Arepas Are Not Tacos:

On the Labor Markets of Latin America (Discussion Paper)

María Aristizábal-Ramírez
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IDB

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María Aristizábal-Ramírez*
Cezar Santos**
Alejandra Torres***

* Federal Reserve Board
** Inter-American Development Bank and CEPR
*** Inter-American Development Bank

IDB

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Abstract

This paper examines labor markets across Latin American countries, revealing substantial differences in unemployment, informality, and worker transitions. Using surveys from eight countries, we construct comparable statistics on employment stocks and mobility patterns. Notable cross-country differences emerge, with economies mostly clustered into high unemployment-low informality or low unemployment-high informality groups. Transition probabilities and directional flows also vary significantly. We highlight the importance of using country-specific parameters when simulating labor market and aggregate outcomes. Finally, we compare our main results with those by sex and education groups.

1 Introduction

How similar are Latin American labor markets? Are informality and unemployment high everywhere? What about transition rates? Do workers move between the formal and the informal sector similarly? While developing economies have larger informal sectors than developed economies (Ulyssea, 2020), there are striking differences in labor market stocks and transitions across Latin American countries. In this paper, we provide a set of comparable labor market statistics to shed light on the specifics of Latin American labor markets.

We first show that countries can generally be grouped as high unemployment and low informality or low unemployment and high informality. Second, we document country-specific labor market transitions that uncover differences in terms of rigidity and segmentation between the formal and informal sectors. Further, when we decompose the sample certain demographics, we observe that differences across countries remain in terms of sex. However, with regards to education, highly educated workers on average have lower unemployment and lower informality everywhere. Finally, using a simple model and calibrating it with the provided transition rates, we show that simple differences in labor market patterns have meaningful aggregate implications in terms of consumption and savings.

We start by constructing a comprehensive dataset of labor market variables from 2012 to 2019 using surveys from eight countries: Argentina, Bolivia, Brazil, Chile, Costa Rica, Ecuador, Mexico, and Paraguay. A unified definition of informality classifies workers as having an informal job if employed but not reporting their status to social security or tax authorities. An examination of average unemployment and informality rates reveals striking cross-country differences, with unemployment ranging from 3% in Mexico to 14% in Brazil, and informality from 15% in Chile to 80% in Bolivia. Despite these wide ranges, our first result is that most countries fall into two groups that we will denominate Group I or Group IV. Group I corresponds to countries with high unemployment and relatively low informality (Argentina, Brazil, Chile, Costa Rica). Group IV are countries with low unemployment and high informality (Bolivia, Ecuador, Mexico, Paraguay).

We also analyze labor market transitions across formal employment, informal employment, and unemployment. Substantial cross-country differences in mobility patterns and directional flows emerge. First, while remaining formally employed is the most prevalent outcome, some countries like Chile and Mexico exhibit higher worker mobility across employment states, driven by either a higher propensity to exit unemployment (Mex-

ico) or informal jobs (Chile). In contrast, more rigid markets like Paraguay and Costa Rica see workers frequently remaining in informal employment or unemployment. Second, high-informality countries witness a greater likelihood of transitioning from formal to informal jobs upon job loss, while a trend of shifting to unemployment prevails in high-unemployment economies. Leaving informality is the primary driving force in low-informality high-unemployment countries (Group I), whereas leaving unemployment is more common in high-informality, low-unemployment economies (Group IV). Third, certain labor markets appear segmented, with restricted mobility back into formality for informal workers, as observed in Bolivia and Paraguay.

Moreover, we assess the importance of these labor market transitions when modeling economic outcomes in Latin American countries. To do this, we write a simple model of consumption and savings with two different sectors, formal and informal, and unemployment. Earnings follow a Markov process. First, we compare the implied paths of informality and unemployment in Brazil and Colombia using transition probabilities from Mexico and Brazil. Borrowing parameters from one country to simulate another can lead to quite different and potentially misleading results. Second, when we calibrate the model to Brazil or Colombia using both Brazil's and Mexico's transitions, we find that the observed labor market transitions can amount to large differences in the assets-to-income ratio. However, as differences in unemployment and informality earnings disappear, these transitions play a smaller role in explaining consumption-and-savings decisions. Hence, differences in labor market transitions can be important aspects to take into account when thinking about policies in terms of consumption, savings, and ultimately taxes. Not considering the subtleties of the labor market could lead to meaningful mismeasurements or aggregate outcomes. These results are in line with Restrepo-Echavarria (2014), who shows that mismeasurements of informality can lead to higher business cycle volatility.

Finally, we explore differences in unemployment and informality rates and transitions across employment states by sex and education level. While the overall country classifications into groups based on high/low unemployment and informality holds on average across demographics, there are notable variations. First, female workers exhibit higher unemployment and informality rates compared to males, with the sex unemployment gap being larger than the informality gap. Second, the differences across countries are less pronounced for highly educated workers who predominantly fall into the low unemployment-low informality group. Conversely, less-educated workers experience starker cross-country disparities, with higher unemployment in high-unemployment

countries and higher informality in high-informality countries. Third, there is greater labor mobility for men and less-educated individuals. Maintaining formal employment remains the likeliest outcome across groups, though men and less-educated workers tend to persist in informality more than women and highly educated men.

Related Literature. Our paper makes two contributions to the literature. First, by generating comparable measures of labor market dynamics across Latin American countries, our paper produces ready-to-use labor market parameters. Our paper systematically compares informality and different labor market transitions across Latin American countries, somewhat similarly to what Hobijn and Şahin (2009) did for OECD countries. Creating a compelling and comparable data base of Latin American countries was challenging until recently. For this reason, previous papers had to focus on particular countries, like Brazil (Gerard and Gonzaga, 2021; Gomes et al., 2020) or Mexico (Gong and Van Soest, 2002; Maloney, 1999). Alternatively, when cross-country comparisons were made, they were restricted to certain demographics (Bosch and Maloney, 2010; Funkhouser, 1996).

Second, we show that, despite general similarities (e.g., relatively high informality rates), Latin American countries exhibit substantial variation in labor market outcomes. In this regard, we build on the analysis of labor markets and development by Donovan et al. (2023), but instead focus on the diversity of experiences across Latin American labor markets. By looking at high-informality countries, our work relates to Meghir et al. (2015), Ulyssea (2018), Herreño and Ocampo (2023), and Menezes-Filho and Narita (2023), among others. We innovate by documenting that unemployment, informality and employment transition rates exhibit substantial variation in Latin America. We also show that this substantial variation has important implications for simulations of labor market and aggregate outcomes (as in, e.g., Chodorow-Reich and Coglianese, 2021).

2 An Overview of Unemployment and Informality in Latin America

Figure 1: Informality vs. Unemployment: Two different forces
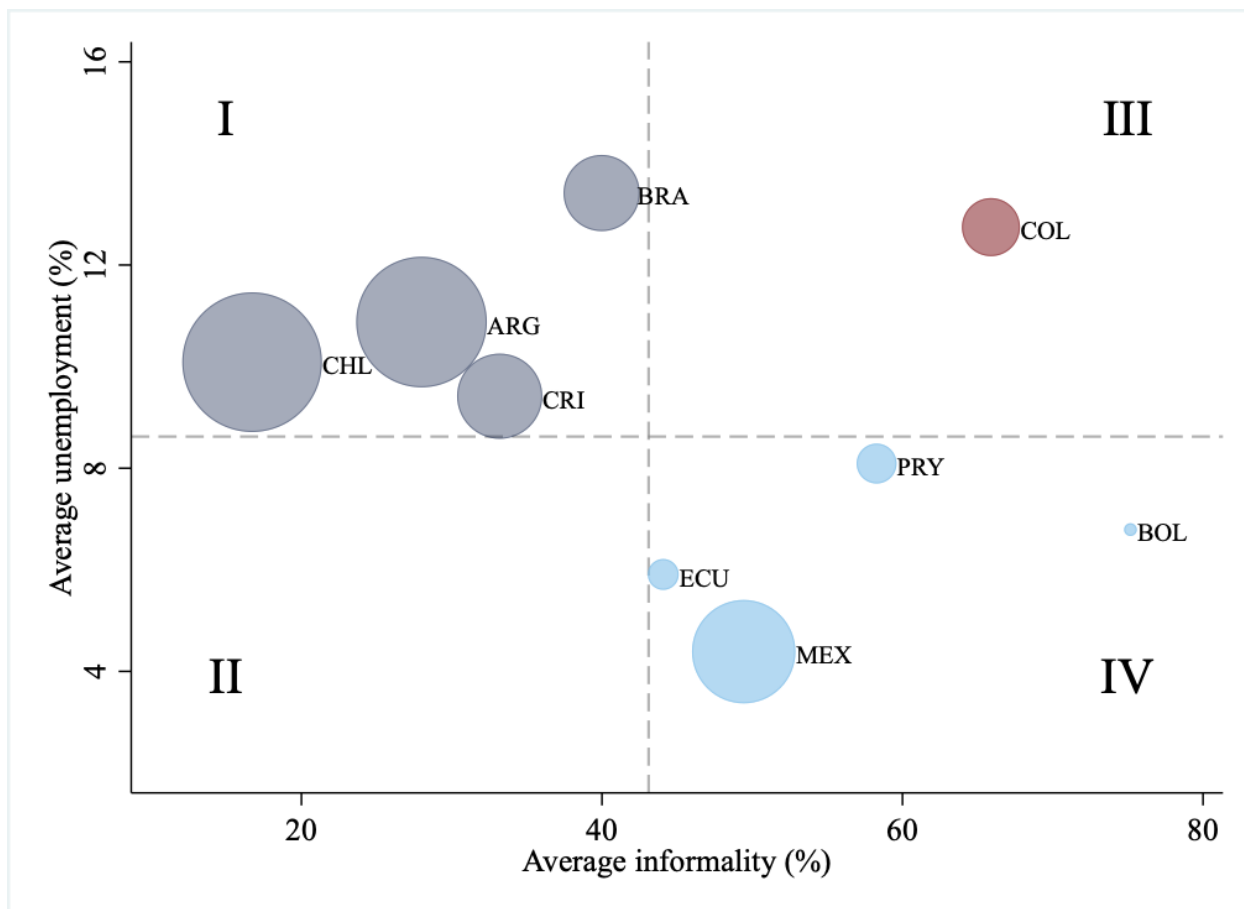
Note: The vertical axis shows the average unemployment rate, and the horizontal axis shows the average informality rate. Dot sizes represent GDP per capita, where Chile is the largest and Bolivia the smallest. The graph is divided into four groups using the average unemployment and informality rates across countries. Group I in the top left corner shows high unemployment with low informality, Group II in the bottom left corner shows low unemployment and low informality, Group III in the top right corner shows high unemployment and high informality, and Group IV in the bottom right corner shows low unemployment and high informality. Data source: Countries' labor market surveys and authors' calculations. See Appendix A for details.

To analyze the specifics in the labor market characteristics across Latin American countries, we create a comparable data set of average labor market stocks and transitions between 2002 and 2022 using data from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, and Paraguay. To construct this data set, we use labor market

surveys for each country similar to Donovan et al. (2023) and unify the definition of informality. Workers are classified as having an informal job if they are employed and do not report their working status to the corresponding social security or tax office. Workers are classified as unemployed if they report not having a job but are actively looking for one. Both informal and formal workers can transit to unemployment. Finally, workers are classified as out of the labor force if they do not report having a job and are not actively looking for one. The unemployment rate is computed as the ratio of unemployment to total employment (formal and informal) plus unemployment and the informality rate as informality to total employment. See Appendix A for further details.

We start by describing the differences in average unemployment and informality rates. We choose these two stocks to describe the markets because unemployment is the most common statistic used in the literature to characterize a labor market, and there is a common belief that informality is high across all Latin America. In addition, participation rates are similar across most of these countries, as we show in Figure B1 in the Appendix.

Figure 1 shows on the horizontal axis the average informality rate per country and the average unemployment rate on the vertical axis. The size of each dot represents GDP per capita, with Chile being the largest, and Bolivia the lowest. The horizontal dashed line shows the average value of unemployment and the vertical dashed line shows the average value of informality across our sample. The graph then displays four potential regions in which to group countries. The top-left region represents high unemployment and low informality (Group I), the bottom-left region represents low informality and low unemployment (Group II), the top-right region represents high informality and high unemployment (Group III), and the bottom-right region represents high informality and low unemployment (Group IV). We fix these cut-offs and regions for the rest of our analysis.

The differences in the range of both unemployment and informality rates are striking. The average unemployment rate varies from 3% in Mexico to almost 14% in Brazil, and informality varies from around 15% in Chile to almost 80% in Bolivia. Notably, virtually all countries in our sample fall into Groups I and IV. Countries in Group I are Argentina, Brazil, Chile, and Costa Rica, whereas in Group IV, we have Bolivia, Ecuador, Mexico, and Paraguay. The sole exception is Colombia, which falls in Group III, with both high unemployment and high informality. We will drop Colombia from most of the analyses of the next few sections, however, as the country does not have panel data that allow us to compute transitions across employment states. We include it in Figure 1 to highlight the varied experiences in labor markets across Latin America. Moreover, we will use Colombia in Section 3.1 to highlight the importance of using country-specific parameters

in simulations.

There are three important characteristics of groups I and IV. First, the average GDP per capita of Group I countries with high unemployment and low informality is $19,500, which is, on average, higher than that of Group IV countries with $12,700 GDP per capita. This is consistent with Donovan et al. (2023) who find that income and informality are negatively correlated. However, Mexico is the one case with a GDP per capita of $18,700, which is high by Latin American standards, yet has low unemployment and high informality.[2] Second, Group I's unemployment rate is as high as that in Spain, the highest unemployment rate within the European Union (EU). Group IV's unemployment rate is comparable to countries like the United States or Canada. Third, the informality rate in Group I is somewhat comparable with the informality rate in some EU countries according to the International Labor Organization (ILO, 2020), while Group IV's informality rate is higher than that in all advanced economies. Most countries, however, do not produce informality measures, and if they do, the definition is not necessarily comparable.

3   Labor Market Transitions across Employment States

In this section we focus on labor market transitions. Table 1 shows labor market transitions across formal jobs (F), informal jobs (I) and unemployment (U).[3] Each column OD shows the average quarterly transition rate per country from the origin state O to the destination state D. For example, FI is the probability of moving from a formal job to an informal job in the next quarter. Countries at the top of the table are those in Group I as defined in Section 2, and countries in the bottom part of the table are those in Group IV. The bottom two rows are the middle value (average between the maximum and minimum value of each column), and the coefficient of variation (standard deviation divided by the mean of each column).[4] Highlighted cells are those above each column's middle value.

To study these transitions, we break down the analysis into two parts. First, we distinguish countries by the absorbing states: where are workers more likely to remain? Second, we focus on how workers move across states, and point out that labor markets differ in terms of mobility and direction. These three characteristics, the absorbing states,

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[2]We use GDP and population data in 2019 from Penn World Table 9.1.

[3]We provide the table with for the no participation rate transitions in Table B2 in the Appendix.

[4]We use the middle value to capture large differences across the sample.

Table 1: Labor Market Transitions: Mobility and Direction

	Country	FF	II	UU	FI	FU	IF	IU	UF	UI
I	Argentina	90.41	61.75	37.13	5.58	1.53	16.16	7.83	8.51	21.96
	Brazil	82.61	69.41	45.67	10.47	3.20	16.67	6.25	12.10	17.96
	Chile	90.58	50.06	32.73	3.34	2.89	24.54	7.62	25.66	13.55
	Costa Rica	90.18	66.69	33.93	5.76	2.05	12.37	6.39	14.35	22.96
IV	Bolivia	60.09	73.28	19.32	18.23	2.32	6.50	2.53	10.34	28.76
	Ecuador	83.29	72.57	27.90	10.20	2.10	12.86	2.26	20.00	21.28
	Mexico	79.54	68.35	20.08	14.05	1.96	15.38	2.49	22.90	30.11
	Paraguay	88.62	79.05	34.59	8.30	1.88	6.90	4.44	8.77	34.49
	Middle value	75.34	64.55	32.50	10.79	2.36	15.52	5.05	17.09	24.02
	Coeff of var.	0.12	0.13	0.28	0.51	0.25	0.42	0.47	0.44	0.29

Note: Each column OD shows the average labor market transition rate per country from the origin state O to the destination state D. F denotes formal, I informal, and U unemployment. Countries at the top of the table are those in Group I as defined in section 2, and countries in the bottom part of the table are those in Group IV. The bottom two rows are the middle value of each column and the coefficient of variation. Highlighted cells represent transitions above the middle value. Data source: Countries' labor market surveys and authors' calculations. See Appendix A for further details.

direction and mobility, are driven by the dominant state, unemployment (Group I) or informality (Group IV) as discussed in Section 2.

Start by focusing on the probability of staying in the same state, the first three columns of Table 1. Across all Latin American labor markets, remaining in a formal job (FF) is the most likely outcome, followed by remaining in an informal job (II), with Bolivia being the only exception, where remaining informal is more likely than remaining formal. Keeping a formal job (FF) has both the highest probability and the lowest coefficient of variation. Not surprisingly, the probability of keeping an informal job is high in countries with high-informality and low-unemployment (Group IV) and the probability of remaining unemployed (UU) is high for low-informality and high-unemployment countries. The probability of remaining informal (II) is low only for Chile and Argentina.

In terms of mobility, Chile and Mexico have higher probabilities of moving into and out of a particular state. However, two distinct forces are at play: a higher likelihood of exiting unemployment and a higher likelihood of exiting informality. In Mexico, workers transition more frequently across states due to a higher rate of leaving unemployment. In Chile, higher mobility is driven by workers leaving informal jobs. In contrast, there are more rigid markets like Paraguay and Costa Rica, where workers do not return to the formal sector as frequently. In Costa Rica, they tend to remain unemployed, while in Paraguay, they mostly remain informal. In this sense, the informal sector plays different

roles across countries. In Chile, for example, the informal sector is more temporary, and it is a state where the worker goes while looking for a formal job. In contrast, in Mexico or Bolivia it is a more permanent state. That is, it is equivalent to having a formal job, with the difference that workers do not report their status to the corresponding social security or tax office.

In terms of direction, when a formal worker loses their job, they can get an informal job or remain unemployed. High-informality countries have a higher probability of moving from a formal to an informal job (FI). Similarly, high-unemployment countries have a higher probability of moving to unemployment (FU). The probability of moving from a formal job to informality is always greater than the probability of moving to unemployment. However, moving from a formal to an informal job has the highest variability. A worker who loses their formal job moves on average 68% of the time to an informal job and 1% of the time to unemployment in Mexico, whereas in Chile the probability of moving to an informal job is only 35.5% and the probability of moving to unemployment is 30%.[5] It is worth mentioning that informality is generally not a type of unemployment or underemployment, that, if combined with unemployment, will eliminate labor market differences across countries. Ulyssea (2020) highlights that formal and informal firms co-exist within the same industries and even with similar productivity levels.

A worker in a low-informality high-unemployment country (Group I) who ended up in an informal job is more likely to leave informality (either to formal employment, IF, or unemployment, IU) than a worker in a high-informality country. There are two observations worth noting, however. First, the probability of leaving an informal job for a formal job is always higher than moving to unemployment, but the probability of moving to unemployment in Group I is about two times larger than the probability of moving to unemployment in Group IV. This means that leaving informality is the driving force guiding the direction labor market flows in the low-informality and high-unemployment countries, and not entering unemployment is the driving force in high-informality low-unemployment countries. Second, some markets in both groups of countries are segmented, meaning that workers do not easily transit back to formality. For instance, IF in Costa Rica is substantially lower than IF in the rest of Group I, and IF in Bolivia and Paraguay is half of Mexico's or Ecuador's percentage.

Finally, unemployed workers in high-informality low-unemployment countries (Group IV) have a higher flow out of unemployment (either to formal employment, UF, or infor-

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[5]These percentages are calculated conditional on workers leaving the formal sector, that is, considering FI, FU and FN.

mal employment, UI) and, unsurprisingly, the flow is greater towards informality. There are also important distinctions to note when a worker leaves unemployment. First, Chile stands out because it has the lowest levels of informality across all the region. In this country, not only are returns to formality after unemployment (UF) the highest, but also the probability of moving into informality is the lowest. Second, in Argentina, Paraguay and Bolivia, it is very unlikely that an unemployed worker returns to the formal sector, whereas in Mexico or Ecuador, the worker is equally likely to get a formal or an informal job.

3.1 The Importance and Implications of Country-specific Parameters

In this section, using data from Brazil and Colombia and a simple model, we show how and why these differences across labor markets matter for aggregate outcomes. The main takeaway is that labor market heterogeneity across groups I and IV requires policymakers and researchers to take into account these differences before arriving at savings, consumption and ultimately welfare conclusions. To do so, we first show the differences in the paths to steady state of unemployment and informality if countries had different transition probabilities. Second, we show that the paths not only imply different steady state labor market stocks, but also that they have potentially meaningful aggregate implications.

First, how would informality or unemployment look in a Brazil (a Group I country) if we assume Mexico's labor market structure (Group IV)? To answer this question, we use data from Brazil and Colombia and compare the implied paths of informality and unemployment to steady state using Mexico's and Brazil's transition probabilities from Table 1. In Figure 2, we take a state vector s_1 in 2012Q1 for Brazil and apply its own transition matrix (solid dark line). Alternatively, we take the same initial state but use the transition matrix from Mexico instead, giving us an alternative time series for $\{F, I\}$ (dashed light line). We compare these two scenarios with Brazil's actual data (the dots in the graph). Figure 2a shows informality, and Figure 2c shows unemployment. If we use Mexico's transition matrix to simulate Brazil's informality, we overstate informality as the initial stock is below Mexico's average informality. Similarly, simulating Brazil's unemployment with Mexico's transition understates Brazil's unemployment. Moreover, this would suggest a counterfactually quick transition from an unemployment rate of 12 percent to an unemployment rate of 3 percent.

Second, how much can we infer for a country for which we do not have complete

data, like Colombia, from other countries' experiences? Figures 2b and 2d use Mexico's and Brazil's transition matrices to generate paths for informality and unemployment for Colombia. Recall that it is not feasible to construct quarterly transitions using Colombia's labor market survey, which is not a panel dataset. The results of these simulations are telling. Both Brazil's and Mexico's parameters understate Colombia's informality rate. If applied to Colombia, Brazil's transition probabilities suggest a path that, within two years, moves from a 70 percent informality rate to 40 percent. Using Mexico's transitions, the implied path reduces informality from 70 to 50 percent. With respect to unemployment (Figure 2d), the gap between Colombia's data and the path with Brazil's transition is not as significant. Brazil's transition matrix would suggest higher unemployment, whereas Mexico's transitions would suggest an unemployment rate about 10 percentage points lower than the data.

Third, what are the aggregate implications of these differences? To answer this question, we now set up a very simple model. Suppose a worker has preferences represented by the utility function $v(c) = c^{1-\sigma}/1 - \sigma$, with a time discount factor of β. The worker faces shocks to which sector s they participate in: formal f, informal i or unemployment u. The probability of switching from sector s in the current period to sector s' in the next period is given by $\pi(s, s')$ and the income for sector s is given by $y(s)$. The worker can insure against these income-sector shocks by saving in a one-period bond that pays a non-contingent interest rate r. The value function for the worker's problem reads:

$$V(a, s) = \max_{c, a'} v(c) + \beta \sum_{s'} \pi(s, s') V(a', s')$$

$$\text{s.t. } c + a' = y(s) + (1 + r)a.$$

We calibrate the model setting β to 0.98, σ to 2, and r to 0.01, standard values. In addition, we use relative earnings data for Brazil, and Colombia. Informal earnings relative to formal earnings in Brazil are 0.74 and unemployment earnings are 0.30. In contrast, in Colombia informal earnings are 0.37 while unemployment earnings are 0.27. In this simple exercise, we compute assets-to-earnings ratios for Brazil and Colombia using Brazil's and Mexico's transitions and show them in Figures 2e and 2f. We draw two important conclusions. Given the earnings differences in Brazil between formal and informal workers, changing the probability of having a formal job has large implications for savings, as the assets-to-earnings ratio decreases from 175% to 115%. In contrast, in Colombia the difference is almost nonexistent. This suggests that as long as there are productivity differences between informality and unemployment, and returns across these states differ,

these labor market transitions may play determinant roles in shaping aggregate dynamics in terms of savings and consumption.

3.2   The Takeaway

As the title of this paper quips, although there are similarities in the labor markets of Latin America (e.g., relatively high informality rates), the exercises of this section provide a cautionary tale. Despite certain similarities, several differences persist. These differences arise from the role that unemployment and informality play in shaping the direction and mobility of labor markets in these countries. Further, policies that interact with sectoral shocks (e.g., taxes or retirement plans) should consider these labor market nuances, as they influence both savings and consumption paths.

4   Unemployment, Informality and Demographics

In this section we explore the differences in labor market stocks and transitions by demographics. We split our sample by sex and education level, and we classify workers with college or higher degrees as highly educated and workers with less than college as low educated. We start by showing differences in informality and unemployment, and then we discuss differences in the transitions.

Figures 3a and 3b show the differences in unemployment and informality. The analysis is similar to that of Section 2. The horizontal axis shows informality, the vertical axis shows unemployment and the lines separate the graph in four groups according to the aggregate averages. Diamonds represent women and circles men in Figure 3a, while triangles represent low-education workers and squares represent high-education workers in Figure 3b.

Start with sex. Female workers have higher unemployment and higher informality. But on average, the classification of countries into the four groups (high/low unemployment and high/low informality) does not change when considering sex differences. This result is consistent with previous work documenting sex unemployment and informality gaps (Albanesi and Sahin, 2013; Azmat et al., 2006; Galiani and Weinschelbaum, 2012; Ulyssea, 2020). However, when we compare the unemployment and informality gaps, we find that they are statistically different with 95% confidence intervals and that the unemployment

Figure 2: Implied Informality and Unemployment Paths in Brazil and Colombia Using Brazil's and Mexico's Transitions

(a) Informality Brazil

(b) Informality Colombia

(c) Unemployment Brazil

(d) Unemployment Colombia

(e) Assets to earnings Brazil

(f) Assets to earnings Colombia
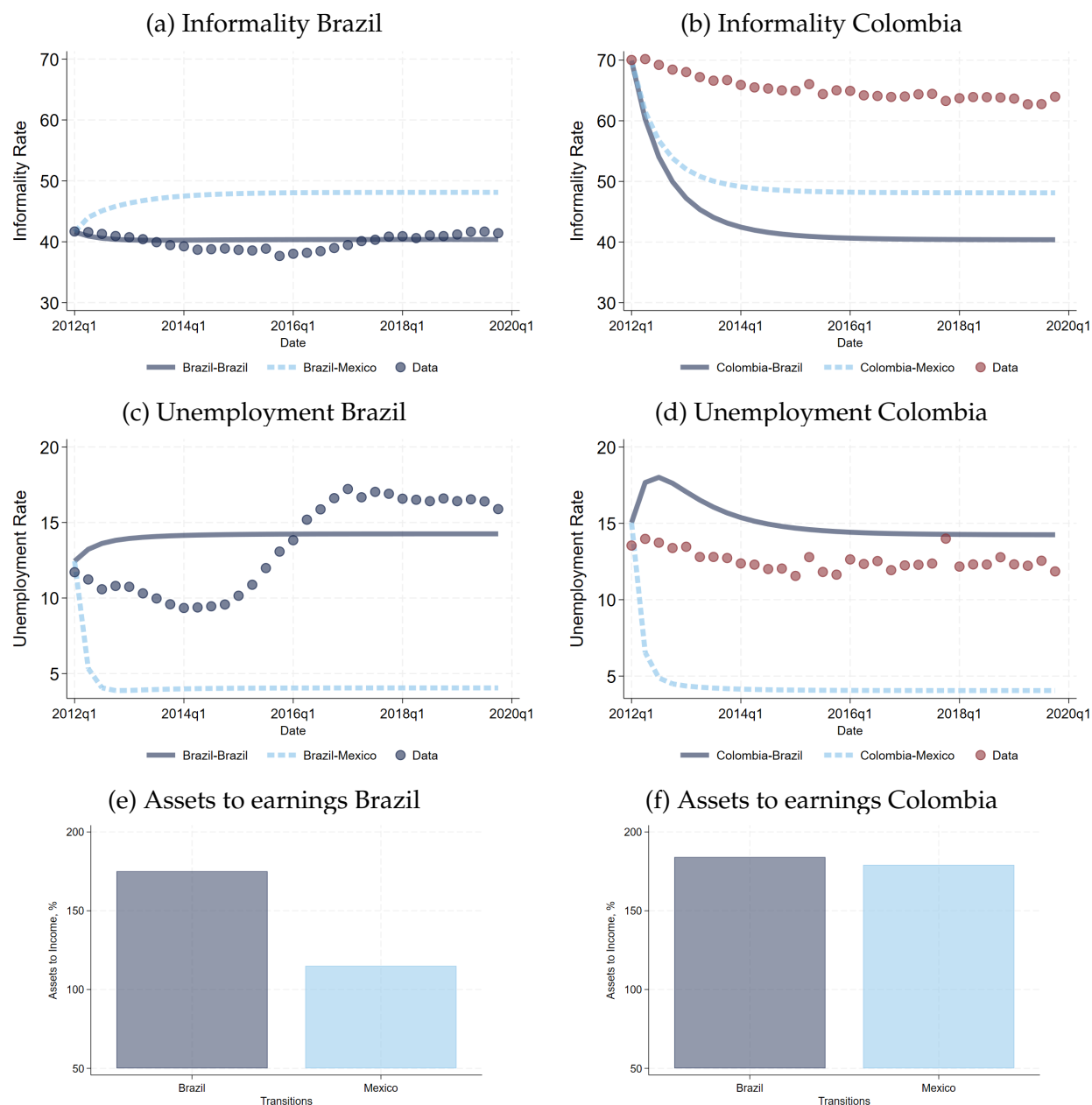
Note: The vertical axis in panels (a) and (b) show informality rate in percentage, and in panels (c) and (d) shows unemployment rate in percentage. Panels (a) and (c) show informality and unemployment rates for Brazil. Dots show data. The solid dark line shows the implied informality or unemployment rate for Brazil using Brazil's transition probabilities in Table 1. The dashed light line shows the implied informality or unemployment rate for Brazil using Mexico's transition probabilities in Table 1. Panels (b) and (d) show an equivalent scenario for Colombia. Panels (e) and (f) show the the assets to earnings ratios implied by the model using Brazil's and Mexico's transitions. Data: Countries' labor market surveys and authors' calculations.

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Figure 3: Informality vs. Unemployment by Demographics
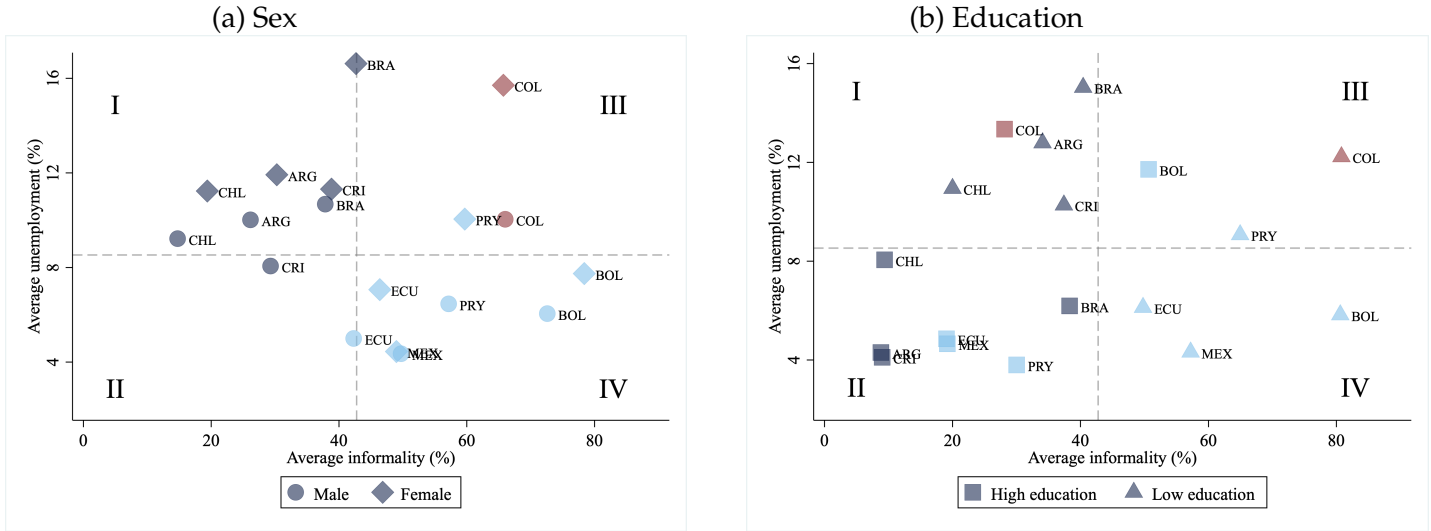
Note: The vertical axis shows average unemployment rates, and the horizontal axis shows average informality rates. The graph is divided into four groups as described in Section 2. Panel **(a)** shows differences across sex. Diamonds represent women and circles men. Panel **(b)** shows differences across education level. Triangles represent low-education workers and squares high-education workers. High education is college or more, low education less than college. Data source: Countries' labor market surveys and authors' calculations. See Appendix A for further details.

gap is on average higher than the informality gap. In particular, women's unemployment is on average 36% larger than men's unemployment, and women's informality rate is on average 13% higher than men's informality rate.

There are three points to highlight about this result. First, Chile is the only country where the informality gap is larger than the unemployment gap. Second, Mexico is the only country where male's informality is higher than female's informality, and the unemployment gap is almost zero. Third, the compositional effect in Paraguay and Costa Rica is pronounced, and the group classification changes. Men in Costa Rica are in Group II (low informality and low unemployment), while women in Paraguay are in Group III (high informality and high unemployment).

Now turn to education. There is a strong compositional effect. Differences across countries in labor market outcomes are less apparent for high-education workers. Not surprisingly, high-education workers are on average in Group II (low informality and low unemployment) (Mincer, 1991). On the other hand, for low-education workers, the differences are more pronounced. Low-education workers have on average higher unemployment for the countries in Group II or higher informality for those in Group IV. Two important nuances materialize. Bolivia is the only country where high-education workers experience on average more unemployment than low-education workers and informality

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levels are above the cross-country average. Unemployment of high-education workers in Chile, although lower, is closer to the aggregate unemployment rate than it is for all other countries.

Finally, turn to transitions across employment states. Table 2 shows the corresponding transitions for each demographic group. The table follows the same structure we used before. This time, however, the second column defines the demographic group. M denotes men, W women, H high education, and L low education. There are three points to note. First, the labor market exhibits higher worker mobility, on average, for men and low-education workers. Second, keeping a formal job remains the most likely outcome for all demographic categories. The countries previously classified in Group I (high unemployment, low informality) tend, on average, to have workers remaining more in unemployment across all demographics. Conversely, countries in Group IV (low unemployment, high informality) tend to have workers remaining more in the informal sector across all demographics. However, there are some differences within demographics. Men and high-education workers tend to leave informality faster (IF and IU), while high-education workers and women have lower chances of leaving unemployment to get a job (UF, and UI). Third, the direction of the flows does not reverse compared with the aggregate outcomes. For countries where leaving informality was the dominating force, it continues to be the case, and for countries where avoiding unemployment was driving the direction, it also remains the same. Nonetheless, switching from unemployment to informality is the highest for men, particularly for men in countries in Group IV.

5   Conclusion

This paper's analysis of labor markets across Latin American countries reveals substantial differences in unemployment, informality, and worker transitions. These results highlight the importance of using country-specific parameters when modeling economic outcomes in the region. Despite sharing some broad similarities, persistent differences emerge in the levels of unemployment and informality, the mobility patterns across employment states, and the directional flows between formal, informal, and unemployed sectors.

This paper provides a rich set of comparable labor market statistics and highlights that workers move differently across labor market states across Latin American countries. It is possible to divide countries into two groups, one where unemployment plays a major role and one where informality is key in explaining the mobility and direction of the labor

Table 2: Labor Market Transitions by Sex and Education

	Country	Type	FF	II	UU	FI	FU	IF	IU	UF	UI
			Sex								
I	Argentina	M	91.80	65.60	40.81	5.08	1.63	16.59	9.21	10.13	26.57
		W	88.61	58.02	33.83	6.23	1.39	15.69	6.50	7.13	17.81
	Brazil	M	83.30	70.15	45.45	10.46	3.15	17.67	6.42	14.61	22.13
		W	81.66	68.59	45.82	10.48	3.26	15.56	6.06	10.27	14.86
	Chile	M	90.75	48.78	33.27	3.39	3.31	28.65	8.80	31.74	14.68
		W	90.35	51.29	32.12	3.27	2.32	20.54	6.47	19.48	12.36
	Costa Rica	M	90.16	68.82	33.63	6.16	2.07	15.66	7.23	17.95	27.32
		W	90.22	64.37	34.16	5.09	2.00	8.77	5.51	10.74	18.49
IV	Bolivia	M	62.46	75.91	19.04	18.48	2.37	7.62	3.00	12.95	35.71
		W	56.25	70.16	19.64	17.91	2.22	5.19	1.97	7.70	21.73
	Ecuador	M	83.91	76.43	28.51	11.67	2.05	15.74	2.66	24.36	28.10
		W	82.42	67.97	27.38	8.15	2.16	9.47	1.80	16.07	15.29
	Mexico	M	80.35	75.24	21.80	15.25	2.22	16.26	2.98	25.52	36.52
		W	78.28	57.33	17.50	12.18	1.57	13.97	1.72	18.98	20.44
	Paraguay	M	88.78	80.95	33.89	8.58	1.71	7.73	4.87	8.98	39.48
		W	88.37	76.90	35.20	7.88	2.14	5.91	3.96	8.79	30.72
			Education								
I	Argentina	H	94.76	52.40	42.46	2.84	0.73	34.53	5.30	16.81	13.92
		L	88.50	62.50	36.62	6.78	1.87	14.73	8.03	7.69	22.69
	Brazil	H	84.91	77.21	50.87	10.83	1.92	17.64	1.81	17.18	12.49
		L	82.04	67.61	45.22	10.39	3.51	16.44	7.29	11.63	18.45
	Chile	H	94.25	53.74	42.99	2.28	1.95	30.71	7.25	26.87	10.97
		L	88.60	49.15	29.00	3.92	3.40	23.08	7.72	25.26	14.42
	Costa Rica	H	94.99	52.49	46.49	2.70	0.88	28.63	5.53	19.70	12.50
		L	88.95	67.27	33.11	6.56	2.35	11.64	6.48	13.92	23.67
IV	Bolivia	H	67.06	62.80	29.04	11.79	2.63	12.77	3.20	15.42	18.17
		L	56.01	74.80	15.23	22.01	2.12	5.72	2.45	8.33	33.10
	Ecuador	H	91.62	66.79	37.27	5.23	1.32	21.57	3.47	24.07	17.01
		L	80.02	73.12	25.86	12.14	2.40	12.01	2.15	19.13	22.25
	Mexico	H	87.73	51.12	29.81	7.21	1.61	31.43	3.95	27.65	18.78
		L	75.56	69.86	17.22	17.38	2.14	13.97	2.36	21.53	33.41
	Paraguay	H	92.49	77.76	39.74	5.97	1.33	14.94	3.18	25.44	30.34
		L	86.69	79.22	34.54	9.40	2.46	5.84	4.64	7.74	34.87
	Middle value		75.34	64.55	32.50	10.79	2.36	15.52	5.05	17.09	24.02

Note: Each column OD shows the average labor market transition per country and type of demographics from origin O to destination D. M denotes men, W female, H high-education workers and L low-education workers. F denotes formal, I informal, and U unemployment. Countries on the top of each panel are those in Group I as defined in Section 2, and countries in the bottom part of the table are those in Group IV. The bottom row is the middle value of each column, as used in Section 3. Highlighted cells represent transitions above the middle value. Data source: Countries' labor market surveys and authors' calculations. See Section A in the Appendix for further details.

market. Moreover, the role of informality is heterogeneous across countries. For some, like Chile, it is a temporary state that workers transit before they find a different formal job. For others, like Bolivia, the formal and the informal sectors are almost mutually exclusive and workers do not easily transit between the two sectors.

The cross-country variations in labor market structures, workforce compositions, and economic conditions require an approach that accounts for the unique characteristics of each national labor market. We also show that the differences in these labor market transitions have important implications for aggregate outcomes such as labor market stocks, consumption and savings decisions. It is then an interesting avenue of future research to study how these differences impact the role of policies that interact with such decisions.

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Appendix

A Data

For our analysis, we build a comprehensive dataset to provide comparable statistics across countries. To build labor market variables, we use labor surveys that have a rotating panel structure. This way, we can follow individuals for at least a quarter. Table A1 shows the surveys and periods used for each country.

To build income variables for our model, we use supplementary data to include different sources of income. For Brazil, the PNADC main dataset only includes information on first and second-activity income, which means that we do not have information on income for the unemployed. To address this, PNADC has a supplementary survey that includes information on other sources of income. Data for PNADC are collected in a 1-2(5) rotation scheme, where each household is surveyed for a month, leaves the survey for two months, and then is surveyed again in the following month. The data for the supplementary survey are collected at the first and fifth visits. Our earnings variable is the one defined by the Brazilian statistical office (IBGE) as total income from all sources.

For Colombia, GEIH also includes information on income only for main and second activity. We use the "Medición de Pobreza Monetaria y Desigualdad" survey, which includes data on other sources of income to calculate poverty statistics. This survey follows the same methodology used in GEIH, so we can merge the two datasets directly.

Table A1: Data Sources

| Country	Dataset	Source	Dates used
Argentina	EPH	Instituto Nacional de Estadística y Censos, Argentina (2003–2024)	2012q1 - 2019q4,
			Exc 2015q3 - 2016q1
Bolivia	ECE	Instituto Nacional de Estadística, Bolivia (2015–2024)	2016q1 - 2019q4
			Exc 2015q1 - 2015q3, 2018q2 - 2018q3
Brazil	PNADC	Instituto Brasileiro de Geografia e Estatística (2012–2024)	2012q1 - 2019q4
Chile	ENE	Instituto Nacional de Estadística de Chile (1986–2024)	2012q1 - 2019q4
Colombia	GEIH	Departamento Nacional de Estadística, Colombia (2011 - 2024)	2012q1 - 2019q4
Costa Rica	ECE	Instituto Nacional de Estadística y Censos, Costa Rica (2010–2024)	2012q1 - 2019q4
Ecuador	ENEMDU	Instituto Nacional de Estadística y Censos, Ecuador (2007–2024)	2012q1 - 2019q3
			Exc 2019q3 - 2019q4
Mexico	ENOE	Instituto Nacional de Estadística y Geografía, Mexico (1995–2024)	2012q1 - 2019q4
Paraguay	ECE	Instituto Nacional de Estadística, Paraguay (2010–2017)	2012q1 - 2017q4
			Exc 2014q4, 2017q3, 2017q4

A.1 Details on the Definition of Informality

We start with the definition of informality in Donovan et al. (2023). To arrive at a common definition of informality across countries, we make some adjustments as follows:

- Argentina: Donovan et al. (2023) use job benefits of the worker. In this case, informal is defined as being employed and not having any job benefit, while formality includes having at least one type of job benefit. Job benefits include paid leave, Christmas bonus, paid sick leave, and social security. We use contributions to pension funds instead.

- Bolivia: Informality is defined as workers either contributing to a pension fund or the firm having a tax ID.

- Brazil: The survey asks if the worker has a 'carteira de trabalho,' which is an employee record. Formality in this case is defined for employed workers who have a 'carteira de trabalho,' are domestic workers, or contribute to social security.

- Chile: Includes contributions to pension, to the health system, to unemployment insurance. Also, if workers have annual vacation leave, sick leave, maternity leave or daycare.

- Colombia: Workers are formal if they work at a firm with more than 5 workers and contribute to pension funds.

- Costa Rica: Workers are formal if the place they work in is registered and if they have deductions for social security and income tax.

- Ecuador: Workers are formal if they work at a firm that is registered and has more than 100 workers. The survey also includes as informal workers with no income and helpers of wage employees.

- Mexico: There is a variable on the survey that indicates whether the worker is formal or informal. However, the official calculations of the informality rate consider informal workers who are vulnerable due to the nature of the economic unit for which they work, as well as those whose labor dependence does not recognize their source of work. This includes the population working in unregistered micro businesses, as well as self-employed persons in subsistence agriculture, those who work without social security, and those whose services are used by registered economic units. We excluded job benefits from the definition.

- Paraguay: Donovan et al. (2023) use the variable that indicates whether workers' contract has either a defined or undefined term. We add contribution to pension funds to our definition.

B   Extra Tables and Figures

Figure B1: Participation Rate
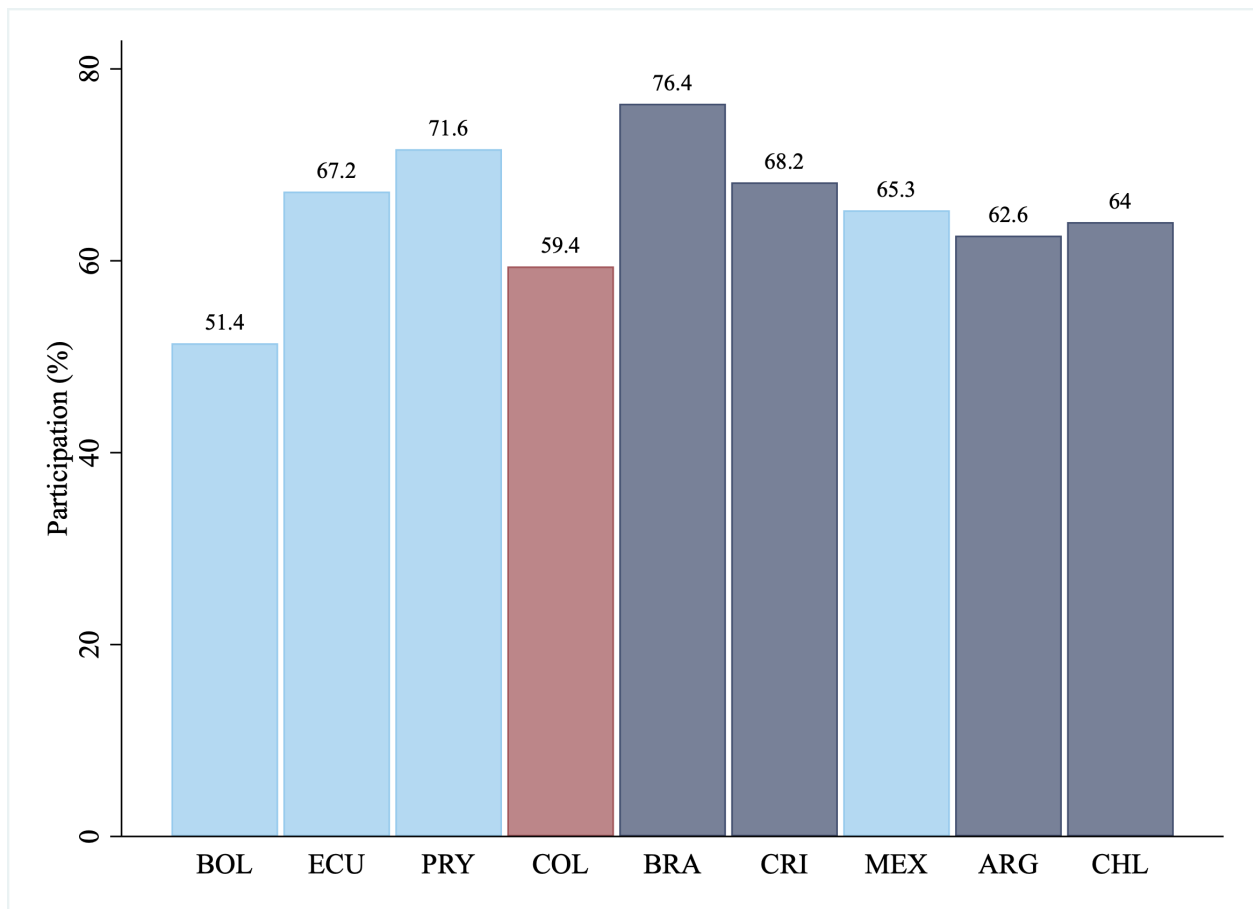
Note: The vertical axis shows the average participation rate per country. Each bar represents a country from our sample, and the bars are ordered from left to right from the lowest to the highest GDP per capita. Bars in light dark blue represent countries in Group I and bars in light blue represent countries in Group IV as used in Figure 1. Data source: Countries' labor market surveys and authors' calculations. See Appendix A for details.

Table B2: Transition Probability: Out of the Labor Force

	Country	NN	NF	NI	NU	FN	IN	UN
I	Argentina	85.49	6.05	6.02	2.44	2.48	14.26	32.40
	Brazil	76.59	8.25	10.43	4.72	3.72	7.67	24.27
	Chile	86.05	4.56	5.35	4.04	3.18	17.78	28.06
	Costa Rica	80.87	10.02	6.79	2.32	2.01	14.55	28.77
IV	Bolivia	71.24	17.51	3.50	7.75	19.36	17.69	41.57
	Ecuador	80.77	11.20	3.24	4.79	4.42	12.31	30.82
	Mexico	81.29	12.59	2.18	3.93	4.44	13.78	26.91
	Paraguay	80.03	12.75	5.93	1.30	1.20	9.61	22.15
	Middle value	78.65	11.04	6.31	4.52	10.28	12.73	31.86
	Coeff of variation	0.06	0.40	0.48	0.51	1.15	0.26	0.20

Note: Each column OD shows the average labor market transition rate per country from the origin state O to the destination state D. N denotes out of the labor force, F denotes formal, I informal, and U unemployment. Countries at the top of the table are those in Group I as defined in Section 2, and countries in the bottom part of the table are those in Group IV. The bottom two rows are the middle value of each column and the coefficient of variation. Highlighted cells represent transitions above the middle value. Data source: Countries' labor market surveys and authors' calculations. See Appendix A for further details.

Table B3: Labor Market Transitions out of the Labor Force by Sex and Education

	Country	Type	NN	NI	NU	NF	FN	IN	UN
			Sex						
I	Argentina	M	81.97	7.47	7.32	3.24	1.49	8.60	22.49
		W	86.88	5.49	5.50	2.13	3.77	19.79	41.23
	Brazil	M	73.60	9.55	11.62	5.23	3.08	5.76	17.80
		W	77.77	7.75	9.96	4.52	4.60	9.80	29.05
	Chile	M	81.84	5.79	6.48	5.89	2.55	13.76	20.32
		W	87.98	4.01	4.83	3.19	4.06	21.70	36.04
	Costa Rica	M	78.07	10.14	8.05	3.75	1.60	8.29	21.10
		W	82.08	9.96	6.26	1.71	2.69	21.35	36.61
IV	Bolivia	M	68.30	17.58	3.68	10.44	16.69	13.47	32.30
		W	73.42	17.29	3.39	5.89	23.62	22.69	50.93
	Ecuador	M	80.98	9.96	3.68	5.37	2.37	5.17	19.03
		W	80.70	11.66	3.07	4.58	7.27	20.76	41.26
	Mexico	M	74.49	15.63	3.99	5.89	2.19	5.52	16.17
		W	83.04	11.81	1.72	3.43	7.96	26.99	43.09
	Paraguay	M	78.08	13.74	6.48	1.70	0.93	6.46	17.64
		W	80.91	12.35	5.63	1.11	2.15	13.23	25.29
			Education						
I	Argentina	H	84.61	3.58	6.35	5.45	1.67	7.78	26.81
		L	85.55	6.20	5.99	2.26	2.84	14.75	33.00
	Brazil	H	78.18	6.88	8.73	6.20	2.34	3.34	19.46
		L	76.46	8.36	10.57	4.60	4.06	8.65	24.71
	Chile	H	79.86	3.95	9.72	6.47	1.52	8.29	19.16
		L	86.71	4.62	4.89	3.78	4.08	20.06	31.33
	Costa Rica	H	79.59	9.01	5.82	5.95	1.42	14.05	22.09
		L	80.96	10.06	6.84	2.14	2.15	14.61	29.30
IV	Bolivia	H	65.64	14.69	5.87	13.81	18.52	21.23	37.37
		L	72.61	18.03	3.08	6.28	19.85	17.03	43.34
	Ecuador	H	70.60	13.26	6.52	9.86	1.83	8.16	22.25
		L	81.20	11.12	3.10	4.58	5.44	12.72	32.76
	Mexico	H	77.89	9.62	3.87	8.62	3.45	13.51	23.77
		L	81.67	12.92	1.99	3.42	4.93	13.80	27.84
	Paraguay	H	75.70	14.38	9.40	9.34	1.42	5.16	18.06
		L	80.36	12.71	5.86	1.07	1.45	10.30	22.85
	Middle value		78.65	11.04	6.31	4.52	10.28	12.73	31.86

Note: Each column OD shows the average labor market transition per country and type of demographics from origin O to destination D. M denotes men, W female, H high-education workers and L low-education workers. N denotes out of the labor force, F formal, I informal, and U unemployment. Countries at the top of each panel are those in Group I as defined in Section 2, and countries in the bottom part of the table are those in Group IV. The bottom row is the middle value of each column, as used in Section 3. Highlighted cells represent transitions above the middle value. Data source: Countries' labor market surveys and authors' calculations. See Section A in the Appendix for further details.