized microdata from rotating panel labor force surveys covering 80 million people from 49 countries. Labor market flows, such as the job-finding or employment exit rate, are higher in developing economies. These higher flows largely reflect a slippery job ladder: workers transition frequently to and from marginal employment without climbing to or persisting in better-paying jobs. Subsistence self-employment and different patterns of selection for wage workers each play a role in our findings and are useful avenues for future theories of labor market frictions. *JEL Codes:* O1, J6.

I. INTRODUCTION

A dynamic labor market is an essential component of a well-functioning economy. It allows people to find work and then climb the job ladder by moving to better-paying jobs. These job-job transitions are an important direct contributor to life cycle wage growth (Topel and Ward 1992; Hahn, Hyatt, and Janicki 2021). They also provide workers with an incentive to acquire skills, further boosting wage growth (Engbom 2022). At the aggregate level, a dynamic labor market speeds the reallocation of workers toward more productive jobs and sectors, which boosts GDP (Ljungqvist and Sargent 1998).

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A prominent concern among policy makers is that labor markets in developing countries are failing in these objectives: they do not create the right jobs or reallocate workers to them, and this has important consequences for poverty and growth (World Bank 2013). The evidence so far is tangential. For example, we know that workers' wages grow half as much over the life cycle in developing economies, but not whether this is a failure of the job ladder (Lagakos et al. 2018; Jedwab et al. forthcoming). We also have substantial evidence that there are large, persistent gaps in wages and labor productivity between sectors and regions, but again we do not know whether this stems from labor market frictions (Caselli 2005; Lagakos 2020). Research on this topic faces an important roadblock: we have little systematic evidence on labor market dynamics outside of developed countries.[1] This article provides evidence on how labor market flows and the job ladder vary with development. It documents the sources of these differences and considers their implications for theories of labor market frictions in developing countries.

We build a new data set to answer these questions. It contains microdata from the rotating panel labor force surveys of 49 countries around the world. The rotating panel feature allows us to track workers for two to three consecutive quarters and measure labor market flows by changes in workers' labor force statuses. We harmonize labor force status to be comparable across countries, as well as a number of important covariates, including demographics, occupation, earnings, sector, and firm size. Our data set is large (80 million people tracked for two to three quarters) and has a broad scope in terms of geography (49 countries across five continents) and development (GDP per capita differs by a factor of 34 between the richest and poorest countries). These features allow us to estimate and decompose labor market dynamics in a consistent way across a much broader set of countries than previous work.[2]

1. Recent work has made substantial progress in characterizing how cross-sectional outcomes vary with development (Gollin 2008; Bick, Fuchs-Schündeln, and Lagakos 2018; Feng, Lagakos, and Rauch 2022).

2. Existing work provides cross-country comparisons in Europe (Petrongolo and Pissarides 2008), Latin America (Bosch and Maloney 2010), or Africa (Rud and Trapeznikova 2021), though these vary in coverage and time horizon. Hobijn and Şahin (2009) and Elsby, Hobijn, and Şahin (2013) use aggregate data to construct flows, which allows broader coverage (up to 27 countries) at the cost of limiting the ability to further explore disaggregated results.

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Our first contribution is to show that standard labor market flows are all higher in developing economies. The employment exit rate, job-finding rate, and job-job transition rates are all twice as high in developing countries as compared to developed economies, while the occupational switching rate is four times as high. We use our harmonized measures of demographics to show that these results do not reflect composition effects: similar differences apply even for people with a fixed age, gender, and education.

Our second contribution is to study the sources of these differences. Doing so is a useful step toward thinking about whether the flows constitute faster reallocation of labor up the job ladder or to more productive jobs. The literature provides two reasons this might be plausible. First, recent evidence shows higher growth rates of GDP per capita for developing areas (Kremer, Willis, and You 2021; Patel, Sandefur, and Subramanian 2021). Higher flows could be a natural consequence of higher growth rates, for example, as workers reallocate during structural transformation (Herrendorf, Rogerson, and Valentinyi 2014). Second, higher flows could even cause growth. A consistent finding of the literature that studies labor market flows among developed economies is that higher flows go hand in hand with more flexible labor market institutions, which allow the economy to respond more quickly to shocks and incentivize human capital accumulation (Hopenhayn and Rogerson 1993; Ljungqvist and Sargent 1998; Jung and Kuhn 2014; Engbom 2022).

We start by revisiting whether labor market flows are the result of more flexible labor market institutions. We confirm the literature's finding—but only when we focus on developed economies. Among this subsample, higher required severance payments are associated with lower employment exit rates, and higher minimum wages are associated with lower job-finding rates. However, when we repeat the analysis for our full sample of countries, we find that the estimated effect of labor market institutions flips sign and becomes indistinguishable from zero. Higher flows in developing economies are not the result of more flexible labor market institutions.

Instead, we find that higher flows in developing economies are accounted for by flows into and out of marginal jobs. We define three groups of marginal jobs: self-employment, informal wage work, and low-earnings wage work. Already when we decompose employment into self-employment and wage work, we find that the higher propensity for those in developing economies to

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enter and exit self-employment accounts for nearly all of the higher aggregate job-finding rate and about half of the higher employment exit rate. The other half of the differences in the employment exit rate come from wage work. We show that informal and low-earnings wage work account for most of this remaining difference.[3] Put differently: labor market flows for workers with formal, above–median earnings wage work are similar around the world.

In principle, high flows into and out of marginal employment could reflect that workers in developing economies use marginal jobs as an entry point to a rapid climb up the job ladder. We use the subset of countries where we can track workers for three consecutive quarters to show that this is not the case. Although this panel dimension is short, it nonetheless reveals that workers in developing economies fall down or off the job ladder at extremely high frequencies. For example, the nonemployed in developing economies who move into self-employment are a staggering 24 percentage points more likely to return to nonemployment just one quarter later, as compared with people making the same transition in developed economies. Workers who move to a higher-wage job are 39 percentage points more likely to return to nonemployment or fall to a lower wage level just one quarter later. Higher labor market flows in developing economies largely represent a slippery job ladder, not faster reallocation of workers to productive jobs or growing sectors.

Our third and final contribution is to use our database to guide theories of the labor market frictions that generate a slippery job ladder rather than beneficial reallocation of labor. We first note that our results are inconsistent with modeling labor market frictions as a cost to switching jobs or moving. Costs of this type are widely used because they can explain the existence of large and persistent gaps in wages across regions, occupations, or industries in developing economies because they make workers less willing to move, which prevents wage convergence.[4] However, our results show that labor market flows are actually much higher in developing areas.

3. These findings complement an active literature that shows the importance of informality for other outcomes, such as wages, and incorporates it into models suitable for policy evaluation (Albrecht, Navarro, and Vroman 2009; Meghir, Narita, and Robin 2015; Ulyssea 2018; Dix-Carneiro et al. 2021).

4. See reviews by Lagakos (2020) for spatial wage gaps and Donovan and Schoellman (forthcoming) for sectoral wage gaps.

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Instead, we provide two important findings for this literature. First, self-employment fills a different role in the developing world.[5] It is a closer substitute to unemployment, used to allow people to earn income while searching for wage work in countries without unemployment insurance. We provide new quantitative evidence on this point by showing that the self-employed and the unemployed switch to wage work at similar rates and earn similar wages after switching in developing economies. This implies that they are close substitutes using the logic of Flinn and Heckman (1983). By contrast, the patterns for the two groups in developed economies are different. This finding helps rationalize our finding of high flows into and out of self-employment. It suggests that future work should be skeptical of treating self-employment and wage work symmetrically, which has important implications for key objects, such as the job-finding rate (Guner and Ruggieri 2022).

Second, we provide new evidence that wage workers are selected differently in developing economies. We estimate wages and employment exit rates as a function of tenure and show that wages rise more rapidly and exit rates fall more rapidly in developing economies. The former effect is particularly surprising given that we reconfirm the finding in the literature that wages rise less with experience in developing economies (Lagakos et al. 2018). The most promising explanation of these results is that they represent differences in how matches are selected: developing economies have more initial low-quality matches but also more rapid exit from them. These findings greatly narrow the set of theories that are consistent with the cross-country patterns in labor market flows which we uncover.

II. Data Overview

Our results come from a new harmonized data set constructed from microdata from rotating panel labor force surveys of 49 countries around the world. This section provides an overview of how

5. These findings extend the careful work of Breza, Kaur, and Shamdasani (2021) on self-employment in India to a broader set of countries. It complements an existing literature that uses surveys to document that the self-employed in developing economies are more likely to report being unable to find a wage job as their motivation for self-employment, a phenomenon that has been labeled subsistence self-employment (Schoar 2010; Poschke 2013).

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we identify and collect the underlying data sets, how we clean and match the data, and how we harmonize key responses. The Online Appendix contain further details.

Our goal is for our data set to be as comprehensive as possible. We identify the official labor force survey for all countries, meaning the survey used to generate officially reported labor force indicators, such as the unemployment rate. Many countries use or have used a rotating panel design, which surveys a household for multiple periods. We read documentation files and searched the literature to identify as many of these countries as possible.

We restrict our attention to the subset of countries with rotating panel labor force surveys that provide the original microdata with consistent identifiers so that we can match respondents over time. This restriction rules out countries that treat the microdata as confidential or release only anonymized versions without household or individual identifiers. We also require that the data allow us to match people for at least two consecutive quarters. This restriction allows us to focus on using the largest possible comparable subset of surveys, including many countries where households are followed for only two consecutive quarters, as well as some more complicated designs.[6]

Our data set covers 49 countries from five continents and spans a total of 628 country-years. Online Appendix A.1 contains a list of covered countries, references for the data sources and providers, and basic summary information. We merge the data set with annual PPP GDP per capita from World Bank (2021) to study how labor market dynamics vary with development. Our data set covers a wide range of development, from GDP per capita below $5,000 (India, Nicaragua, Philippines) to more than $50,000 (United States, much of Europe). We often refer to countries toward the bottom and top of this GDP per capita range as developing and developed, respectively, as a shorthand. Our data set does not cover the very poorest economies, such as the World Bank's 28 "low-income economies." New data from one of these countries—Rwanda—provides preliminary evidence that labor market flows are even higher there than among the poorest countries in our data set, reinforcing our results. See Online Appendix B for details.

6. For example, some European countries include households for six consecutive months; the United States includes households for two four-month spells. Each allows us to create a quarterly (three-month) match.

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We focus throughout on urban areas because some countries do not collect data on rural areas. In Online Appendix B we show that our results apply also in rural areas for the countries for which we have data. We focus on the population aged 16–65 throughout. Doing so mitigates concerns about cross-country differences in labor market institutions, such as child labor laws or retirement policies. In addition, some countries collect limited data on people over age 65.

II.A. Matching, Weighting, and Seasonality

In this section we describe how we deal with three important issues in constructing the data set from the underlying microdata. First, we have to match observations over time to construct labor market flows. In most countries we match people on household and person identifiers. We keep the matches that are unique and have consistent responses for age and gender across quarters, in line with standard practice (Madrian and Lefgren 2000). In a few countries, we have household but not consistent person identifiers. For these countries, we keep only people that have a unique, exact match on household identifier, age, sex, and education. Our main data set includes 80 million people matched for two consecutive quarters. We also construct a second data set of workers matched for three consecutive quarters. Details on sample size by country and which countries permit matching across three quarters are available in Online Appendix A.1.

The second important issue is reweighting to adjust for nonresponse. All of our surveys sample dwellings and interview whoever inhabits those dwellings at the appropriate times. Thus, people who move dwellings between quarters cannot be matched. This fact has the potential to bias our estimates to the extent that moving (or other forms of nonresponse) is correlated with outcomes of interest, such as finding a job. We follow the typical approach in the literature of adjusting the provided sample weights so that the matched and unmatched samples have similar observable characteristics (e.g., Fujita and Ramey 2009). We focus on education, labor force status, age, and gender as the most important dimensions. See Online Appendix A.2 for details.

Third, we adjust for seasonality in labor market flows by estimating and removing a multiplicative quarterly fixed effect separately for each country and flow. Although seasonality is an important feature of the data, the extent is modest relative to

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cross-country trends, and so our findings are robust to alternative procedures. See Online Appendix A.3 for details.

II.B. Harmonizing Variables

We harmonize a wide range of variables by building the relevant crosswalks across the various surveys to allow comparisons across countries and time. Not all variables are available in all countries; see Online Appendix A.4 for information on availability. For the most part it suffices to describe relevant variables as we proceed. One exception that warrants further discussion is labor force status. We reconstruct a measure of labor force status using standardized definitions applied to the original microdata for all countries and years. This step is necessary because the provided labor force status variable is constructed using a definition that varies somewhat across countries and time.[7]

We first categorize people as employed or not employed. The employed are those who are engaged in the production of goods and services that are counted in GDP.[8] They include those who work for someone else (wage and salary workers) and the self-employed. The self-employed includes own-account workers, employers, and family members who work for a family business (such as a farm) without pay. Most surveys in developing economies include detailed questions about whether the respondent raises crops or livestock for his or her own consumption, operates a small business, or produces small handcrafts to ensure that they capture most self-employment. We follow the U.S. convention of requiring at least 15 hours of unpaid family work to be counted as self-employed to minimize the concern that we might artificially inflate flows between employment and nonemployment among such workers in developing economies.[9]

7. Hussmanns (2007) reviews the ideal definitions and some of the conceptual and practical issues that arise and lead countries to deviate. The most important deviation is that many countries do not require workers to meet the "search" criteria to be counted as unemployed.

8. In technical parlance, those who produce goods and services that fall inside the production boundary of the System of National Accounts (Hussmanns 2007). The goods and services may be directly measured if they are sold in markets or included via estimation if they are not.

9. Unpaid family workers are a small share of the self-employed: they represent 3.9%, 15.3%, and 20.9% of all self-employment for the median, 90th, and 99th percentile across country-year observations.

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People who are not employed are categorized either as unemployed or inactive (out of the labor force). We define unemployment consistently as people who are not employed but who satisfy the standard three-part test: (i) they want a job, (ii) they have actively searched for a job in the past four weeks, and (iii) they are available to start a job.[10] People who fail any of these three questions are labeled inactive. There is a long-standing concern that the distinction between unemployment and inactivity may not be behaviorally meaningful or may be subject to significant classification error. We find evidence that the two states are less distinct in developing economies. Our baseline approach is to report statistics for the two states separately but ignore reported flows between unemployment and inactivity. Our results are robust to pooling them together into a single state of nonemployment; see Online Appendix A.5 for further details.

III. Aggregate Labor Market Flows

Our first main finding is that labor market flows are negatively correlated with development. We focus on six measures of labor market flows that have been discussed extensively in the literature. We start with the employment exit and job-finding rates. Each is constructed using changes in reported labor force status between the first and second quarter a person is in the sample. Following the previous work that considers both unemployment and inactivity, we construct two employment exit rates, capturing the share of initially employed workers who transition to unemployment or to inactivity in the second quarter (Elsby, Hobijn, and Şahin 2015). Likewise, we construct two job-finding rates, capturing the share of the unemployed or the inactive who transition to employment in the second quarter.[11]

The fifth conventional flow is the job-job transition rate, which is the share of the initially employed who change jobs in the subsequent quarter. In practice, the set of workers who change jobs comprises three underlying groups: workers who switch from

10. The exact search period varies slightly but is generally four weeks, 30 days, or a month. The only significant outlier is India, which asks about search over the past week.

11. The European Union publishes estimates of flows constructed from the Labour Force Survey. Although the details of the data construction vary slightly, Online Appendix C.2 shows that their estimates are similar to ours.

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self-employment to wage work, workers who switch from wage work to self-employment, and wage workers who switch employers.[12] The first two groups can be measured using change in labor force status between the first and second quarter. The third group is measured using reported job tenure: workers who are employed for wages in both quarters and report tenure less than three months in the second quarter are inferred to have changed employers.[13] Because we do not have data on tenure in all countries, the job-job transition rate can be measured for fewer countries than the other flows.

Finally, we measure the occupational switching rate. We harmonize occupations to the one-digit International Standard Classification of Occupations 2008 (ISCO-08) scheme. The occupational switching rate is the share of workers employed for two consecutive quarters who report different occupations. Occupational switching is of interest in its own right in models of learning and human capital accumulation (e.g., Kambourov and Manovskii 2009). It is also useful as an alternative measure of the rate at which workers make meaningful employment transitions that is less subject to concerns about classification error of labor force status.

Figure I plots these six key labor market flows against development. This figure adopts the common format we use throughout the article, so some explanation is in order. We average all outcomes up to the country-year level, so each observation (marker) is a country-year. We plot outcomes of interest against PPP GDP per capita, which is displayed using a log scale. We also compute and plot the cross-year average for each country, which we label with three-digit country codes. Finally, we include in all scatter plots a best-fit line of a regression of the data points against log GDP per capita.

The main result from Figure I is that all six flows are negatively correlated with development. Visually, the magnitude and strength of the relationship varies somewhat across the flows. It is strongest for the job-job transition rate and occupational

12. We abstract from the possibility that workers can switch between self-employed jobs, which anyway cannot be measured using available data.

13. The U.S. CPS data are an outlier. We use the dependent coding available since 1994 to classify job-to-job transitions as workers who work for wages in months 1 and 4, but report changing employer during months 2–4, following Fallick and Fleischman (2004).

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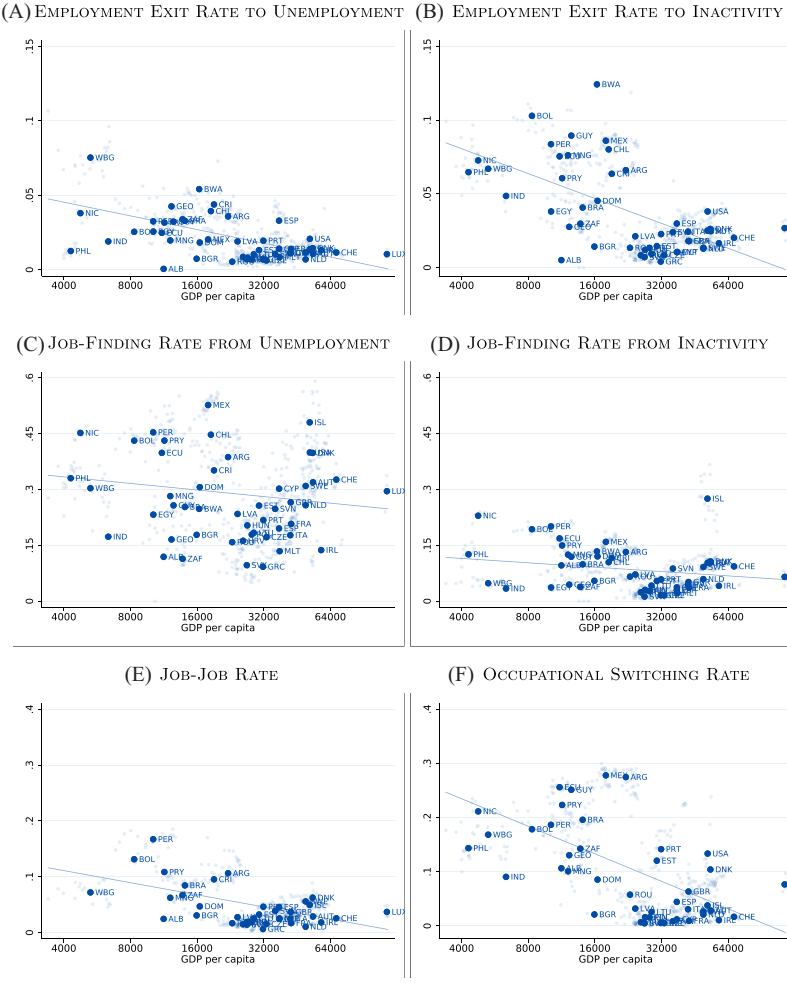

FIGURE I

Quarterly Transition Rates

switching rate and weakest for the job-finding rates, particularly the job-finding rate from unemployment.

Table I, Panel A shows the results from regressing the labor market flows on log GDP per capita. We confirm the general pattern of Figure I. All six flows are negatively related to development. The relationship is statistically significant except for the two job-finding rates. The differences are also economically large.

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TABLE I
LABOR MARKET FLOWS AND DEVELOPMENT

	Exit rate		Job-finding rate		Job-job	Occupational
	To U	To N	From U	From N	rate	switching
Panel A: All countries						
Log GDP per capita	−0.013***	−0.024***	−0.025	−0.017	−0.031***	−0.073***
	(0.005)	(0.003)	(0.022)	(0.014)	(0.011)	(0.013)
Observations	598	598	598	598	494	553
R-squared	0.322	0.367	0.019	0.037	0.258	0.316
Sample average	0.022	0.037	0.292	0.085	0.050	0.105
Panel B: Rich countries						
Log GDP per capita	0.004	0.014***	0.192***	0.072**	0.023***	0.021
	(0.002)	(0.004)	(0.047)	(0.028)	(0.007)	(0.018)
Observations	370	370	370	370	366	358
R-squared	0.029	0.250	0.329	0.186	0.229	0.025
Sample average	0.013	0.019	0.251	0.065	0.032	0.051

Notes. Standard errors are clustered by country. U stands for unemployment, N for inactivity. * $p < .1$, ** $p < .05$, *** $p < .01$.

Returning to the trend lines plotted in Figure I, employment exit rates, job-finding rates, and job-job transition rates are roughly twice as high in developing economies, while occupational switching rates are roughly four times as high.

These facts are new to the literature. Most existing work focuses on the relationship between labor market flows and labor market institutions among developed economies. Even if they did estimate the correlation between labor market flows and development among this set of countries, they would find a different result. In Table I, Panel B we show the results of running the same regression of flows on log GDP per capita using only the subset of developed economies (the United States, United Kingdom, Switzerland, and the European Union). For this subset, the correlation is positive and statistically significant.

Documenting the pattern between labor market flows and development is our first contribution. Our second contribution is to investigate the source of this trend difference. To be clear, we do not claim that GDP per capita has a direct, causal effect on labor market flows. Instead, we have in mind that the change in labor market flows is likely caused by the broader process of development—the regular changes to an economy's workforce, production units, labor markets, and even the structure of society more broadly (Kuznets 1973; Barro and Lee 2013; Herrendorf, Rogerson, and Valentinyi 2014).

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Our goal is to identify which of the many changes involved in the development process explain this aggregate correlation. Although some of the changes have been proposed and studied separately, we have little understanding of their relative importance in the aggregate. We view this as an important exercise in its own right. It is also useful for showing that high labor market flows in developing economies are driven by labor market frictions and for providing guidance on theories of these frictions. We start with two factors that have received attention in developed economies: labor market institutions and workforce composition.

III.A. Institutions, Workers, and Labor Market Flows

As noted, much of the existing literature on labor market flows focuses on developed economies. In these countries, it documents an important role for labor market institutions. Specifically, the main finding of this literature is that flexible labor market institutions are associated with more labor market flows, which in turn provide workers incentives to accumulate human capital (Engbom 2022) and generate faster reallocation of labor in response to shocks (Hopenhayn and Rogerson 1993; Ljungqvist and Sargent 1998; Jung and Kuhn 2014). We use our larger data set to reexamine the relationships between institutions and flows among developed economies and then investigate it for the first time in a broader sample of countries.

We focus here on two specific measures of labor market institutions, each taken from the World Bank's Labor Market Regulations data set and then standard normalized to permit comparison of coefficients across samples and variables. Required severance payments measure how many weeks of salary an employer has to pay a worker with one year of tenure if they are fired; this is a relevant measure of institutions for separations. The minimum wage, expressed relative to the average wage, captures how much firms have to pay their workers; this is a relevant measure of institutions for hiring. Patterns are similar if we use instead a country's overall Doing Business Index score, which we interpret as a broad summary measure of policies and institutions that might affect labor market dynamics; see Online Appendix C.3 for details.

We regress each labor market flow on the corresponding labor market institution. We exclude occupational switching rates from this analysis because it has not previously been studied in the literature on labor market institutions and it is not clear which

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TABLE II
LABOR MARKET FLOWS AND INSTITUTIONS

	Exit rate		Job-finding rate		
	To U (1)	To N (2)	From U (3)	From N (4)	Job-job rate (5)
Panel A: All countries					
Regulation	0.001	0.007	0.006	0.002	−0.002
	(0.002)	(0.006)	(0.014)	(0.007)	(0.005)
Observations	523	523	134	134	460
R-squared	0.005	0.068	0.002	0.001	0.002
Sample average	0.021	0.033	0.284	0.083	0.048
Panel B: Rich countries					
Regulation	−0.001	−0.003***	−0.039***	−0.014***	−0.005***
	(0.001)	(0.001)	(0.010)	(0.004)	(0.001)
Observations	344	344	90	90	344
R-squared	0.009	0.136	0.127	0.089	0.117
Sample average	0.013	0.018	0.248	0.066	0.030

Notes. U stands for unemployment, N for inactivity. The Regulation variable is measured as a z-score. For exit and job-job, we use the severance requirement (in weeks of salary) for an employee with one-year tenure. For job-finding rates, we use the ratio of the minimum wage to the average worker value added. Both are measured by the World Bank Labor Market Regulations data set. The sample size is smaller for job-finding rates because the variable is only available for 2014–2018. Standard errors are clustered by country. * $p < .05$, ** $p < .01$, *** $p < .001$.

institution would be most pertinent. Table II contains our main results on the role of labor market institutions. Panel A shows the results for all countries and Panel B shows the results only for developed economies. Starting with Panel B, we see that our results confirm the findings of previous work: labor market institutions have an economically and statistically significant effect on labor market flows. Furthermore, the direction of the effect is consistent with theory: severance payments lower the employment exit and job-job transition rate, while minimum wages lower the job-finding rate. Among developed economies, labor market institutions are an important contributor to labor market dynamics.

This raises the question of whether labor market institutions help explain the differences in labor market flows between developing and developed countries. This could be the case, for example, if our findings simply reflected that countries with developing economies systematically had more flexible labor market institutions that promoted labor reallocation. In Panel A we show the results when we use our entire sample. We find that in this case, each of the five coefficients flips sign and becomes statistically

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insignificant. Although labor market institutions help understand flows among developed economies, they do not help understand differences in flows between developing and developed economies.

A second possible explanatory factor is composition effects. For example, the working-age population in poorer countries is generally younger and less educated. Existing research shows that younger and less educated people have higher rates of labor market flows in the United States (Davis, Faberman, and Haltiwanger 2006; Wolcott 2021). We explore how far such composition effects can go in accounting for our findings.

We do so using a three-step procedure. In the first step, we estimate a linear probability model that relates transition rates to observable characteristics of people for each country in our sample. Let T_{ict} be an indicator variable taking the value 1 if person i in country c and year t experiences a given transition T. We estimate

$$T_{ict} = X_{ict}\beta_{ct} + \varepsilon_{ict},$$

where X_{ict} is a vector of observable characteristics. We control for the full interaction of age, gender, education, and occupation, with variables harmonized and grouped into categories (six 10-year age bins, two bins for education, and one-digit occupations). Occupations are not reported for many or all nonemployed people in many countries, so when decomposing the job-finding rate we use only age, education, and gender. β_{ct} is the estimated average group-specific transition rate for country c in year t, and ε is a mean zero error term.

In the second step, we decompose the difference in the average transition rate between country c in year t and the overall sample average into two terms:

$$\overline{T}_{ct} - \overline{T} = \underbrace{\hat{\beta}_{ct}(\overline{X}_{ct} - \overline{X})}_{\text{composition effect}} + \underbrace{\overline{X}(\hat{\beta}_{ct} - \hat{\beta})}_{\text{country effect}}.$$

Here we use the bar notation to indicate sample averages and the hat notation to indicate estimates. The first term captures the importance of composition effects, measured as the difference in average characteristics between country c in year t and the sample average, weighted by $\hat{\beta}_{ct}$. The second term captures the importance of country, measured as the difference in transition rates weighted by the sample average population characteristics.

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TABLE III
DECOMPOSITION OF THE RELATIONSHIP BETWEEN FLOWS AND DEVELOPMENT

	Exit rate		Job-finding rate		Job-job	Occupational
	To U	To N	From U	From N	rate	switching
Composition	0.41	0.09	0.04	–0.07	0.35	–0.10
Country	0.59	0.91	0.96	1.07	0.65	1.10
Total	1.00	1.00	1.00	1.00	1.00	1.00

Notes. U stands for unemployment, N for inactivity. The table reports the share of the estimated relationship between labor market flows and development that is attributable to composition and country effects for six flows. See the text for observable characteristics included by flow.

In the third step, we regress both parts of the decomposition on log GDP per capita. The sum of the two coefficients is equal to the total estimated relationship between labor market flows and development. We divide through by this total effect so that our results represent the share of the total correlation that is accounted for by composition effects and country effects. The results are given in Table III for the six labor market flows. The main finding is that most of our results are driven by country effects, meaning that observably similar workers experience more frequent transitions in developing economies. The exact share ranges from one-half to one, with a simple average of three-quarters.[14] This finding implies that we should look again to alternative factors that might explain high labor market flows in developing economies.

IV. MARGINAL EMPLOYMENT AND LABOR MARKET FLOWS

We find that marginal employment—self-employment, informal work, and low-earnings wage work—plays a central role in labor market dynamics in developing economies, in two senses. First, in this section we show that flows into, out of, and between marginal jobs account for most of the higher flows in developing economies. This finding implies that marginal employment is the source of high labor market flows in developing economies. Second, in Section V we show that developing economies are characterized by a slippery job ladder: workers flow into and out of marginal employment without climbing to persistent, high-paying

14. Interested readers can find the underlying data on average labor market transition rates by country, year, and select characteristics, including demographics, occupation, and job tenure, with the replication materials for this article.

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TABLE IV

LABOR MARKET FLOWS BY SELF-EMPLOYMENT AND WAGE WORK

	From self-emp.		From wage work	
	To U	To N	To U	To N
Panel A: Exit rate				
Log GDP per capita	−0.014***	−0.038***	−0.014***	−0.017***
	(0.005)	(0.006)	(0.005)	(0.003)
Observations	598	598	598	598
R-squared	0.298	0.363	0.350	0.274
Sample average	0.017	0.052	0.023	0.032
	To self-emp.		To wage work	
	From U	From N	From U	From N
Panel B: Job-finding rate				
Log GDP per capita	−0.044***	−0.027***	0.017	0.010
	(0.008)	(0.007)	(0.019)	(0.010)
Observations	598	598	598	598
R-squared	0.401	0.365	0.013	0.024
Sample average	0.051	0.028	0.241	0.057
	From self-emp.		From wage work	
	To W		To SE	To new W
Panel C: Job-job rate				
Log GDP per capita	−0.034***		−0.028***	−0.015
	(0.009)		(0.004)	(0.012)
Observations	598		598	476
R-squared	0.176		0.531	0.097
Sample average	0.071		0.023	0.037

Notes. SE stands for self-employment, W for wage work, U for unemployment, and N for inactivity. Standard errors are clustered by country. * $p < .1$, ** $p < .05$, *** $p < .01$.

work. Combined, these findings suggest that labor market flows in developing economies are not a consequence of growth and do not aid growth.

We start by showing that marginal employment can account for much of the higher labor market flows in developing economies. First, we decompose flows into and out of self-employment versus wage work in Table IV. Panel A shows the results for employment exit rates. They are negative and statistically significant for all four flows. The correlation is the same for flows from self-employment or wage work to unemployment but higher for flows from self-employment to inactivity. Panel B shows the results for

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job-finding rates. The correlation for flows to self-employment are still negative and statistically significant. The correlation for flows to wage work is weakly positive and not statistically significant. This shows that all of the differences in job-finding rates between developing and developed economies are due to differences in finding self-employment. Finally, Panel C shows the results for job-job transition rates. Again, flows are negative and statistically significant for job-job flows to or from self-employment.[15] They are negative but weaker in magnitude and not statistically significant for flows between wage jobs. The importance of self-employment for job finding and job switching is clearly related to the fact that self-employment is a larger share of employment in developing economies (Gollin 2008), although the causality between the two is not obvious.

In the last section we used accounting results to show that our aggregate trends do not reflect workforce composition effects. We repeat the analysis separately for flows into and out of wage work and self-employment. For wage workers we can extend the analysis to account for employer characteristics. Two characteristics are available in a large number of countries in our data set: industry and firm size (number of employees).[16] Haltiwanger, Scarpetta, and Schweiger (2014) show that these two characteristics account for about half of the cross-country variation in the rate of job reallocation across firms (including due to entry and exit). Table V shows the results. Country effects continue to account for the majority of our trends, even when we decompose self-employment and wage work and account for firm characteristics for wage workers.

Although self-employment plays an important role for labor market flows, there is still a significant correlation with development for employment exit rates from wage work. Much of this

15. A potential concern is that these flows may be inflated by classification error for workers whose jobs are on the boundary between self-employment and wage work. However, the share of workers who switch between self-employment and wage work and change occupations at the same time also shows a negative and statistically significant relationship with GDP per capita: self-employment to wage has slope −0.012 (clustered std. err. = 0.003), while wage work to self-employment has slope −0.008 (clustered std. err. = 0.001).

16. Harmonized industry contains 15 codes following Minnesota Population Center (2019). Most countries bin firm size; our harmonized firm size contains three bins, for 1–4, 5–9, and 10 or more employees. These characteristics are not collected for the self-employed in most countries.

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TABLE V

DECOMPOSITION OF THE RELATIONSHIP BETWEEN FLOWS AND DEVELOPMENT, BY SELF-EMPLOYMENT AND WAGE WORK

	From self-emp.		From wage work	
	To U	To N	To U	To N
Panel A: Exit rate				
Composition	0.14	0.10	0.45	0.07
Country	0.86	0.90	0.55	0.93
	To self-emp.		To wage work	
	From U	From N	From U	From N
Panel B: Job-finding rate				
Composition	–0.08	–0.10	0.26	0.08
Country	1.08	1.10	0.74	0.92
	From self-emp.		From wage work	
	To W		To SE	To new W
Panel C: Job-job rate				
Composition	–0.12		0.02	0.79
Country	1.12		0.98	0.21

Notes. SE stands for self-employment, W for wage work, U for unemployment, and N for inactivity. The table reports the share of the estimated relationship between labor market flows and development that is attributable to composition and country effects for each flow. See the text for observable characteristics included by flow.

trend can be accounted for by marginal wage jobs: informal wage work and low-earnings wage work. We define a job as formal if a worker reports that their employer pays into a social benefits scheme (e.g., public pensions) on their behalf, and informal if their employer does not. These questions are only asked in developing economies, so we can only distinguish formal and informal jobs there. Figure II presents an overview of the data. Most countries with GDP per capita less than about $30,000 ask questions that allow us to differentiate formal from informal wage jobs. For these countries we plot the employment exit rate from all wage work and from formal wage work.

There are two main findings in this figure. First, the employment exit rate for formal wage workers is lower than the exit rate for all wage workers in countries for which we can compute both. Second, the differences are quantitatively meaningful. A useful comparison point here is developed countries with small informal economies; for these countries, the employment exit rate from all wage work is probably close to the exit rate from formal

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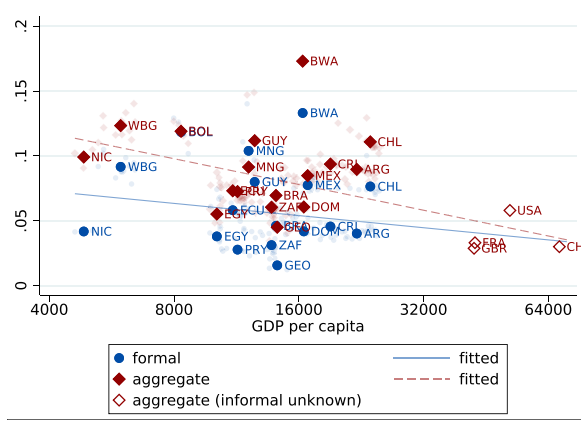

FIGURE II

Employment Exit Rate for Wage Workers by Formal Status

The figure plots the employment exit rate for all wage workers employed in formal jobs or all wage workers. Trend lines assume aggregate exit rates equal formal exit rates in France, the United Kingdom, Switzerland, and the United States.

wage work. We include four countries with a small informal economy in Figure II: France, the United Kingdom, Switzerland, and the United States. If we treat the employment exit rate from these countries as the employment exit rate from formal wage work, then we find that the correlation of the exit rate with development is just 44% of the aggregate correlation, implying that controlling for formal status accounts for more than half of the overall pattern. Similar patterns apply if we decompose exit to unemployment from exit to inactivity; see Online Appendix D.1.

Finally, we look directly at earnings for wage workers. Figure III, Panel A provides suggestive evidence that low-earnings wage work may constitute another form of marginal employment. It plots the employment exit rate from wage work by initial earnings decile for four selected countries. Throughout, we define earnings deciles at the country level, so that 10% of each country's wage workers are in the bottom earnings decile. The data show large differences that are particularly pronounced at the bottom of the earnings distribution. For example, the highest earners in the United Kingdom exit employment at a rate of 1.3%, compared with 1.7% in Peru. In the lowest decile, it climbs to 7.5% in the United Kingdom and 27.6% in Peru or

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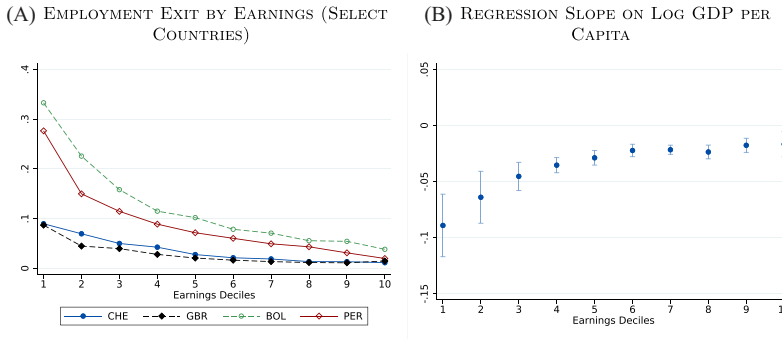

FIGURE III

The Relationship between Employment Exit Rates and Earnings

Panel A plots the separation rate by earnings decile for four select countries, averaged over available years in each country. Panel B plots the semi-elasticity of the separation rate from wage employment with respect to GDP per capita by earnings decile. The bars represent the 95% confidence interval of that slope, derived from standard errors clustered at the country level.

31.2% in Bolivia. An alternative way to see the findings is that the workers in the bottom earnings decile in the United Kingdom and Switzerland exit at the same rate as those in the middle of the Bolivian or Peruvian earnings distributions.

To show that this point applies more broadly, we estimate the semi-elasticity of the employment exit rate with respect to GDP per capita by earnings decile using all available country-years. Figure III, Panel B plots the coefficients and the 95% confidence intervals against the earnings decile. The main takeaway is that employment exit rates are more strongly (negatively) correlated with development for lower earnings deciles. The semi-elasticity is four times larger for the bottom decile compared with the top decile of the earnings distribution. We focus on pooled employment exit rates for compactness and use earnings for data availability reasons, but we show in Online Appendix D.2 that similar results apply for separation rates, job-job transition rates, and both employment exit rates separately, and that they also apply if we use wage deciles rather than earnings deciles for countries for which that is possible.

Together, these findings provide new evidence that marginal employment drives much of the cross-country differences in labor market flows. Cross-country differences in labor market flows are concentrated: flows into, out of, and between self-employment,

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informal wage work, and low-paid wage work are strongly correlated with development, whereas flows into and out of high-paying, formal wage work are not. These facts are important for understanding labor market dynamics in developing economies. However, they do not yet address whether higher labor market flows in developing areas are a consequence or source of growth, because in principle these rapid movements could represent workers quickly climbing on and then up the job ladder. We address the role of marginal employment in the job ladder next.

V. Marginal Employment and the Job Ladder

Section IV shows that marginal employment accounts for much of the higher labor market flows in developing countries. This finding by itself does not speak to the underlying question of whether higher flows are generated by labor market frictions versus whether they are a consequence of growth. For example, it could be that workers in developing economies take a marginal job as an entry point to the labor market but rapidly climb to growing, high-paying sectors. In this section, we use the subset of 28 countries for which we can track workers for three consecutive quarters. We use this additional quarter to study whether marginal employment is persistent or helps workers climb the job ladder to better jobs. Although this panel dimension is short—just one additional quarter of information—it turns out that this is sufficient to make clear that the answer to both questions is no.

We begin again with self-employment. We consider workers making three types of transitions involving self-employment between the first and second quarter: finding self-employment from unemployment (U,S); finding self-employment from inactivity (N,S); and moving up the job ladder from self-employment to wage work (S,W). We then study the outcomes these workers experience in their third quarter in the sample. We focus on which subsequent outcomes are more likely in developing versus developed economies.

The results are shown in Figure IV. The three rows correspond to the three groups of interest. The four columns correspond to the four possible outcomes for the third quarter: unemployment (U), inactivity (N), self-employment (S), or wage work (W). In each cell, we show the coefficient and standard error from a regression of the share of workers who experience the corresponding transition on log GDP per capita. For example, the −0.051 in the upper

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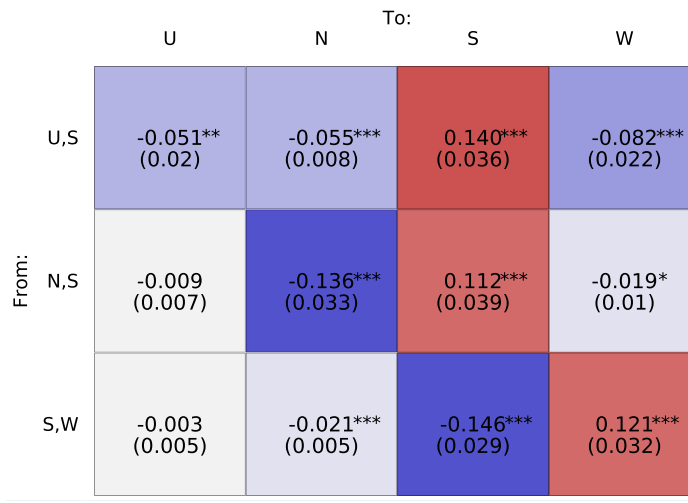

FIGURE IV

Three-Quarter Flows and Self-Employment

The figure plots the coefficient estimates from a regression of the relevant flow against log GDP per capita. Standard errors clustered at the country level are in parentheses, with statistical significance given by *, **, and *** at 10%, 5%, and 1%. S = self-employed, W = wage worker, U = unemployed, N = inactive. The magnitude of the estimate is color-coded from red (positive correlation, more likely in richer countries) to blue (negative correlation, more likely in poorer countries).

left cell says that among people who move from unemployment to self-employment, the share who return to unemployment for the third quarter is negatively and statistically significantly correlated with development. To aid in interpretation, we use shading to denote the magnitude of the effect; lighter shades are closer to zero, while darker shades are further away. In the online version, colors show the sign, with blue indicating outcomes more likely to occur in developing economies and red indicating outcomes more likely to occur in developed economies.

Figure IV reveals two important additional results about the role of self-employment in developing economies. The first result, shown in the top two rows, is that workers who transition from unemployment or inactivity to self-employment in developing countries are much less likely to persist in self-employment and more likely to transition to any other labor force status. The log of the 95-5 ratio of GDP per capita is 1.9 for our sample. Thus, for example, someone who transitions from unemployment to

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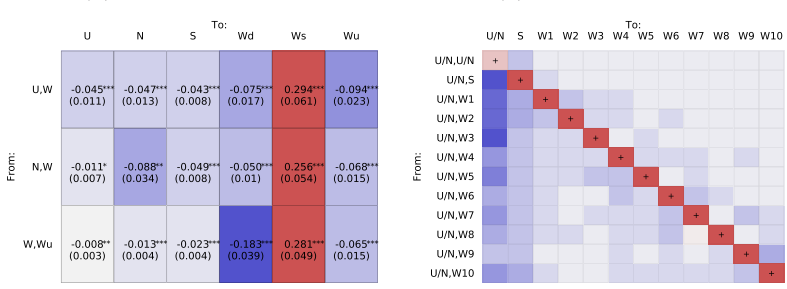

FIGURE V

Three-Quarter Flows and Low-Earnings Work

self-employment in the poorest countries is 10 percentage points more likely to return to unemployment after just one additional quarter, as compared to someone who makes the same transition in the richest countries ($= 1.9 \times -0.051$).

The second result, shown in the bottom row, is that self-employed workers who transition to wage work are less likely to persist in wage work in poorer countries. Again, the effect is not just statistically significant but economically large: the estimated trend suggests that these workers are 28 percentage points more likely to return to self-employment after just one additional quarter. This finding shows that self-employment is much less likely to help workers climb the job ladder to persistent wage work in poorer countries.

We use the same approach to examine the role of low-paying wage work in the job ladder in developing economies.[17] Our first results in Figure V, Panel A parallel those from Figure IV. We focus on three sets of workers: those who transition from unemployment to wage work; those who transition from inactivity to wage work; and those who are employed for wages for two consecutive quarters and move up to a higher earnings decile in the second quarter (W,Wu). Again we examine which outcomes are more likely in the subsequent, third quarter in developing versus developed economies. For people who remain in wage work, we further distinguish between those who move to a lower earnings

17. We focus on earnings rather than formality here because data on earnings are available for most countries, whereas data on formality are not available for developed economies.

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decile (Wd), those who remain in the same earnings decile (Ws), and those who move to a higher earnings decile (Wu).

The first two rows of Figure V, Panel A shows that workers who find wage work in developing countries are much less likely to persist in that job. They are more likely to move up the job ladder to a higher-earnings wage job. However, they are much more likely to fall down the job ladder to a lower earnings decile or to fall off it entirely. The third row shows subsequent outcomes for workers who do manage to climb the job ladder to a higher earnings decile. Workers in poorer countries are much less likely to persist in that job. As a summary statistic, we pool together transitions to unemployment, inactivity, self-employment, and lower-earning wage work and call these transitions falling down or off the job ladder. If we regress this joint probability on log GDP per capita, we find the coefficient is -0.221 (std. err. $= 0.038$), -0.213 (std. err. $= 0.050$), and -0.240 (std. err. $= 0.043$) for the three rows, respectively. These results suggest that workers in developing countries are 42, 40, and 46 percentage points more likely to fall down or off the job ladder than those in the developed economies.

Figure V, Panel B shows that these patterns represent a generic trend in developing economies. The new feature of this figure is to show how workers transition among earnings deciles in developing versus developed economies. To keep the table compact, we focus on people who are nonemployed (pooling unemployment and inactivity) in the first quarter. Each row shows a possible labor force status in the second quarter, with the possibilities consisting of nonemployment, self-employment, or wage work at 10 earnings deciles (W# is wage worker, earnings decile #). Finally, the columns shows a possible labor force status in the third quarter, with the same set of possibilities. We regress the share of workers experiencing each transition against log GDP per capita as in the other figures. Rather than displaying all 144 coefficients, we use shading to indicate the magnitude of the effect and plus signs to indicate positive effects (again, shaded red in online publication; no plus sign and shaded blue in the online publication indicates a negative effect).

This figure conveys clearly that people who find any type of work are more likely to persist in that work in developed economies (the solid red diagonal). This finding holds equally for self-employment and for wage work at any earnings decile. By contrast, people who enter almost any type of work in developing economies are much more likely to return subsequently to

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nonemployment. Those who remain in wage work are more likely to move up or down the earnings distribution in a roughly symmetric fashion.

It is worthwhile to pause and take stock of these results. In Section IV, we showed that flows into, out of, and between marginal jobs in countries with developing economies accounts for most of their higher labor market flows. Here, we show that there is no evidence that these flows allow workers to find or persist in higher-paying work. Even with just one additional quarter of data, we can show that workers in developing countries who find self-employment are 20–28 percentage points more likely to return to nonemployment, and workers who find wage work or climb the wage job ladder are 40–46 percentage points more likely to fall back down it. These findings imply that higher labor market flows are not a result of growth and do not aid growth; they do not even enable workers to persist in jobs for two consecutive quarters. This is the phenomenon we label the slippery job ladder.

VI. Implications for Labor Market Frictions

So far we have shown that higher labor market flows in developing economies reflect the effects of a slippery job ladder: workers transition frequently into and out of marginal employment without climbing the job ladder to persistent, high-paying work. These findings support the view that labor markets in developing economies are failing to create good jobs or reallocate workers to them. In this section we use our database to provide additional results that can guide theories of the labor market frictions that impede the movement of workers.

We start by noting that our results are inconsistent with the most common way of modeling labor market frictions, which is to treat them as large costs to switching jobs or moving. Costs of this type have been used because they can explain the existence of large and persistent wage gaps across regions, occupations, or sectors in developing economies. They do so by making workers less willing to move, which prevents wage convergence. However, our results show that labor market flows are actually much higher in developing economies.

Instead, our findings suggest two important new directions for this literature. First, we build on an existing literature by providing harmonized, quantitative evidence that self-employment fills a different role in developing economies. It is

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what is often called subsistence self-employment, or disguised unemployment—a way for workers to earn income while searching for wage work, rather than a job that is intended to be persistent. Second, for wage workers, we provide new evidence that wages rise faster and employment exit rates fall faster with tenure in developing economies. We argue that these should be interpreted as the result of differential selection, which implies that the set of newly formed matches is of lower quality in developing economies, but that there is also a more rapid process of winnowing out low-quality matches. These findings are consistent with certain theories of composition effects or theories of endogenous dynamic selection.

VI.A. Subsistence Self-Employment in Developing Economies

Our results in Section IV show that self-employment plays an important role in aggregate flows, because it accounts for all of the higher job-finding rate and half of the higher employment exit rate in developing economies. Here we use our data to provide support for a theory that helps rationalize these findings, which is that self-employment plays a different role in developing economies. It is a substitute for missing unemployment insurance, allowing workers to search and earn some income simultaneously (Breza, Kaur, and Shamdasani 2021; Herreño and Ocampo 2023).

Previous empirical work on this hypothesis has drawn on detailed evidence on seasonal self-employment in India (Breza, Kaur, and Shamdasani 2021) or cross-country survey evidence on workers' self-reported motivations for being self-employed (Schoar 2010; Poschke 2013). We contribute to this literature by providing harmonized, quantitative evidence on the extent to which self-employment and unemployment are substitutes for a wide range of countries. We also contribute by documenting how much income self-employment provides in the countries where it functions as a replacement for missing unemployment insurance.

We start by comparing the propensity of the self-employed and the unemployed to transition to wage work. We build on the idea of Flinn and Heckman (1983) that if people in each group are equally likely to transition to wage work, then there is no meaningful behavioral difference between them. More generally, the relative wage work–finding rate is a measure of how distinct self-employment is from unemployment. Figure VI, Panel A plots the probability of transitioning from unemployment to wage work

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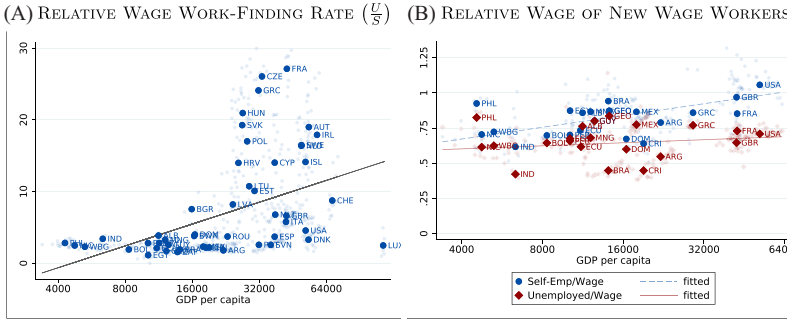

FIGURE VI

Comparing Self-Employment and Unemployment

TABLE VI

RELATIVE WAGE JOB–FINDING RATES AND WAGES UPON ENTRY

	Unemployed / Self-employed	Inactive / Self-employed
Panel A: Relative wage work–finding rate		
Log GDP per capita	4.394***	1.377***
	(0.987)	(0.393)
Observations	569	598
R-squared	0.185	0.155
Sample average	7.024	1.774
Panel B: Relative wage, for previously:		
Log GDP per capita	−0.079***	−0.095***
	(0.024)	(0.030)
Observations	235	233
R-squared	0.100	0.141
Sample average	0.777	0.785

Notes. Column headings show the employment status of individuals the quarter before they enter wage work. Standard errors are clustered by country. Samples sizes differ by panel because some country-years do not report earnings. * $p < .1$, ** $p < .05$, *** $p < .01$.

relative to the probability of transitioning from self-employment to wage work. In many poor and middle-income countries, the self-employed are almost as likely to transition to wage work as the unemployed. In the United States, the unemployed are five times as likely to transition to wage work, and the ratio is even higher for many European countries. Table VI, Panel A shows the results from the regressions of relative wage work–finding rates on log GDP per capita; the trend line is economically and statistically

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significant.[18] The second column shows that a similar result applies if we instead compare the self-employed to the inactive. The fact that the self-employed and unemployed find wage work at a similar rate in developing economies already suggests that the two are less distinct there. As a second source of evidence, we compare the wages that the self-employed and the unemployed receive when they obtain wage work. Figure VI, Panel B shows the wages of new wage workers who were previously self-employed and previously unemployed for each country. All wages are normalized by the average wage of continuing wage workers. In rich countries, the previously self-employed earn a higher wage than the previously unemployed, which is consistent with the view that the self-employed have a better outside option and so decline more marginal matches or have better bargaining power when negotiating wages. By contrast, in developing economies this gap is smaller, suggesting again that self-employment and unemployment are similar (in terms of outside options) in developing countries. Table VI, Panel B plots the estimates from the regression line shown in Figure VI, Panel B; the trend line is statistically and economically significant. Again, the second column shows that a similar result applies if we instead compare self-employment to inactivity.

These findings have important implications for modeling self-employment in developing economies. Self-employment is a distinct activity from wage work, so grouping them together may be misleading. It is a closer substitute to unemployment that allows people to earn an income while also searching for work in countries without unemployment insurance programs. Given this, it may be more appropriate to group self-employment with unemployment, as in Guner and Ruggieri (2022).

We also contribute to the literature by providing evidence on the value that self-employment provides as a source of temporary income during search in a large number of developing economies. To do so, we return to the subset of countries where we can track workers for three consecutive quarters. We focus further on the eight developing countries that also provide data on earnings. We use this subsample to compute the decline in earnings for workers who experience a spell of temporary self-employment, which

18. The trend line is also statistically significant if we exclude the EU countries and the United States. The slope is 2.71 ($p = .045$) if we remove these countries compared with the baseline of 4.63 ($p = .000$).

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TABLE VII
EARNINGS REPLACEMENT RATE FOR TEMPORARILY SELF-EMPLOYED

Country	Avg. log change in earnings	Share with decline < 60%
Bolivia	−0.09	0.80
Brazil	−0.06	0.81
Costa Rica	−0.41	0.58
Dominican Republic	−0.12	0.76
India	0.13	0.89
Mexico	−0.05	0.61
Mongolia	−0.15	0.90
Nicaragua	−0.37	0.43
Paraguay	−0.22	0.63
Average	−0.15	0.71

Notes. The average difference in log monthly earnings between $q = 1$ and $q = 2$ for individuals who transition W to S to W in three consecutive quarters $q = 1, 2, 3$.

we compare to the unemployment insurance replacement rate in developed areas. We define workers experiencing temporary self-employment as those who work for wages in the first and third quarters in the sample but experience an intervening quarter of self-employment, which we interpret as a period of search. Conditioning on the first period of wage work gives us a benchmark from which to compute the change in earnings (akin to the replacement rate). Conditioning on the third period of wage work helps us focus on workers who experience temporary self-employment and excludes those who do have a good business opportunity and move into self-employment in a more permanent way.

Table VII shows two main results about the earnings change of workers who experience temporary self-employment. The second column shows that the average earnings loss is small, just 15 log points. Focusing on the temporarily self-employed is conservative: the loss is even smaller (8 log points) if we study any workers who transition from wage work to self-employment. The third column shows the share of workers that earn at least 40% of their first-quarter wage earnings, motivated by the fact that this is at the upper end of the estimates of the unemployment insurance replacement rate in the United States (Shimer 2005). We find on average more than three-fourths of workers do so, with at least 60% of workers in all countries earning above that level. Hence, self-employment is a quantitatively important source of

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income for workers who are searching for work in countries without unemployment insurance systems.[19]

VI.B. Endogenous Selection and Wage Workers

The other half of the cross-country differences in employment exit rates are accounted for by wage work. Our microdata can also provide evidence that is useful for guiding theories of the frictions that affect wage workers. Here, we build on the fact that we observe tenure in many countries and characterize how wages and employment exit rates evolve with tenure. Doing so gives us a sense of how newly formed and old matches compare, which is a second way to understand labor market dynamics in developing economies.

We start by estimating wage-tenure profiles by country. We pool all available years for a country and run a modified Mincer regression building on Lagakos et al. (2018),

$$\log(w_{it}) = \alpha + \phi_x + \xi_\tau + \rho_{edu} + \gamma_t + \varepsilon_{it}. \tag{1}$$

w_{it} is the hourly wage of individual i observed at time t. The vector ϕ_x consists of dummies for potential experience groups {2–4 years, 5–9 years, 10–19 years, 20+ years}, with 0–1 years of potential experience serving as the omitted reference group. Potential experience is constructed as age minus expected years of schooling minus 6. The vector ξ_τ consists of dummies for three tenure bins, {6–12 months, 1–5 years, 5+ years}, with 0–6 months of tenure serving as the omitted reference group. The vector ρ_{edu} is a set of dummies for education (harmonized to the categories of Barro and Lee 2013), γ_t is a vector of year dummies, and ε_{it} is a mean zero error term.

Lagakos et al. (2018) use a similar specification without controls for tenure to estimate wage-experience profiles across countries. Their main finding was that these profiles are flatter in poorer countries. We confirm the same finding in our data. Figure VII shows the estimated wage difference for workers with 10–19 or 20+ years of experience (against the omitted category of 0–1 years of experience) plotted against GDP per worker.

19. These calculations exclude unpaid family workers. However, since they are a small share of self-employment, including them and assigning them zero earnings does not change the calculation much: the average change in log earnings would be −0.23 instead of −0.15.

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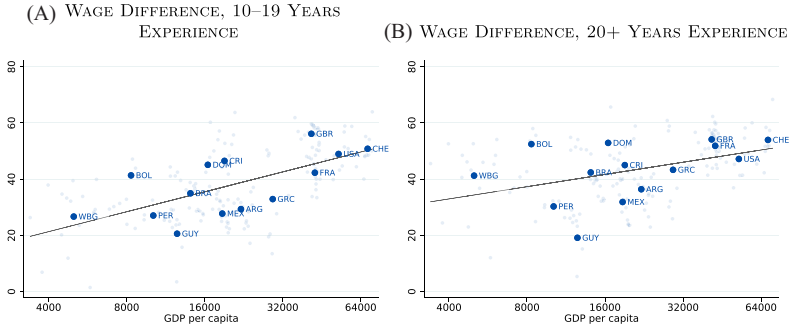

Figure VII

Wage-Experience Profiles

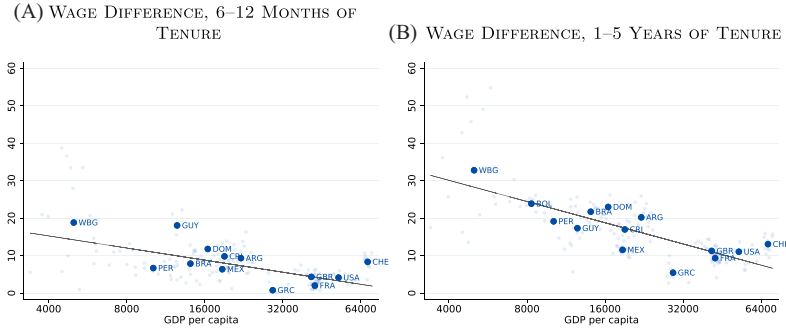

Figure VIII

Wage-Tenure Profiles

Wage-experience profiles are substantially flatter in developing countries.

We provide the first comparable estimates of wage-tenure profiles for a large number of countries. Figure VIII plots against PPP GDP per capita the estimated percentage wage difference for workers with 6–12 months or 1–5 years of tenure (against the omitted category of 0–6 months). The striking new finding here is that wage-tenure profiles are steeper in developing economies. We show in Online Appendix E that these findings hold for other ways of binning tenure and are robust to controlling for occupation fixed effects, and that the slopes displayed here are statistically significantly different from zero and from each other.

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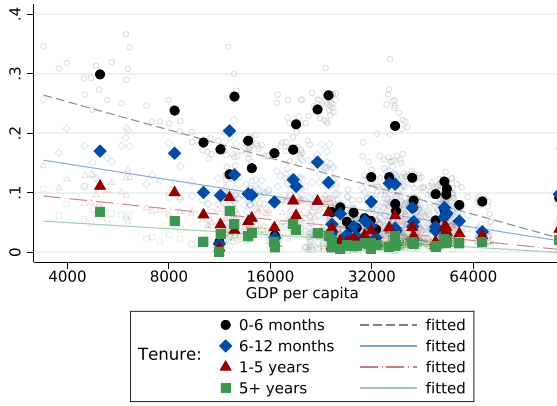

FIGURE IX

Employment Exit Rates by Job Tenure

The gradient of wage-tenure profiles represents the effects of two forces: the accumulation of job-specific human capital and selection of which matches survive to high tenure levels (Topel 1991). For human capital accumulation to explain our findings, it would need to be the case that workers accumulate job-specific human capital faster in developing economies, which seems implausible given our other findings that workers exit employment faster and accumulate less human capital over the course of their lives. For selection to explain our findings, it would need to be the case that workers are more selected at high levels of tenure in developing economies. We test whether this is the case.

Specifically, we estimate employment hazards for all countries. For visualization purposes, we focus on employment exit rates (to any nonemployment) for wage workers in the same four tenure bins we used when estimating wage-tenure profiles (0–6 months, 6–12 months, 1–5 years, 5+ years). Figure IX plots the average exit rate against GDP per worker. The main finding is that employment exit rates are higher at all tenure levels in developing economies, but that the gap between developing and developed ones is largest at low tenure levels.[20] This fact implies

20. This last finding also complements recent work showing that the decline in turnover in the United States is primarily accounted for by a reduction in short employment spells (Mercan 2017; Pries and Rogerson 2022).

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that matches that survive to high tenure levels in developing areas have been more selected, which reinforces the interpretation that steeper wage-tenure profiles in developing economies represent the effect of stronger selection on wages.

Jointly, these findings point to the view that tenure profiles reflect the effect of differential selection. Interpreting these findings through the lens of selection leads to three conclusions. First, the fact that the patterns for wages and employment exit rates are aligned implies that we can interpret the selection as being on wages or match quality. Second, the fact that exit rates are initially higher in developing economies implies that initial match quality is on average lower in those countries. Third, the fact that employment exit rates are more steeply declining in developing economies implies that matches there are subject to a more rapid selection process.

These results point to the need for theories that explain why developing economies have a lower-quality pool of initial matches as well as more rapid selection. We see two types of theories that may fill this need. The first works through composition effects. Suppose that in all countries the initial set of matches consists of two subgroups: low-quality matches with a high destruction rate and high-quality matches with a low destruction rate. Then if countries with developing economies start with a higher share of the low-quality matches, their aggregate employment hazards and wage-tenure profiles will be consistent with our data.

This theory is consistent with our overall findings that marginal jobs play a much more important role for labor market dynamics in developing economies. Since we focus on wage workers in this section, they tie particularly to the importance of informal and low-earnings wage work. At the same time, we showed in Section IV that composition effects measured in terms of observable worker and firm characteristics (up to a full interaction of age, gender, education, occupation, industry, and firm size) do not go far in accounting for the difference in labor market flows between developing and developed economies. The important question for this view of labor market frictions is then why observably similar workers and firms in developing economies are much more likely to form low-quality matches.

The second type of theory works through endogenous differences in match formation and match destruction for similar workers. Such theories would require that workers and firms are willing to engage in more marginal matches in developing economies,

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but are also more likely to separate from those matches. For example, this could be an optimal response if firms in developing countries face higher demand volatility: they are willing to hire marginal matches when demand is high, but destroy them when it falls. This suggests that there would be value to further investigating the link between worker and firm dynamics (Haltiwanger et al. 2018; Akcigit, Alp, and Peters 2021; Eslava, Haltiwanger, and Pinzón 2022).

Alternatively, workers and firms might engage in more marginal matches in developing economies if they have weaker signals about match quality. In the framework of Jovanovic (1984), this would lead to both higher match formation rates and higher endogenous destruction rates as match quality is discovered through production. Recent work in development economics has used experimental variation to document an important role for imperfect information in labor markets, which suggests this may also be a useful avenue for future research (Abebe et al. 2021; Bassi and Nansamba 2022; Carranza et al. 2022).

VII. Conclusion

In this article, we collect and harmonize rotating panel labor force surveys from 80 million workers from 49 countries with GDP per capita from below $5,000 to above $50,000. We use the data set to characterize and understand labor market dynamics around the world. We make three main contributions.

First, we show that standard measures of labor market flows all decline with development. Second, we show that the higher flows are largely accounted for by more frequent flows to, from, and between marginal employment: self-employment, informal work, and low-earnings wage work. We show that these jobs are not persistent and they do not allow workers to climb the job ladder to good or persistent work. We conclude that high labor market flows in developing economies reflect that they have a slippery job ladder.

Third, we use our data to provide guidance to theories of the slippery job ladder and labor market frictions in developing economies. Our results show the importance of modeling self-employment as quasi-unemployment rather than including it with wage work. For wage workers, we characterize the evolution of wages and employment exit rates by tenure and show that they point to different patterns of which matches start operating and

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survive to high levels of tenure. Although these findings do not pin down a unique theory of wage work, they are useful for disciplining potential theories and also suggest several fruitful avenues of future inquiry, including composition effects, the role of firms, and information frictions.

Our results speak to a variety of policy-relevant topics. First, they show that the difficulty of measuring employment is likely systematically higher at lower levels of development and in particular, flows into and out of subsistence self-employment are likely to be important for any number of labor market policies (Breza, Kaur, and Shamdasani 2021; Herreño and Ocampo 2023). Moreover, they provide guidance for modeling labor market frictions and designing policy. For example, our results are at odds with the standard approach to modeling labor market frictions that "lock" workers into jobs, occupations, or locations.

Supplementary Material

An Online Appendix for this article can be found at *The Quarterly Journal of Economics* online.

Data Availability

The data underlying this article are available in the Harvard Dataverse, https://doi.org/10.7910/DVN/RXWKTV (Donovan, Lu, and Schoellman 2023).

Yale School of Management, United States
Central Bank of Chile, Chile
Federal Reserve Bank of Minneapolis, United States

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