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Informality in the Process of Development and Growth

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Abstract

"Informality" is a term used to describe the collection of firms, workers, and activities that operate outside the legal and regulatory systems. It is widespread in the majority of developing countries—in a typical developing economy, the informal sector produces about 35 percent of gross domestic product and employs 70 percent of the labor force. This paper studies informality in the context of economic development by presenting a model and projections that link informality, regulations, migration, and economic growth. This analytical framework highlights the trade-offs between formality and informality, the relationship between the different types of informality, and the connection between them and the forces of labor, capital, and productivity growth. The paper models the behavior of the informal sector based on the following fundamental asymmetry: formal firms confront higher labor costs while informal firms face higher capital costs and lower productivity. Using mandated minimum wages as the policy-induced distortion, the model first studies the static allocation of formal and informal capital and labor in a modern economy. Second, it opens the possibility of labor migration from a rudimentary economy with an ample supply of labor (rural areas or less advanced neighboring countries). Third, the model analyzes the dynamic behavior of the formal and informal sectors, considering how they affect and are affected by economic growth and labor migration. Then, the paper presents projections for the size of labor informality, in the modern and rudimentary economies, in the next two decades for a large group of countries representing all regions of the world. The projections are based on the calibration and simulation of the model and serve to discuss its usefulness and limitations.

JEL: E26, E24, J46, O17, O11, O15, O40, O47

Keywords: Informality, Minimum Wage, Labor Costs, Economic Growth, Migration, Labor Market, Financial Constraints, Productivity

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1. Introduction

This paper aims at understanding informal labor, placing it in the process of development, allowing for its heterogeneity, and linking it to migration, modernization, and economic growth. We propose to do this through a theoretical growth model and an international data application. The latter consists of using the model and its calibration to project the behavior of informal labor in the next two decades for a large number of countries around the world.

"Informality" is a term used to describe the collection of firms, workers, and activities that operates outside the legal and regulatory frameworks or outside the modern economy. While informality offers the benefits of avoiding the burden of regulation and taxation, its participants suffer the costs of not having the protection and services that the law and the State can provide. Informality is sometimes the result of agents "exiting" the formal sector as a consequence of cost-benefit considerations; other times, it is the outcome of agents being "excluded" from formality as this becomes restrictive and the economy segmented.

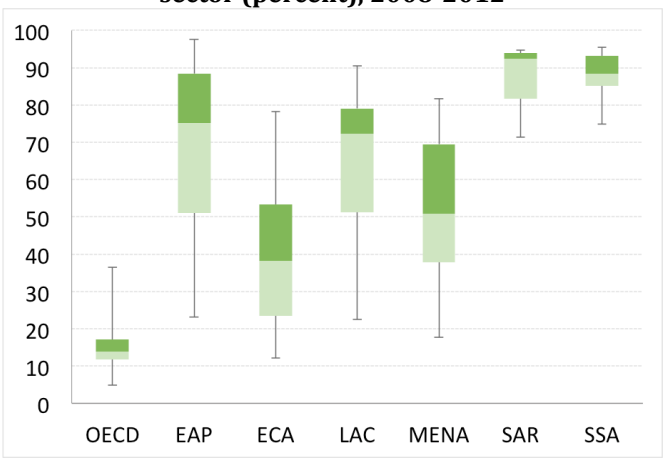
Informality is a fundamental characteristic of underdevelopment. It is best understood as a complex, multifaceted phenomenon. It is determined by both the inherent characteristics of developing economies (such as low physical and human capital) and by the relationship that the State establishes with private agents (through regulation, monitoring, and the provision of public services). The received literature finds evidence that the relative size of the informal sector declines with overall development, rises with the burden of regulation, and decreases with the strength of enforcement (see Schneider and Enste, 2000; Friedman et al., 2000; and Loayza, Oviedo, and Servén, 2005).

Informality is not only a reflection of underdevelopment; it may also be the source of further economic retardation. It implies misallocation of resources and entails losing the advantages of legality, such as police and judicial protection, access to formal credit institutions, and participation in international markets. Informality can then lead to slow capital accumulation, low economic growth, and sluggish migration to more productive areas. The evidence shows that informal firms tend to be smaller and have lower productivity, and that differences in the size of the informal sector can account for a

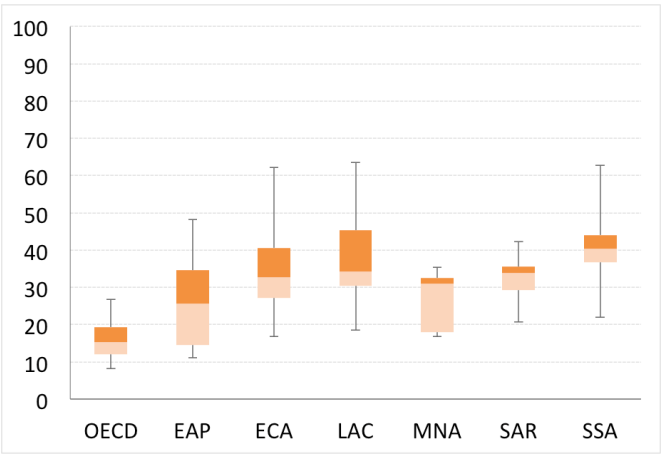
significant portion of differences in output per capita between rich and poor countries (see La Porta and Shleifer, 2014; Mel, McKenzie and Woodruff, 2008; and Prado, 2011).

Figure 1. The Prevalence of Labor and Production Informality around the World

a. Estimated share of the labor force in the informal sector (percent), 2008-2012



b. Production by the informal sector (percent of GDP), 2007



Note: The box plots show the minimum value, the range from the 25th percentile to the median (shaded light), the range from the median to the 75th percentile (shaded dark), and the maximum value for each region.
Source:
a. Own estimates using Active contributors to a pension scheme (latest available) from World Bank HDNSP pensions database and Total Labor Force and Employment (2008-2012) from World Development Indicators (WDI)
b. Schneider et al (2011)

Although there is a great deal of heterogeneity regarding informality among developing countries, informality is widespread in the majority of them (see Figure 1). The typical developing country produces about 35 percent of its GDP and employs over 70 percent of its labor force informally (using, respectively, the Schneider Index and the rate of pension coverage). These are remarkable statistics, which indicate that informality is a substantive and pervasive phenomenon that must be explained and addressed, particularly in the design of development policies. The goal of reducing informality can shed new light on the relevance of short-run policies --such as streamlining regulations and strengthening monitoring and enforcement-- and long-run strategies --such as improving judicial services, providing public infrastructure and services, and contributing to human capital formation.

For most experts, informality is likely to appear as one of the most difficult challenges facing developing countries. Not surprisingly, it is often at the top of policy makers' priorities. Yet, there is much confusion on basic definitions and measurement of informality and about

its causes and consequences. For example, if labor informality is measured only in connection with firms (or multi-person enterprises), its largest segment composed of the self- and family-employed will be missing. In turn, confusion on definitions and causes can lead to misguided advice about confronting informality. For instance, if it is perceived as solely the result of weak enforcement, the advice may be to strengthen monitoring and harden penalties against informal firms, which could result in worse problems – unemployment, self-employment, and further reductions in the size of firms. Likewise, if informality is perceived as purely the result of State regulations, the recommendation may be to lift them, only to realize that the consequent reduction in informality is limited and small.

Informality is a well-researched topic with contributions from different perspectives. However, there is no encompassing study that endogenizes informal labor alongside worker migration and capital accumulation, considering how they affect and are affected by each other. Moreover, there is no study that allows comparing the expected trajectories of the basic types of informal labor across developing countries. This paper contributes to fill in these gaps. First, it seeks to clarify the definition, causes, and consequences of informality, studying it in the process of development. Allowing for heterogeneity of labor informality – that is, whether linked to firm- or self-employment—is critical for analysis and measurement. To accomplish this objective, we develop a tractable theoretical model that connects informality, government regulations, economic growth, and labor migration. Second, the paper looks to obtain sensible estimates for the evolution of the informal sector in developing countries over the next few decades, linking this evolution to other underlying forces in the economy under various scenarios. For this purpose, we build a secondary database on recent estimates of the informal sector and related variables, and then use it to calibrate and simulate the model for a large selection of countries around the world. We provide a spreadsheet-based toolkit that contains these simulations and allows researchers to modify parameters, initial conditions, and assumptions to construct their own scenarios.

The rest of the paper proceeds as follows. Section 2 presents a literature review. Section 3 develops the theoretical model. Section 4 describes the data and calibration exercise, and presents and discusses the informality projections. Section 5 offers some concluding remarks.

2. Literature Review

The literature on the economics of informality is deep and diverse. It gained momentum in the late 1980s with the publication of *The Other Path*, where Hernando de Soto and coauthors present the informal sector as the private sector´s response to an overly regulated economy and an inefficient State. This approach departed from the then prevailing one in which informality was regarded as merely a symptom of underdevelopment rather than the result of misguided policies. This tension between development and policies as determinants and constraints of informality is present, in one way or another, in all modern studies of the subject.

At the risk of oversimplification, the informality literature can be divided in two basic strands, according to the trade-offs that generate the informal sector. One takes a public finance perspective, emphasizing the trade-off between taxes and public services: informal firms avoid taxes at the cost of reduced access to public services and being subject to penalties.[1] Another strand takes a labor perspective, focusing on the trade-off between labor and capital costs: informal firms avoid mandated labor costs (such as minimum wages, benefits, and firing constraints) at the cost of higher capital costs (which may result from informal agents' inability to enter into contractual agreements). The two trade-offs are indeed related, but choosing one of them provides tractability and emphasis: if the interest is in understanding tax evasion, the first trade-off is the obvious choice; if informal labor is the primary interest, the second approach is more suitable.

In this paper, we focus on the labor market perspective and, therefore, devote the rest of the review to this strand of the literature. This strand focuses on informal employment, studying its determinants and often placing particular attention on wage differences across formal and informal sectors. Much of this literature has intellectual roots in Harris and Todaro's (1970) proposed model of migration from an agricultural sector to an urban area, in which high fixed wages can result in open unemployment. Fields (1975) extended this model to include informality as an alternative for rural migrants unable to find formal jobs in urban areas.

[1] See Loayza (1996), Johnson et al. (1998), Ihrig and Moe (2004), Prado (2011), and D'Erasmo and Moscoso Boedo (2012).

Building further on these papers, Rauch (1991) develops a model in which informal firms are created as a result of a minimum wage set above the market wage but only imposed on firms larger than a certain size. Firms thus faced a trade-off between operating in the formal sector and paying a higher mandated cost of labor, and operating in the informal sector and being unable to hire the profit-maximizing amount of labor. Allowing for differences in managerial talent, the paper finds that, in equilibrium, the size distribution of firms would reflect the underlying distribution of managerial talent.

A trade-off between labor costs and capital costs is introduced in Chaudhuri (1989). Chaudhuri presents a three-sector static model (agricultural sector, and formal and informal urban sectors), with a wage distortion in the form of a unionized wage which is enforced only in the formal sector. Citing evidence from the high interest rates paid by the informal tailoring and tannery industry in Calcutta, Chaudhuri introduces higher capital costs for informal firms into the model. This framework is also used in Gupta (1993) to explore the effects of government subsidies on the size of the informal sector and social welfare. Finally, Kar and Marjit (2001) equalizes the wages in the informal sector and rural sector to reflect the existence of significant mobility between the two.

More recently, Saracoğlu (2008) studies the evolution of informal sector output and employment in the process of long-term economic growth using an urban-rural model with migration. However, a different trade-off is used to generate the informal sector. In the model, firms in each sector produce different goods and have different production functions. As households get wealthier, their demand for urban informal and agricultural goods decreases, which results in a trade-off with the higher labor costs faced by formal firms due to employment taxes. Over time, this leads to an increase in the share of labor employed in the formal sector.

Finally, a number of authors have used matching labor market models, based on Mortensen and Pissarides (1994), to study informal employment (e.g. Fugazza and Jacques, 2004; Bosch and Maloney, 2010; Albrecht et al., 2009; Gunther and Launov, 2012). Unlike in the majority of literature based on the Harris and Todaro model, in matching-based models, the wage in the urban formal sector is endogenous. However, these analyses typically focus on worker heterogeneity and the process of job creation and search, rather than on the existence of opportunity costs for formal and informal employment. For instance,

Bencivenga and Smith (1997) and Yuki (2007) conduct dynamic analyses of rural-urban migration, long-term development, and the size of the informal labor market using this approach. In both models, however, the informal sector is residual, consisting of workers who are unskilled or unable to find jobs in the urban formal sector after migrating to an urban area.

3. The Model

Before delving into the technical aspects of the model, we now present a sketch of its main components and derivation. There are three agents in the economy: Workers provide labor and have similar basic skills; capitalists save and provide capital that may include both physical and human capital; and government sets a minimum wage in theory to benefit workers. There are two coexisting economies: A *modern* economy that is organized in firms using a superior technology and employing both capital and labor; and a *rudimentary* economy that represents the self-employed using an inferior technology that employs only labor. In turn, the economy can be separated into formal and informal sectors: The *formal* sector belongs to the modern economy and conforms to high government-mandated labor costs; the *modern informal* sector also belongs to the modern economy but, contravening labor regulations, pays low labor costs and confronts high capital costs and lower total factor productivity; and the *rudimentary informal* sector includes the self-employed, outside the modern economy as result of subsistence and reservation strategies. Considering two types of informal sectors opens the possibility for a more nuanced analysis into the roles of regulations, capital accumulation, and technology in driving informality.

The model then approaches the study of informality based on the following fundamental asymmetry: The formal sector confronts high labor costs while the informal sectors face higher capital costs and lower productivity. The solution of the model proceeds in the following steps. First, we derive the static allocation of capital and labor across formal and informal sectors, holding constant the total endowments of capital, labor, and total factor productivity. Second, we derive the dynamic solution for the paths of the formal and informal sectors as well as for economic growth. The dynamic evolution is driven by capital accumulation through optimal endogenous savings, labor growth according to exogenous

population expansion and participation rates, and TFP growth also determined exogenously. The dynamic solution builds on the static one; and in both cases, we first develop the case where the whole economy is modern and then add the rudimentary economy and its interaction with the modern one.

3.1 The Modern Economy

The modern economy is competitive and decentralized, with firms hiring production factors from their owners. All firms produce one good (Y), which can be equivalently used for consumption or investment. Firms share a basic production technology, which has the neoclassical characteristics (namely, constant returns to scale, decreasing returns to each factor, and the Inada conditions) and the property that production factors are complementary to each other. For simplicity we assume that the production function is Cobb-Douglas, with production factors capital (K) and labor (L) and total factor productivity (A). Output production is then given by,

$$Y = AK^{\alpha}L^{1-\alpha}, \quad 0 < \alpha < 1 \qquad (1)$$

We assume that labor-market regulations are represented by a minimum legal wage rate. Firms that obey the minimum wage belong to the formal sector, and firms that ignore it correspond to the informal sector. Firms cannot belong to both sectors at the same time.

Firms in the informal sector have lower productivity than firms in the formal sector. First, their total factor productivity (TFP) is a fraction of that in the formal sector. Second, the illegal status of informal firms makes contractual agreements more difficult and costly, especially in capital and financial markets. Because of additional monitoring and transaction costs, informal firms face a higher cost of capital than their formal counterparts. We model these (per-unit) additional capital costs as proportional to the market-determined rental rate of capital. Capital owners receive the same rental rate (net of monitoring and transaction costs) from either sector and, thus, are indifferent between the two.

Static equilibrium

The static equilibrium solution consists of the market allocation of given aggregate labor and capital across the formal and informal sectors.

Profits for formal firm *i* are given by,

$$\Pi_{F,i} = AK_{F,i}^{\alpha}L_{F,i}^{1-\alpha} - WL_{F,i} - RK_{F,i} \qquad (2)$$

where W is the (binding) minimum legal wage rate, and R is the market-determined net capital rental rate.[2]

Profits for informal firm *j* are given by,

$$\Pi_{i,j} = aAK_{i,j}^{\alpha}L_{i,j}^{1-\alpha} - W_I L_{i,j} - \zeta R K_{i,j} \qquad (3)$$

where W_I is the market-determined informal wage; a, $0 < a < 1$, is the fraction of total factor productivity available to firms in the informal sector; and the parameter ζ, $\zeta > 1$, is the factor of proportionality due to transaction and monitoring costs. This parameter measures the degree of inefficiency in capital allocation to informal firms.

Since the production technology is constant returns to scale, the size of firms in the economy is indeterminate. Firms in each sector choose the ratio of capital to labor that maximizes their profits. There is one such ratio for all firms in the formal sector and another one for all firms in the informal sector. Because of this, in what follows we use subscripts to differentiate firms across sectors but not within each sector.

We now characterize the equilibrium for a binding minimum legal wage, that is, when the minimum legal wage is higher than the unregulated market wage:[3]

$$W > W_{UNR} = A\alpha\left(\frac{K}{L}\right)^{\alpha} \qquad (4)$$

We assume that the minimum wage is not so high as to drive all the economy to informality.

Profit maximization by firms, the zero-profit condition, and full-employment market clearing dictate the following equilibrium conditions. In the formal sector, the marginal product of labor (*MPL*) and marginal product of capital (*MPK*) are given by,

$$MPL_F = A\,(1-\alpha)\left(\frac{K_F}{L_F}\right)^{\alpha} = W \qquad (5)$$

$$MPK_F = A\,\alpha\left(\frac{K_F}{L_F}\right)^{-(1-\alpha)} = R \qquad (6)$$

Correspondingly, in the informal sector,

$$MPL_I = aA(1-\alpha)\left(\frac{K_I}{L_I}\right)^{\alpha} = W_I \qquad (7)$$

$$MPK_I = aA\alpha\left(\frac{K_I}{L_I}\right)^{-(1-\alpha)} = \zeta R \qquad (8)$$

[2] We normalize the factor of proportionality due to monitoring and transaction costs to 1 in the formal sector. Therefore, the capital rental rate paid by formal firms is equal to the net rental rate received by capital owners.
[3] The unregulated market wage is the wage obtained in the absence of the mandated minimum wage.

The minimum legal wage rate plays a pivotal role in the determination of the net capital rental rate and the informal wage rate because it fixes the capital-labor ratio in the formal sector. From (5),

$$\frac{K_F}{L_F} = \left(\frac{W}{A(1-\alpha)}\right)^{\frac{1}{\alpha}} \qquad (9)$$

Equation (9) shows that K_F/L_F depends positively on the minimum wage (W) and negatively on the productivity parameter (A). In fact, as will be seen often throughout the paper, what matters is the minimum wage relative to productivity. Note that the capital-labor ratio in the formal sector is larger than in the overall modern economy, $K_F/L_F > K/L$, and that this distortion gets reduced if productivity increases.

The net capital rental rate is a negative function of the minimum wage; substituting (9) into (6),

$$R = \left(A\alpha^{\alpha}(1-\alpha)^{(1-\alpha)}\right)^{\frac{1}{\alpha}} W^{\frac{-(1-\alpha)}{\alpha}} \qquad (10)$$

Given that the cost of capital and total factor productivity in the informal sector are equal to fixed proportions of those in the formal sector, the ratio K_I/L_I is a fraction of the ratio K_F/L_F. Dividing (8) by (6),

$$\gamma \equiv \frac{\frac{K_I}{L_I}}{\frac{K_F}{L_F}} = \left(\frac{\zeta}{a}\right)^{\frac{-1}{(1-\alpha)}} \qquad (11)$$

which implies that the informal sector is less capital intensive than the formal sector. Under full employment ($K = K_F + K_I$ and $L = L_F + L_I$), it follows from the equilibrium conditions that,

$$\frac{K_I}{L_I} < \frac{K}{L} < \frac{K_F}{L_F} \qquad (12)$$

Since K_I/L_I is determined by K_F/L_F, we can express the informal wage rate as a function of the minimum wage rate. Substituting (11) and (9) into (7),

$$W_I = a^{\frac{1}{1-\alpha}} \zeta^{\frac{-\alpha}{1-\alpha}} W \qquad (13)$$

The informal wage is lower than the legal minimum, with the difference being a positive function of the relative formal-to-informal capital intensity. Note that the informal wage increases with the legal minimum wage, but less than proportionally.[4]

[4] A strand of the literature labels as "lighthouse effect" the dependence of the informal wage on the minimum wage. Note that this is derived here as an equilibrium condition, unrelated to signaling, efficiency wages, or any other nonstandard effect.

Full employment of production factors allows us to determine the actual quantities of formal and informal labor and capital from the equilibrium conditions. From equations (9) and (11) and the full employment condition, we can obtain expressions for L_F and L_I in terms of the minimum (W), the capital market distortion in the informal sector (ζ), the total factor productivity in the formal sector (A), the fraction of TFP in the informal sector (a), as well as aggregate labor (L) and capital (K) in the modern economy,[5]

$$L_F = \frac{-\gamma}{1-\gamma} L + \frac{1}{1-\gamma} \left(\frac{W}{A(1-\alpha)} \right)^{-\frac{1}{\alpha}} K \qquad (14)$$

$$L_I = \frac{1}{1-\gamma} L - \frac{1}{1-\gamma} \left(\frac{W}{A(1-\alpha)} \right)^{-\frac{1}{\alpha}} K \qquad (15)$$

Analogously for K_F and K_I,

$$K_F = \frac{1}{1-\gamma} K - \frac{\gamma}{1-\gamma} \left(\frac{W}{A(1-\alpha)} \right)^{\frac{1}{\alpha}} L \qquad (16)$$

$$K_I = \frac{-\gamma}{1-\gamma} K + \frac{\gamma}{1-\gamma} \left(\frac{W}{A(1-\alpha)} \right)^{\frac{1}{\alpha}} L \qquad (17)$$

Note, in particular, that the share of formal and informal labor in the modern economy depend on the ratio of formal labor cost (W) to productivity (A).

Comparative Statics

We now consider the impact of changes in the minimum wage paid by formal firms, in total factor productivity, in capital-market distortions and productivity shortfalls facing informal firms, and in the aggregate amounts of capital and labor.

i. An increase in the minimum wage leads to,

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[5] Equations (14) - (17) make clear how the coexistence of both sectors in the economy requires that the legal minimum wage be in between two limiting values. The lower limit W' is such that for a minimum wage W equal or lower than W', the economy is completely formal. Then, W' is the value at which the minimum wage is just binding,

$$W' = A(1-\alpha) \left(\frac{K}{L} \right)^{\alpha}$$

The upper limit W'' is the value at and above the whole economy is informal (since no firm can afford to pay the legal wage while paying the competitive rental rate of capital). From equation (15), W'' is given by,

$$W'' = \left(\frac{\zeta}{a} \right)^{\frac{\alpha}{1-\alpha}} A(1-\alpha) \left(\frac{K}{L} \right)^{\alpha}$$

Equations (14) - (17) were developed under the equilibrium conditions where both formal and informal firms are present in the economy. Not surprisingly, they make no sense when W is lower than W' or higher than W''.

- A rise of the informal wage, but also a wider gap between formal and informal wages.
- A fall in the net capital rental rate.
- An expansion of the informal sector and corresponding contraction of the formal sector.

ii. An increase in the fraction of total factor productivity available for informal firms or a reduction in the capital-market distortion facing informal firms (because, for instance, the informal sector develops enforcement systems that cut down their transaction and monitoring costs) generates,

- A rise of the informal wage, and a narrower gap between formal and informal wages.
- A fall in the informal capital rental rate (only when the capital market distortion decreases), approaching the net capital rental rate (which remains unchanged).
- An expansion of the informal sector and corresponding contraction of the formal sector.

iii. A decrease in the aggregate capital to labor ratio (because, for instance, there is labor immigration) leads to,

- A rise in the relative size of the informal sector.[6]
- However, the wage and capital rental rates remain unchanged, not reflecting the relative scarcities of the factors of production.

3.2 The modern economy in the presence of a rudimentary economy

A rudimentary economy and migration equilibrium

Assume that the modern economy described above is accompanied by a rudimentary economy, active in rural and marginal areas (and possibly in neighboring countries). This primitive economy represents, for example, the subsistence strategies of the self-employed, for whom labor legislation does not apply. As a simplification, the production technology of the rudimentary economy does not use capital and is linear in labor (Lewis 1954),

$$Y_R = bAL_R \qquad (18)$$

where the labor productivity parameter, b, in the rudimentary economy is a (constant) fraction, $0 < b < 1$, of total factor productivity in the formal sector (A).

[6] If only one aggregate factor changes, the model can predict the change in the absolute size of each sector. For instance, when labor immigration occurs and the capital stock remains constant, the absolute size of the informal sector rises whereas the absolute size of the formal sector shrinks.

In the absence of distortions, the wage in the rudimentary economy is equal to labor productivity,

$$W_R = bA \qquad (19)$$

Assume, for simplicity, that there are no fixed moving costs. All workers, therefore, face the same migration decision, which considers only current wage opportunities in the rudimentary and modern economies. The migration equilibrium condition resembles that introduced by Harris and Todaro (1970). Assuming that workers are risk neutral, the migration equilibrium condition is given by,[7]

$$W_E = \mu W_R \qquad (20)$$

where W_E is the expected wage in the modern economy, W_R is the wage in the rudimentary economy, and μ represents the wage adjustment between the two economies. The wage adjustment accounts for differences in the cost of living (if the modern and rudimentary economies operate in different areas) or in the cost of labor participation (for instance, child care and transportation expenses). If costs of living and labor participation are higher in the modern economy, then $\mu > 1$.

The rate of job turnover affects the share of jobs open to migrants in the modern economy. Assume that there is complete job turnover in the modern economy.[8] This implies that W_E is equal to a weighted average of formal and informal wages with weights given by each sector's respective size,

$$W_E = \frac{L_F}{L} W + \frac{L_I}{L} W_I \qquad (21)$$

Given the possibility of immediate labor relocation across the two economies, the equilibrium condition in equation (20) must hold at all times.[9]

Endogenous aggregate, formal, and informal labor in the modern economy

The analysis presented in the previous section, on the modern economy, applies also in the presence of a rudimentary economy under the conditions outlined below. In

[7] The assumption of risk neutrality is not necessary for the analysis but is algebraically convenient for the purpose of comparative statics.

[8] In an appendix, we develop the case where partial job turnover in the formal economy is allowed while retaining the realistic assumption of complete turnover in the informal sector.

[9] In Harris and Todaro (1970), migration is a disequilibrium phenomenon. It occurs when the expected urban wage is higher than the rural wage. Implied in their analysis are migration costs that preclude the possibility of immediate relocation of labor from rural to urban areas. Therefore, in that model, the migration equilibrium condition is achieved only in the long run.

particular, equations (5) to (17), which determine the informal wage and capital rental rates and the relative size of each sector, still hold true. The main difference is that in the presence of a rudimentary economy (with ample supply of labor), aggregate labor in the modern economy is no longer autonomously given but depends on the migration equilibrium.

Let's start by finding the relative size of formal and informal labor in the presence of a rudimentary economy.[10] Using the migration equilibrium condition (equation (20)), the relationship between formal and informal wages (equation (13)), and the full employment condition,

$$\frac{L_F}{L} = \frac{\frac{\mu bA}{W} - a^{\frac{1}{1-\alpha}}\zeta^{\frac{-\alpha}{1-\alpha}}}{1 - a^{\frac{1}{1-\alpha}}\zeta^{\frac{-\alpha}{1-\alpha}}} \qquad (22)$$

$$\frac{L_I}{L} = \frac{1 - \frac{\mu bA}{W}}{1 - a^{\frac{1}{1-\alpha}}\zeta^{\frac{-\alpha}{1-\alpha}}} \qquad (23)$$

As expected, the relative size of the informal sector in the modern economy increases with the minimum legal wage (W) and the ratio between productivity in the informal and formal sector (a), and decreases with the degree of inefficiency in capital allocation to informal firms (ζ) and the adjusted wage in the rudimentary economy (μbA). The effects of changes in W, a, ζ, and μbA on the absolute size of the formal and informal sectors go in the same direction as the effects on their respective relative sizes. This is not obvious, as it was in the case of an isolated modern economy, because of the additional effects of those parameters on the modern labor force. Note, again, that the shares of formal and informal labor in the modern economy depend on the minimum wage *relative* to productivity.

We can now solve the aggregate capital-labor ratio in the modern economy, which is endogenous given the possibility of labor migration. Using the relationship between formal

[10] In order for the modern economy to present both formal and informal sectors, the minimum legal wage must be within the following range. The lower limit W' is the value at which the minimum wage is just binding ($L_F/L = 1$ in equation (23)), which is the unregulated modern economy wage in the presence of a rudimentary economy,

$$W' = \mu bA$$

The upper limit W'' is the value at which the economy just becomes completely informal ($L_F/L = 0$ in equation (23)):

$$W'' = a^{\frac{-1}{1-\alpha}}\zeta^{\frac{\alpha}{1-\alpha}}(\mu bA)$$

Note that when $W = W''$, the informal wage is equal to the adjusted wage in the rudimentary economy ($W_I = \mu bA$).

and informal capital-labor ratios (equation (11)), the equilibrium condition for the minimum wage in the formal sector (equation (5)), and the formal and informal labor shares (equations (22)-(23)), we obtain the following expression for the capital-labor ratio,

$$\frac{K}{L} = \left(\frac{W}{A(1-\alpha)}\right)^{\frac{1}{\alpha}}\left[1 - \left(1 - \left(\frac{\zeta}{a}\right)^{\frac{-1}{1-\alpha}}\right)\left(\frac{1-\frac{\mu bA}{W}}{1-a^{\frac{1}{1-\alpha}}\zeta^{\frac{-\alpha}{1-\alpha}}}\right)\right] \qquad (24)$$

Given the level of the capital stock, equation (24) allows us to solve for the aggregate labor force in the modern economy that is consistent with migration equilibrium,

$$L = \left(\frac{\left(1-a^{\frac{1}{1-\alpha}}\zeta^{\frac{-\alpha}{1-\alpha}}\right)\left(\frac{A(1-\alpha)}{W}\right)^{\frac{1}{\alpha}}}{\left(\frac{\zeta}{a}\right)^{\frac{-1}{1-\alpha}} + \frac{\mu bA}{W}\left(1-\left(\frac{\zeta}{a}\right)^{\frac{-1}{1-\alpha}}\right) - a^{\frac{1}{1-\alpha}}\zeta^{\frac{-\alpha}{1-\alpha}}}\right)K = g(A/W, \zeta, \alpha, a, b, \mu)K \qquad (25)$$

The labor force in the modern economy is increasing in the capital stock and the degree of inefficiency in capital allocation to informal firms (ζ), and decreasing in the ratio between productivity in the informal and formal sector (a) and the adjusted wage in the rudimentary economy (μbA). Formal sector total factor productivity and the minimum wage enter symmetrically into the g(.) function, so that proportional changes in W and A cancel each other out. Furthermore, for changes in the minimum wage holding other things constant, it can be shown that the labor force when the modern economy is partially informal is always lower than when the economy is fully formal (nonbinding minimum wage). The intuition behind the last result is that when the economy is mixed, the capital-labor ratio must increase to compensate for the inefficient use of capital in the informal economy; since, at a point in time, the capital stock is fixed, the adjustment in the capital-labor ratio must occur through labor migration.

Comparative Statics

Changes in the minimum wage paid by formal firms, in the capital-market distortions facing informal firms, and in the fraction of total factor productivity available to informal firms have the same qualitative impact as in the case of an isolated modern economy. Consider now, in addition, changes in the adjusted wage of the rudimentary economy and in the capital stock of the modern economy.

i. A decrease in the adjusted wage of the rudimentary economy (because of, for instance, worsening rural-urban terms of trade or improving urban public infrastructure and services) leads to,

- A rise in the labor force of the modern economy.
- An expansion in the relative and absolute size of informal labor.

ii. A decrease in aggregate capital (because, for instance, there is international capital flight or capital destruction) generates,

- A decline in the size of the labor force in the modern economy.
- A proportional decrease in both formal and informal labor, so that the relative shares of formal and informal employment remain constant.

3.3 Dynamics: Capital accumulation, labor migration, and economic growth

The aggregate labor force and the capital stock in the economy change through time, thus affecting the size of the formal and informal sectors. The labor force in the modern economy expands by migration from the rudimentary economy and by natural population increase, and the capital stock grows according to a program of saving and investment.

Capital Accumulation

We assume that there are two different groups of individuals: Workers and capitalists. Workers supply labor inelastically and do not save or borrow.[11] Capitalists do not work but rent out their capital to firms, and they save according to an optimal intertemporal program. These assumptions amount to a version of Kaldor's model of distribution (Kaldor (1956) and Alesina and Rodrik (1991)).

Normalize the size of the group of capital owners to 1. Capitalists solve the following dynamic program:

$$Max \int_0^{\infty} e^{-\rho t} \, ln\big(C(t)\big) dt$$

subject to

$$\dot{K}(t) = R(t)K(t) - \delta K(t) - C(t)$$

[11] This assumption means that workers' desired level of current consumption is equal or higher than their wage. Because of financial market imperfections, they are unable to obtain loans against their future higher income and are constrained to consume only their entire current wage.

where C represents instantaneous consumption by capitalists, ρ is the subjective rate of time preference, and δ is the capital depreciation rate. The assumption that the instantaneous utility function is logarithmic proves to be very convenient, as we show shortly.

Utility maximization implies the following necessary and sufficient conditions:

$$\frac{\dot{C}(t)}{C(t)} = R(t) - \delta - \rho \qquad (26)$$

$$\lim_{t\to\infty} K(t)\, e^{-\int_0^t (R(v)-\delta)dv} = 0 \qquad (27)$$

The Euler equation in (26) gives consumption growth as a function of the capital rental rate. The transversality condition in equation (27) ensures that not "too much" is saved. They, together with the budget constraint, allow us to solve for the level of consumption as a function of the (current) capital stock,

$$C(t) = \rho K(t) \qquad (28)$$

The propensity to consume out of capital is equal to ρ, a constant.[12] Using the Euler equation, we obtain,

$$\frac{\dot{K}(t)}{K(t)} = \frac{\dot{C}(t)}{C(t)} = R(t) - \delta - \rho \qquad (29)$$

From previous sections, we know that as long as the modern economy is mixed (formal/informal), the capital rental rate is determined by the minimum wage (W) and productivity (A). Substituting equation (10) into (29),

$$\frac{\dot{K}(t)}{K(t)} = (A(1-\alpha)^{1-\alpha}\,\alpha^{\alpha})^{\frac{1}{\alpha}} W^{\frac{-(1-\alpha)}{\alpha}} - \delta - \rho \qquad (30)$$

Migration

From the migration equilibrium condition, equation (25) establishes a relationship between labor expansion and capital accumulation in the modern economy. Taking logs and then time derivatives in (25), we obtain,

$$\frac{\dot{L}}{L} = \frac{dlng(A/W,\alpha,\gamma,a,b,\mu)}{dt} + \frac{\dot{K}}{K} = \phi(t) + \frac{\dot{K}}{K} \qquad (31)$$

[12] If, instead of a logarithmic utility function, we used a general constant relative risk aversion (CRRA) utility function, the level of consumption would also have been a linear function of the capital stock. However, the propensity to consume out of capital would not, in general, have been a constant but a function of the entire future path of capital rental rates. This would have complicated the analysis since the path of rental rates depends on whether and when the future economy is partially or completely formal, which in turn depends on the rate of capital accumulation.

The labor force in the modern economy grows at the same rate as the capital stock when fundamental and policy parameters remain the same and when minimum wages and total factor productivity in the formal sector change proportionally (constant A/W). Alternatively, labor in the modern economy grows faster than aggregate capital if the function $g(.)$ increases over time *($\phi(t) > 0$)* and vice versa. Suppose, for instance, that the modern economy is urban and the rudimentary economy is rural. Then, urban-bias policies that gradually push down the cost of living in urban relative to rural areas (declining parameter μ) will make the urban labor force grow faster than the capital stock.

Next, we determine the rate of immigration into the modern economy. Let the rate of natural population increase in the modern and rudimentary economies be n_m and n_r, respectively. Then, for as long as there is some labor force in the rudimentary economy, the rate of immigration into the modern economy (m) is given by,

$$m = \frac{\dot{L}}{L} - n_m = \phi(t) + \frac{\dot{K}}{K} - n_m \qquad (32)$$

There is labor migration from the rudimentary to the modern economy if n_m is sufficiently small.[13]

Economic Growth

Total output growth in the modern economy depends on the growth rates of formal and informal output, weighted by their respective shares,

$$\frac{\dot{Y}}{Y} = \frac{Y_F}{Y}\frac{\dot{Y_F}}{Y_F} + \frac{Y_I}{Y}\frac{\dot{Y_I}}{Y_I} \qquad (33)$$

where, from the production function (equation (1)),

$$\frac{\dot{Y_F}}{Y_F} = \frac{\dot{A}}{A} + (1-\alpha)\frac{\dot{L_F}}{L_F} + \alpha\frac{\dot{K_F}}{K_F} \qquad (34)$$

$$\frac{\dot{Y_I}}{Y_I} = \frac{\dot{A}}{A} + (1-\alpha)\frac{\dot{L_I}}{L_I} + \alpha\frac{\dot{K_I}}{K_I} \qquad (35)$$

We consider two stages: The first is when immigration from the rudimentary economy is active (and, therefore, the labor force in the modern economy is endogenous), and the second is when migration has halted (and the labor force grows exogenously).

[13] Note that population growth in the rudimentary economy does not affect the rate of immigration into the modern economy. The reason is that, for simplicity, we assume that the rudimentary technology is linear in labor, that is, not facing decreasing returns. Otherwise, larger population growth in the rudimentary economy would prompt higher rates of migration.

When immigration is active, the aggregate capital/labor ratio is constant as long as the value of the function $g(.)$ remains the same (see equation (31)). This is the case when the technological parameters in $g(.)$ are constant and changes in the minimum wage (W) are proportional to changes in total factor productivity in the formal sector (A) (see equation (25)). In what follows, we assume that these conditions apply, except when noted.

From the expressions for formal and informal labor and capital (equations (14)-(17)), a constant aggregate capital-labor ratio implies constant shares of formal and informal capital in total capital, and constant shares of formal and informal labor in total labor (in the modern economy). In turn, these constant shares imply that the growth rates of formal, informal, and total capital are the same ($\dot{K_F}/K_F = \dot{K_I}/K_I = \dot{K}/K$) and likewise for labor ($\dot{L_F}/L_F = \dot{L_I}/L_I = \dot{L}/L$). It then follows that when migration is active, the growth rate of total output is equal to the growth rates of formal and informal output. Moreover, taking into account that the aggregate capital-labor ratio is fixed under migration equilibrium, the growth rate of total output in the modern economy is given by,

$$\frac{\dot{Y}}{Y} = \frac{\dot{A}}{A} + (A(1-\alpha)^{1-\alpha}\alpha^{\alpha})^{\frac{1}{\alpha}} W^{\frac{-(1-\alpha)}{\alpha}} - \delta - \rho \qquad (36)$$

where, $\dot{A}/A$ is exogenous and $\dot{K}/K$ is given by optimal capital accumulation (in equation (30)).

When immigration is no longer active, the labor force grows exogenously at the population growth rate in the modern economy, n_m. The total capital-labor ratio will change over time, and so will the respective growth rates and production shares of the formal and informal sectors. Assuming that the minimum wage changes proportionally with total factor productivity, considering the equilibrium conditions for formal and informal capital and labor, and applying the process of endogenous capital accumulation, we obtain the following expression for output growth,[14]

[14] W_{UNR} is the unregulated wage, that is, the market wage in the absence of a mandated minimum: $W_{UNR} = A(1-\alpha)\left(\frac{K}{L}\right)^{\alpha}$.

$$\frac{\dot{Y}}{Y} = \frac{\dot{A}}{A} + n_m + \left(\frac{1}{1+\left(\frac{\left(\frac{\zeta}{a}\right)^{\frac{1}{1-\alpha}} - 1}{\left(\frac{\zeta}{a}\right)^{\frac{1}{1-\alpha}} - \zeta} - 1 \right)\left(\frac{W}{W_{UNR}}\right)^{\frac{1}{\alpha}}} \right)\left((A(1-\alpha)^{1-\alpha}\alpha^{\alpha})^{\frac{1}{\alpha}} W^{\frac{-(1-\alpha)}{\alpha}} - \delta - \rho - n_m \right) \quad (37)$$

Apart from the usual growth effects of productivity and labor, this expression highlights the double negative growth effect of labor market distortions – on factor misallocation (first parentheses) and on capital accumulation (second parentheses). Factor misallocation worsens as the mandated minimum wage, W, deviates from the market wage (in the absence of wage regulation), $W_{UNR} = A(1-\alpha)\left(\frac{K}{L}\right)^{\alpha}$.

4. Illustrations and Projections

One of the most important objectives of the paper is to provide an analytical framework to help practitioners clarify definitions and relationships surrounding labor, informality, and macroeconomic variables such as investment and productivity growth. We propose to accomplish this objective in two ways. First, we briefly illustrate how the model can be used to explain the historical behavior of the informal sector in recent decades in developing countries. Second, by calibrating and simulating the model, we provide projections for the future path of informal labor in the next two decades for a large group of countries. These projections are not meant as formal predictions but as scenario analysis for various paths of the determinants of informality.[15]

4.1 An illustration from the recent history of developing countries

In order to integrate the results from the static allocation among formal and informal sectors with the dynamic results regarding capital accumulation, migration, and growth, consider the case of a policy-driven urban bias and a permanent minimum wage. This case can represent labor markets in developing countries in the last 50 years in regions as diverse as Africa, East Asia, Latin America, the Middle East, and South Asia. In the 1960s, these

[15] As companion to this paper, we have prepared a "Toolkit for Informality Scenario Analysis" (Loayza and Meza-Cuadra 2016), which is publicly available and allows interested researchers and practitioners to change conditions in order to formulate their own projections.

countries were characterized by a large rural population, most of which was employed in a rudimentary, subsistence economy. In contrast, the modern economy, where industrialization was taking place, was mostly based in urban areas. The most significant migration consisted of people moving from rural to urban areas. We can describe three phases in terms of the relative size of the informal economy in the modern economy.

In the first phase, there is an expansion of modern informal employment. Urban-bias policies are gradually implemented by pushing down the rural-urban terms of trade and decreasing the urban cost of living. In the model, this implies a declining parameter μ, so that $\phi(t) > 0$. This encourages rural-urban migration and an urban labor force that grows faster than capital. In turn, the declining capital-labor ratio produces an expansion of the relative (and absolute) size of modern informal employment.

In the second phase, the relative size of the modern informal sector remains stable. As urban-bias policies are curbed, rural-urban migration continues but at a slower pace. When the adjusted rural wage is stable, the urban labor force grows at the same rate as the capital stock does. Thus, the urban capital-labor ratio remains constant even in the face of capital accumulation for as long as rural-urban migration continues. During this period, the relative size of informal employment remains unchanged. The greater the pool of rural workers, the larger will be the phase of stability in the relative size of the informal sector.

In the third phase, there is a contraction of informal employment. Provided that the rate of natural increase in rural population (n_r) is not greater than the migration rate (m), rural-urban migration comes to a halt. At first, the formal and informal sectors coexist. The capital stock accumulates at a constant rate; and, as long as the rate of natural increase in urban population is not too large ($n_m < R - \delta - \rho$), the aggregate capital-labor ratio steadily increases. This produces a gradual decline in the relative (and absolute) size of the modern informal sector until it disappears, when the minimum legal wage is no longer binding.[16]

[16] We can show that when migration stops, the minimum wage is binding in the sense that it is greater than the unregulated wage for the isolated urban economy. Using equation (20), the unregulated wage is given by

$$W_{UNR} = A(1-\alpha)\left(\frac{K}{L}\right)^{\alpha} = A(1-\alpha)\left(\frac{\left(\gamma + \frac{\mu b A}{W}(1-\gamma) - a\gamma^{\alpha}\right)\left(\frac{W}{A(1-\alpha)}\right)^{\frac{1}{\alpha}}}{1-a\gamma^{\alpha}}\right)^{\alpha}$$

Given that the minimum wage was binding in the presence of a rural sector, we know that $W > \mu W_R = \mu b A$ Using this inequality, we find that

When the economy is fully formal, capital accumulation produces a decrease of the capital rental rate, reflecting the relative scarcity of labor. Capital growth slows down as the rental rate approaches the subjective rate of time preference (ρ) plus the depreciation rate (δ).

4.2 Projections

For the projection exercise we need information on basic parameters, initial conditions, exogenous projections, and main distortions. These are tied together by the solutions of the model, represented by the equations for the share of informal labor, the migration of labor from the rudimentary to the modern economy, and the growth rate of capital (and GDP).

The basic parameters correspond to characteristics of the utility function and the production function. They are, the subjective rate of time preference (ρ), the capital depreciation rate (δ), and the Cobb-Douglas output elasticity of capital (α). The initial conditions relevant for the study correspond to estimates of the capital stock, total factor productivity (TFP), the labor force, and the share of formal and informal labor, both rudimentary and modern (see Table 1 for variable descriptions and sources).

The exogenous projections needed for the simulations are future population and TFP growth rates, as well as the future paths of the main distortions. These are the legally mandated labor cost, the excess capital costs for informal firms, the cost of living adjustment in the modern economy, and the difference in labor productivity between formal and informal firms as well as between the rudimentary and modern economies (see Table 1).

We consider three scenarios for the behavior of mandated labor costs in the formal sector. Under a "baseline" scenario, the minimum wage rises at the rate of labor productivity growth. Under a "reformist" scenario, the minimum wage rises one percentage point slower than the rate of labor productivity growth. And under a "populist" scenario, the minimum wage rises one percentage point higher than the rate of labor productivity growth.

$$W_{UNR} < A(1-\alpha)\left(\frac{(1-a\gamma^{\alpha})\left(\frac{W}{A(1-\alpha)}\right)^{\frac{1}{\alpha}}}{1-a\gamma^{\alpha}}\right)^{\alpha} = W$$

Table 1 provides specific information regarding how the values of these key variables and parameters are identified, including brief explanations and data sources.

The calibration procedure

The calibration of the model consists of fitting its basic solution equations to derive unknown variables from known or assumed data and parameters. The procedure can be summarized as follows,

- From the equations that determine the relative size of the informal and formal sectors in the modern economy, derive the implied ratio of the wage in the informal rudimentary sector to the formal wage.
- From the equation that determines the capital-labor ratio in the modern economy (resulting from migration equilibrium between the modern and rudimentary economy), derive the implied formal wage.
- From the equation that determines the rate of capital growth, obtain the implicit depreciation rate and the subjective rate of time preference. This also helps anchor the projected capital growth rate to its historical level (see Table 1).

Tables 2 and 3 provide values for the initial conditions of key variables and parameters, either directly from the data or resulting from the calibration procedure, for the set of countries under consideration. Table 2 shows the value of initial conditions related to the informal sector. Table 3 presents values of other key economic variables.

The projection algorithm for informality scenario analysis

The objective here is to obtain the projected paths for the shares of formal workers, informal workers in the modern economy, and informal workers in the rudimentary economy in relation to the total labor force; and to do this for a large sample of developed and developing countries over the next two decades. Rather than formal predictions, the goal is to obtain projections under different scenarios that can illustrate the workings of the model. The projection algorithm uses the basic equations from the model to obtain the informality shares, and it can be summarized as follows,

- The main changes driving the projections are, first, the productivity growth rate; second, the labor force growth rate; and third, the rate of change of the minimum wage. The first two are exogenous (see Table 1), and the latter is given according to

the "baseline," "reformist," and "populist" scenarios. In addition to this basic set of projections, we consider an alternative set where the productivity in the rudimentary economy, the cost of living adjustment in the modern vs. rudimentary economies, and the excess cost of capital in the modern informal sector also change.

- The projected capital growth rate is obtained from the solution of the respective equation of the model. This updates the level of the capital stock. In turn, this determines total labor in the modern economy (through migration to and from the rudimentary economy). Residually, this also determines labor in the rudimentary economy.
- When labor in the rudimentary economy reaches a minimum threshold, then labor in the modern economy is no longer driven by migration but only by the exogenous increase in the total labor force.
- The share of formal and informal workers in the modern economy is driven by the equilibrium condition across sectors at every point in time. This condition leads to different equations depending on whether there is excess supply of labor in the rudimentary economy or not. In the former case, the shares would not depend on the capital labor ratio (which, given migration, is endogenous); while in the latter case, the shares do depend directly on the capital-labor ratio.
- Under these conditions, we then obtain the shares of formal workers, informal workers in the modern economy, and informal workers in the rudimentary economy, year by year, country by country, under the "baseline," "reformist," and "populist" scenarios.

Projection results

Tables 4 through 9 report the projections, for the years 2010, 2020, and 2030. Results under the "baseline" and populist scenarios are presented for all countries, while only developing countries are included when using the "reformist" scenario. In Tables 4-6, we present the scenarios where the exogenous driving forces are labor force growth, TFP growth, and changes in mandated labor costs. In Tables 7-9, we present the scenarios where, in addition, the productivity rates in the informal sectors (both rudimentary and modern), the cost of living in the modern economy, and the excess cost of capital in the modern

informal sector also change. Figure 2 presents some illustrative examples for 8 developing countries representing various geographic regions.

Naturally, the projection results vary by country because of both different initial conditions and labor force and TFP growth rates (see Table 1 for variable sources and descriptions). However, some common characteristics can be described, particularly for developing countries. Under the basic set of scenarios –where only labor force, TFP, and mandated labor costs change—the rudimentary informal sector decreases quickly over the next two decades, under the baseline, populist, and reformist scenario analysis. Of these, the most rapid decline of the rudimentary informal sector occurs under the reformist scenario. The pull towards the modern economy, both formal and informal, is produced by TFP and capital growth.

The modern informal sector also tends to decline but only under the baseline and reformist scenarios, and especially under the latter one. In this case, the pull towards formality is given not only by capital and TFP growth but also by a reduction in the distortion caused by mandated labor costs. Under this basic set of scenarios, the modern and rudimentary informal sectors tend to change over time rather quickly, with rapid decline under the reformist scenario and further increase under the populist scenario. This suggests a large effect of the difference between labor productivity and mandated labor costs.

To obtain a more nuanced projection, where under the baseline scenario there is more persistence in the size of both rudimentary and modern informal sectors, we consider an alternative set of scenarios. We allow for the relative cost of living in the modern economy to increase ($annual\ growth(\mu) = 1\%$), the excess capital cost for informal firms to decrease ($annual\ growht(\zeta) = -0.25\%$), the ratio between TFP productivity in the modern informal and formal sector to increase ($annual\ growth(a) = 0.25\%$), and the ratio between TFP productivity in the rudimentary and formal economy to increase ($annual\ growth(b) = 0.25\%$). These are all forces that pull towards the informal sector.

The rising cost of living in the modern economy and the increasing productivity of the rudimentary economy pull towards the rudimentary informal sector. The declining capital costs and rising productivity in the modern informal sector make it more attractive than the formal sector. These forces counterbalance those in favor of formalization –TFP and capital growth—that dominate the basic set of scenarios. As a result, the projections for informality

in the modern and rudimentary economies remain more persistent over time than under the basic scenarios. This is the case under the baseline scenario and, to a lower extent, under the reformist one.

5. Concluding Remarks

To understand how informality changes in size and type, it is necessary to relate it to the long-run phenomena of labor migration and economic growth. It is also necessary to realize how informality derives from both lack of development and biased policies. The model, simulation, and projection exercises presented in this paper are geared towards understanding informality as both a symptom and a consequence in the process of economic development.

The paper can also help appreciate the possibilities and limits of different types of policies to address informality. For instance, improving financial and contractual participation for informal firms will increase informal wages but will also cause an expansion of the informal sector. Streamlining labor regulations will expand the formal sector in the modern economy but will not eliminate informal labor in the rudimentary economy in the short run. Sustained improvements in labor productivity in the modern economy, through capital accumulation and TFP growth, will lead to a reduction in informality across all areas but only in the long run.

Taking into account that informality can also manifest in the rudimentary economy (as self- or sub-employment) should make policy makers realize the futility of formalization plans based on penalties to firms. It should help them understand the advantages of programs that make formality more attractive to both workers and firms.

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Table 1. Description of Variables and Data Sources

Variable	Description	Data Source/ Method
Capital share (α)	In the production function of the modern economy, the capital share measures the share of national income that accrues to owners of capital.	We use a constant estimate of 0.5. This corresponds roughly to the median value of country-specific estimates we derived from labor shares presented in the Penn World Tables (averaged from 1990-2012). These country-specific estimates are used directly in the appendix where, if a country is missing data, we use $\alpha = 0.5$. All other variables used in the appendix are derived using this alternative country-specific capital share.
Subjective rate of time preference (ρ)	The marginal rate of substitution between present and future consumption.	Using the equation that determines the rate of capital growth in the modern economy and the average growth rate of capital from 2000-2012, we obtain the implicit depreciation rate and the subjective rate of time preference. We set a minimum value of 1 percent.
Capital depreciation rate (δ)	The rate at which the economic value of the capital stock decreases over time.	
Capital stock (K)	Goods or assets used for production in the modern economy.	We develop historical estimates using Gross Capital Formation in 2005 US dollars from WDI (1960-present), extrapolating using Investment from Penn World Tables (1950-2011) for past years in which it is not available. For the initial conditions, we use an average from 2008-2012 and update future years using the growth rate derived from solutions of the model.
Total factor productivity of the formal sector (A)	The total factor productivity of firms operating in the formal sector, using capital and labor.	We develop country-specific estimates using the production function of the modern economy and our estimates of capital and labor in the modern economy. For the initial conditions, we use an average from 2008-2012.
Growth of Total factor productivity of the formal sector (A)	Growth of total factor productivity of firms operating in the formal sector, using capital and labor.	We calculate an annual log growth rate of the historical estimates of A and take an average from 2000-2012. We set a minimum value of 0.
Growth of the Labor force (growth of L_F + L_I + L_R)	Growth of the total labor force (i.e. in the modern and rudimentary economy) by country.	We use estimates and projections of the size of the labor force by country from the ILO (available until 2030) to find an annual growth rate. For the initial year, we use an average of estimates of the size of

Variable	Description	Data Source/ Method
		the labor force from 2008-2012 from WDI and update this using the projected growth rate.
Excess capital costs for informal firms (ζ)	Informal firms pay a capital rental rate which is a multiple, R , of the market determined net capital rental rate paid by formal firms.	Based on an estimate by Scheinkman and de Paula of the additional cost of capital for informal firms in Brazil, we assume a constant value of 1.3 for all countries. For the persistent informality parameter options, we set ζ to decrease 0.25% percent annually.
Cost of Living Adjustment (μ)	The wage adjustment between the rudimentary and modern economies, which accounts for differences in the cost of living or in the cost of labor participation between the two economies.	We find the ratio between the average monthly wage of all employees and of employees in elementary occupations, available for a subset of countries from the ILO. We use the mean, after excluding outliers, 1.81. For the persistent informality parameter options, we set the growth rate of μ to be 1 percent annually.
Ratio of formal to modern informal productivity (a)	Total factor productivity in the informal sector is a fraction, *a*, of productivity in the formal sector (A).	We use an estimate from Perry (2007) that, controlling for firm characteristics, informal firms are 71% as productive as formal firms. For the persistent informality parameter options, we set the growth rate of *a* to be 0.25% percent annually.
Ratio of formal to rudimentary informal productivity (b)	Labor productivity in the rudimentary economy is a fraction, *b*, of total factor productivity in the formal sector.	Country-specific estimates are obtained through calibration of the model. For the persistent informality parameter options, we set the growth rate of *b* to be 0.25% percent annually.
Formal Labor (L_F)	The total number of workers employed in formal firms, which are subject to labor legislation.	We use the latest available estimates of the rate of contribution to mandatory pensions systems around the world (World Bank; ILO), combined with average employment and labor force estimates from 2008-2012 from WDI. We assume that unemployed and informal workers contribute to pensions at a fraction, *d,* set to 2%, of the rate among formal employees, and adjust our estimates accordingly.
Informal Rudimentary Labor (L_R)	The total number of workers in the rudimentary economy, using primary production technologies with little capital and low productivity	We use ILO estimates of the share of 'vulnerable employment', defined as the sum of un-paid family workers and own-account workers, i.e. self-employed workers without employees, combined with labor force and employment data from WDI.

Variable	Description	Data Source/ Method
Informal Modern Labor (L_I)	The total number of workers employed in informal firms operating in the modern economy.	We estimate informal employment in the modern economy as the residual share of the labor force (from WDI) that is not part of the formal sector or the informal rudimentary economy.
Legally mandated labor cost, i.e. minimum wage (W)	The legally mandated cost of labor paid by firms in the formal sector.	We use the equation for the aggregate capital-labor ratio in the modern economy to derive an estimate.

Table 2. Initial conditions related to informality by country in 2010

Country	Formal (% of the labor force)	Informal Modern (% of the labor force)	Informal Rud. (% of the labor force)	Modern Informal Wage / Expected Wage in the Modern Economy	Modern Informal Wage/ Min. Wage	Informal Rud. Wage / Min. Wage
Albania	39%	10%	52%	0.44	0.39	0.49
Argentina	46%	36%	18%	0.53	0.39	0.41
Australia	87%	5%	8%	0.40	0.39	0.54
Austria	90%	2%	8%	0.39	0.39	0.55
Burundi	7%	7%	86%	0.57	0.39	0.38
Belgium	87%	4%	9%	0.40	0.39	0.54
Benin	6%	7%	87%	0.59	0.39	0.36
Bangladesh	5%	38%	57%	0.85	0.39	0.25
Bulgaria	75%	18%	8%	0.44	0.39	0.49
Bolivia	13%	33%	54%	0.69	0.39	0.31
Brazil	58%	20%	23%	0.46	0.39	0.47
Botswana	17%	73%	10%	0.77	0.39	0.28
Central African Republic	5%	8%	87%	0.64	0.39	0.34
Canada	83%	4%	13%	0.40	0.39	0.54
Switzerland	92%	-1%	9%	0.39	0.39	0.56
Chile	56%	21%	23%	0.47	0.39	0.46
China	34%	19%	48%	0.50	0.39	0.43
Côte d'Ivoire	14%	10%	76%	0.52	0.39	0.41
Cameroon	17%	12%	71%	0.52	0.39	0.41
Congo, Rep.	12%	17%	71%	0.61	0.39	0.35
Colombia	30%	28%	43%	0.55	0.39	0.39
Costa Rica	57%	24%	19%	0.48	0.39	0.45
Germany	83%	11%	6%	0.42	0.39	0.51
Denmark	88%	7%	5%	0.40	0.39	0.53
Dominican Republic	30%	34%	37%	0.57	0.39	0.37
Ecuador	27%	31%	42%	0.58	0.39	0.37
Egypt, Arab Rep.	54%	26%	21%	0.48	0.39	0.44
Spain	65%	26%	9%	0.47	0.39	0.46
Finland	85%	6%	9%	0.41	0.39	0.53
France	82%	11%	6%	0.42	0.39	0.51
United Kingdom	88%	1%	10%	0.39	0.39	0.55
Ghana	10%	16%	74%	0.62	0.39	0.35
Guinea	13%	-1%	88%	0.37	0.39	0.57

Country	Formal (% of the labor force)	Informal Modern (% of the labor force)	Informal Rud. (% of the labor force)	Modern Informal Wage / Expected Wage in the Modern Economy	Modern Informal Wage/ Min. Wage	Informal Rud. Wage / Min. Wage
Greece	79%	-3%	24%	0.38	0.39	0.57
Guatemala	21%	38%	41%	0.64	0.39	0.33
Hong Kong SAR, China	76%	17%	7%	0.44	0.39	0.49
Honduras	18%	32%	50%	0.64	0.39	0.34
Hungary	86%	8%	6%	0.41	0.39	0.53
Indonesia	14%	31%	55%	0.68	0.39	0.32
India	12%	11%	78%	0.55	0.39	0.39
Ireland	83%	7%	10%	0.41	0.39	0.53
Iran, Islamic Rep.	41%	23%	36%	0.50	0.39	0.43
Iraq	43%	35%	21%	0.53	0.39	0.40
Israel	85%	8%	7%	0.41	0.39	0.52
Italy	85%	-2%	17%	0.38	0.39	0.56
Jamaica	21%	47%	32%	0.67	0.39	0.32
Jordan	52%	41%	7%	0.53	0.39	0.40
Japan	92%	-1%	10%	0.38	0.39	0.56
Kenya	19%	28%	53%	0.61	0.39	0.35
Cambodia	1%	28%	71%	0.97	0.39	0.22
Korea, Rep.	77%	-1%	24%	0.38	0.39	0.56
Lao PDR	2%	15%	83%	0.84	0.39	0.25
Lebanon	11%	57%	32%	0.80	0.39	0.27
Sri Lanka	25%	36%	39%	0.61	0.39	0.35
Lesotho	17%	70%	13%	0.76	0.39	0.28
Morocco	30%	23%	46%	0.53	0.39	0.41
Madagascar	7%	9%	84%	0.60	0.39	0.36
Mexico	28%	44%	28%	0.62	0.39	0.35
Mali	11%	7%	82%	0.51	0.39	0.42
Mongolia	46%	2%	52%	0.40	0.39	0.54
Mozambique	13%	20%	67%	0.62	0.39	0.34
Mauritania	24%	30%	45%	0.59	0.39	0.37
Malaysia	56%	23%	21%	0.47	0.39	0.45
Namibia	20%	60%	20%	0.72	0.39	0.30
Niger	4%	7%	89%	0.62	0.39	0.35
Nigeria	12%	12%	76%	0.56	0.39	0.39
Netherlands	87%	2%	10%	0.39	0.39	0.54
Norway	90%	5%	5%	0.40	0.39	0.54
Nepal	4%	27%	69%	0.83	0.39	0.26
Pakistan	8%	33%	60%	0.77	0.39	0.28

Country	Formal (% of the labor force)	Informal Modern (% of the labor force)	Informal Rud. (% of the labor force)	Modern Informal Wage / Expected Wage in the Modern Economy	Modern Informal Wage/ Min. Wage	Informal Rud. Wage / Min. Wage
Panama	62%	10%	28%	0.42	0.39	0.51
Peru	22%	32%	46%	0.61	0.39	0.35
Philippines	27%	34%	39%	0.59	0.39	0.37
Poland	77%	6%	17%	0.41	0.39	0.53
Portugal	86%	-1%	16%	0.38	0.39	0.56
Paraguay	14%	44%	41%	0.72	0.39	0.30
Romania	65%	5%	30%	0.40	0.39	0.53
Rwanda	5%	18%	77%	0.75	0.39	0.29
Sudan	12%	37%	51%	0.72	0.39	0.30
Senegal	10%	37%	52%	0.74	0.39	0.29
Singapore	60%	30%	9%	0.49	0.39	0.44
Sierra Leone	7%	5%	88%	0.53	0.39	0.40
El Salvador	24%	39%	37%	0.62	0.39	0.34
Sweden	84%	10%	6%	0.41	0.39	0.52
Chad	6%	11%	83%	0.64	0.39	0.34
Togo	7%	12%	81%	0.64	0.39	0.34
Thailand	22%	25%	53%	0.57	0.39	0.37
Tunisia	62%	14%	24%	0.44	0.39	0.49
Turkey	57%	14%	30%	0.44	0.39	0.49
Tanzania	5%	12%	83%	0.70	0.39	0.31
Uganda	12%	10%	79%	0.54	0.39	0.40
Uruguay	75%	4%	21%	0.40	0.39	0.54
United States	87%	7%	6%	0.41	0.39	0.53
Vietnam	21%	18%	61%	0.54	0.39	0.40
South Africa	17%	75%	8%	0.77	0.39	0.28
Zimbabwe	22%	12%	66%	0.50	0.39	0.43

Note: All initial conditions correspond to averages from 2008-2012, when available. The ratio of the modern informal wage to the minimum wage is constant as it is a function of parameters a, ζ, and α, which are assumed to be constant across countries in the initial period. For sources and descriptions, see Table 1.

Table 3. Initial conditions related to the overall economy by country in 2010

Country	Capital/ Labor Force	Capital/ GDP	GDP/ Labor Force	Minimum Wage (W)	TFP of Formal Sector (A)	Growth of A
Albania	36,002	4.4	8,225	6,304	43	3.0%
Argentina	45,046	2.9	15,687	10,264	73	1.6%
Australia	236,448	3.4	68,682	36,094	140	0.0%
Austria	310,881	4.0	78,499	41,073	140	0.1%
Burundi	795	2.5	321	532	11	0.0%
Belgium	317,076	3.7	85,805	45,517	152	0.0%
Benin	4,390	2.9	1,495	2,608	22	0.4%
Bangladesh	3,143	2.4	1,291	1,582	23	0.5%
Bulgaria	23,633	2.3	10,265	5,674	66	0.0%
Bolivia	5,452	2.1	2,582	2,657	35	1.1%
Brazil	27,202	2.6	10,625	6,594	64	0.8%
Botswana	36,101	3.0	12,063	9,571	62	0.0%
Central African Republic	1,974	2.6	758	1,393	17	1.4%
Canada	205,177	3.1	66,079	35,705	145	0.0%
Switzerland	409,142	4.1	100,778	52,423	157	0.4%
Chile	47,945	2.5	18,846	11,724	85	0.0%
China	15,034	3.0	4,935	3,820	39	3.9%
Côte d'Ivoire	28,719	11.7	2,463	2,945	14	0.8%
Cameroon	7,171	3.0	2,376	2,573	28	0.7%
Congo, Rep.	15,878	3.4	4,632	5,497	36	2.0%
Colombia	22,391	2.7	8,273	6,611	54	1.0%
Costa Rica	29,860	2.5	11,785	7,254	67	0.0%
Germany	276,781	3.8	73,267	39,382	139	0.4%
Denmark	324,384	3.6	90,895	47,645	159	0.0%
Dominican Republic	21,625	2.1	10,275	8,071	69	1.1%
Ecuador	21,606	3.0	7,171	5,863	48	1.2%
Egypt, Arab Rep.	10,510	2.4	4,388	2,771	42	0.9%
Spain	209,021	4.0	51,875	30,396	113	0.0%
Finland	303,345	3.8	79,424	42,410	144	0.4%
France	284,646	3.7	77,528	41,660	145	0.0%
United Kingdom	229,524	2.9	77,954	41,207	162	0.0%
Ghana	5,101	3.4	1,500	1,850	20	2.4%
Guinea	1,673	2.3	742	1,052	18	0.0%

Country	Capital/ Labor Force	Capital/ GDP	GDP/ Labor Force	Minimum Wage (W)	TFP of Formal Sector (A)	Growth of A
Greece	189,593	4.0	47,215	26,688	109	0.0%
Guatemala	13,774	2.5	5,441	4,770	46	0.0%
Hong Kong SAR, China	175,208	2.9	59,610	32,720	141	1.9%
Honduras	13,589	3.5	3,914	3,682	33	1.0%
Hungary	101,373	3.9	26,178	13,889	82	0.3%
Indonesia	9,807	3.0	3,257	3,354	32	2.6%
India	7,497	2.9	2,592	3,290	29	1.8%
Ireland	332,438	3.3	101,594	54,911	175	0.0%
Iran, Islamic Rep.	53,915	5.0	10,837	7,776	46	1.1%
Iraq	15,229	1.7	9,055	5,921	70	0.0%
Israel	151,898	2.8	54,797	29,028	139	0.3%
Italy	273,049	3.7	73,880	40,096	141	0.0%
Jamaica	45,877	5.2	8,865	7,540	42	0.0%
Jordan	34,573	3.3	10,540	6,523	56	2.1%
Japan	299,196	4.3	69,894	36,549	128	0.4%
Kenya	3,946	2.5	1,548	1,447	24	0.3%
Cambodia	1,814	1.6	1,125	1,838	26	0.5%
Korea, Rep.	144,394	3.3	43,568	24,517	113	0.6%
Lao PDR	2,697	2.0	1,322	2,508	25	0.8%
Lebanon	56,686	2.9	19,498	18,137	81	1.2%
Sri Lanka	11,696	2.9	3,986	3,195	35	2.7%
Lesotho	8,844	4.2	2,122	1,705	22	2.7%
Morocco	22,697	3.5	6,518	5,252	43	1.2%
Madagascar	1,827	3.3	558	884	13	0.0%
Mexico	61,873	3.2	19,125	14,728	76	0.0%
Mali	3,407	2.6	1,327	1,793	22	0.0%
Mongolia	14,648	4.8	3,071	2,185	25	3.9%
Mozambique	1,141	1.1	998	1,101	28	0.0%
Mauritania	7,734	3.1	2,502	2,104	28	0.0%
Malaysia	42,992	2.9	14,884	9,245	71	1.6%
Namibia	39,181	3.6	10,966	8,783	54	0.7%
Niger	2,611	3.1	833	1,608	16	0.8%
Nigeria	4,110	1.3	3,155	3,944	48	5.2%
Netherlands	286,352	3.5	81,319	43,151	151	0.0%
Norway	456,283	3.7	124,576	64,722	183	0.0%
Nepal	2,252	3.2	711	1,002	15	0.0%

Country	Capital/ Labor Force	Capital/ GDP	GDP/ Labor Force	Minimum Wage (W)	TFP of Formal Sector (A)	Growth of A
Pakistan	6,008	2.7	2,233	2,670	29	0.7%
Panama	30,157	2.2	13,822	8,390	78	2.6%
Peru	16,535	2.5	6,683	5,794	51	1.8%
Philippines	9,044	2.8	3,288	2,657	34	2.1%
Poland	55,609	2.6	21,378	11,889	90	1.2%
Portugal	137,004	3.8	36,096	19,511	97	0.0%
Paraguay	9,920	2.7	3,688	3,489	37	0.0%
Romania	42,793	3.5	12,347	7,493	59	2.4%
Rwanda	1,307	1.7	763	1,166	21	2.4%
Sudan	6,953	2.1	3,251	3,376	39	0.0%
Senegal	5,251	2.8	1,848	1,975	25	0.2%
Singapore	173,308	2.8	61,251	36,062	144	1.7%
Sierra Leone	1,566	1.6	994	1,656	24	1.6%
El Salvador	17,153	2.4	7,180	5,961	55	0.0%
Sweden	314,810	3.7	84,211	44,892	149	0.5%
Chad	4,849	2.6	1,854	2,989	26	3.5%
Togo	2,315	2.7	847	1,290	17	0.0%
Thailand	21,192	3.7	5,761	5,232	39	2.4%
Tunisia	34,349	3.3	10,388	6,312	55	1.0%
Turkey	50,556	2.2	22,490	14,232	99	1.1%
Tanzania	2,909	2.8	1,025	1,747	19	2.1%
Uganda	2,216	2.2	1,024	1,310	21	1.9%
Uruguay	41,111	3.1	13,445	7,629	66	1.7%
United States	279,700	3.2	86,586	45,655	163	0.0%
Vietnam	4,606	3.0	1,543	1,471	22	0.0%
South Africa	41,674	2.5	16,476	12,979	80	0.9%
Zimbabwe	793	1.1	751	726	26	0.0%

Note: All initial conditions correspond to averages from 2008-2012, when available.
Sources: For methods and sources for variables in columns 4-6, see Table 1. For columns 1-3:

- World Development Indicators (WDI), 1960-2012
- Penn World Tables (1950-2011)
- International Labor Organization (1990-2012)

Table 4. Projections for all countries from 2010 to 2030 under baseline scenario

Country	Formal Labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	57%	76%	10%	21%	19%	52%	22%	5%
Argentina	46%	53%	54%	36%	42%	41%	18%	5%	5%
Australia	87%	90%	90%	5%	5%	5%	8%	5%	5%
Austria	87%	90%	90%	5%	5%	5%	8%	5%	5%
Burundi	7%	8%	9%	7%	9%	11%	86%	83%	80%
Belgium	86%	90%	90%	5%	5%	5%	9%	5%	5%
Benin	6%	6%	7%	7%	8%	9%	87%	86%	85%
Bangladesh	5%	5%	10%	38%	63%	85%	57%	31%	5%
Bulgaria	75%	78%	78%	18%	17%	17%	8%	5%	5%
Bolivia	13%	14%	18%	33%	37%	50%	54%	48%	32%
Brazil	58%	72%	73%	20%	23%	22%	23%	5%	5%
Botswana	17%	18%	18%	73%	77%	77%	10%	5%	5%
Central African Republic	5%	4%	3%	8%	6%	5%	87%	90%	92%
Canada	82%	90%	90%	5%	5%	5%	13%	5%	5%
Switzerland	86%	90%	90%	5%	5%	5%	9%	5%	5%
Chile	56%	70%	71%	21%	25%	24%	23%	5%	5%
China	34%	60%	61%	19%	35%	34%	48%	5%	5%
Côte d'Ivoire	14%	9%	3%	10%	5%	5%	76%	86%	92%
Cameroon	17%	17%	17%	12%	12%	12%	71%	71%	70%
Congo, Rep.	12%	12%	13%	17%	17%	19%	71%	70%	68%
Colombia	30%	37%	51%	28%	37%	44%	43%	26%	5%
Costa Rica	57%	68%	69%	24%	27%	26%	19%	5%	5%
Germany	83%	85%	85%	11%	10%	10%	6%	5%	5%
Denmark	88%	88%	88%	7%	7%	7%	5%	5%	5%
Dominican Republic	30%	38%	46%	34%	49%	49%	37%	13%	5%
Ecuador	27%	32%	44%	31%	39%	51%	42%	30%	5%
Egypt, Arab Rep.	54%	65%	65%	26%	30%	30%	21%	5%	5%
Spain	65%	70%	70%	26%	25%	25%	9%	5%	5%
Finland	85%	89%	89%	6%	6%	6%	9%	5%	5%
France	82%	84%	84%	11%	11%	11%	6%	5%	5%
United Kingdom	85%	90%	90%	5%	5%	5%	10%	5%	5%
Ghana	10%	11%	16%	16%	20%	30%	74%	69%	54%
Guinea	7%	10%	16%	5%	5%	5%	88%	85%	79%
Greece	71%	90%	90%	5%	5%	5%	24%	5%	5%
Guatemala	21%	22%	24%	38%	40%	43%	41%	38%	33%

Country	Formal Labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Hong Kong SAR, China	76%	79%	80%	17%	16%	15%	7%	5%	5%
Honduras	18%	20%	27%	32%	38%	52%	50%	42%	22%
Hungary	86%	88%	88%	8%	7%	7%	6%	5%	5%
Indonesia	14%	16%	28%	31%	42%	67%	55%	42%	5%
India	12%	14%	24%	11%	18%	31%	78%	68%	45%
Ireland	83%	89%	89%	7%	6%	6%	10%	5%	5%
Iran, Islamic Rep.	41%	49%	63%	23%	29%	32%	36%	22%	5%
Iraq	43%	48%	53%	35%	42%	42%	21%	9%	5%
Israel	85%	89%	89%	8%	6%	6%	7%	5%	5%
Italy	78%	90%	90%	5%	5%	5%	17%	5%	5%
Jamaica	21%	20%	22%	47%	45%	49%	32%	35%	30%
Jordan	52%	54%	53%	41%	41%	42%	7%	5%	5%
Japan	85%	90%	90%	5%	5%	5%	10%	5%	5%
Kenya	19%	21%	25%	28%	33%	40%	53%	46%	35%
Cambodia	1%	0%	1%	28%	53%	94%	71%	47%	5%
Korea, Rep.	71%	90%	90%	5%	5%	5%	24%	5%	5%
Lao PDR	2%	2%	2%	15%	20%	29%	83%	78%	69%
Lebanon	11%	11%	18%	57%	59%	77%	32%	30%	5%
Sri Lanka	25%	39%	39%	36%	56%	56%	39%	5%	5%
Lesotho	17%	18%	18%	70%	77%	77%	13%	5%	5%
Morocco	30%	41%	54%	23%	37%	41%	46%	22%	5%
Madagascar	7%	7%	8%	9%	10%	11%	84%	83%	81%
Mexico	28%	32%	38%	44%	51%	57%	28%	17%	5%
Mali	11%	14%	16%	7%	9%	10%	82%	78%	74%
Mongolia	43%	59%	90%	5%	5%	5%	52%	36%	5%
Mozambique	13%	7%	14%	20%	65%	81%	67%	28%	5%
Mauritania	24%	33%	41%	30%	52%	54%	45%	15%	5%
Malaysia	56%	67%	69%	23%	28%	26%	21%	5%	5%
Namibia	20%	23%	23%	60%	72%	72%	20%	5%	5%
Niger	4%	4%	3%	7%	6%	5%	89%	90%	91%
Nigeria	12%	14%	41%	12%	17%	54%	76%	69%	5%
Netherlands	85%	90%	90%	5%	5%	5%	10%	5%	5%
Norway	90%	90%	90%	5%	5%	5%	5%	5%	5%
Nepal	4%	4%	5%	27%	33%	43%	69%	63%	52%
Pakistan	8%	8%	10%	33%	36%	43%	60%	55%	47%
Panama	62%	83%	84%	10%	12%	11%	28%	5%	5%
Peru	22%	29%	40%	32%	46%	55%	46%	25%	5%
Philippines	27%	31%	43%	34%	42%	52%	39%	27%	5%

Country	Formal Labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Poland	77%	90%	89%	6%	5%	6%	17%	5%	5%
Portugal	79%	90%	90%	5%	5%	5%	16%	5%	5%
Paraguay	14%	15%	17%	44%	47%	53%	41%	39%	31%
Romania	65%	88%	88%	5%	7%	7%	30%	5%	5%
Rwanda	5%	6%	12%	18%	30%	64%	77%	63%	23%
Sudan	12%	17%	22%	37%	72%	73%	51%	11%	5%
Senegal	10%	11%	12%	37%	40%	44%	52%	49%	45%
Singapore	60%	66%	66%	30%	29%	29%	9%	5%	5%
Sierra Leone	7%	9%	13%	5%	7%	12%	88%	84%	75%
El Salvador	24%	27%	33%	39%	46%	57%	37%	27%	9%
Sweden	84%	86%	86%	10%	9%	9%	6%	5%	5%
Chad	6%	6%	9%	11%	13%	21%	83%	80%	70%
Togo	7%	6%	6%	12%	11%	10%	81%	83%	84%
Thailand	22%	28%	46%	25%	35%	49%	53%	37%	5%
Tunisia	62%	79%	79%	14%	16%	16%	24%	5%	5%
Turkey	57%	71%	77%	14%	23%	18%	30%	6%	5%
Tanzania	5%	5%	6%	12%	15%	19%	83%	80%	75%
Uganda	12%	14%	23%	10%	14%	25%	79%	71%	52%
Uruguay	74%	84%	90%	5%	7%	5%	21%	8%	5%
United States	87%	88%	88%	7%	7%	7%	6%	5%	5%
Vietnam	21%	30%	49%	18%	35%	46%	61%	35%	5%
South Africa	17%	18%	18%	75%	77%	77%	8%	5%	5%
Zimbabwe	22%	35%	61%	12%	26%	34%	66%	39%	5%

Table 5. Projections for all countries from 2010 to 2030 under populist scenario

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	36%	38%	10%	30%	57%	52%	34%	5%
Argentina	46%	31%	19%	36%	48%	59%	18%	21%	22%
Australia	87%	68%	48%	5%	27%	47%	8%	5%	5%
Austria	87%	68%	45%	5%	23%	37%	8%	9%	18%
Burundi	7%	5%	3%	7%	10%	11%	86%	86%	86%
Belgium	86%	66%	43%	5%	26%	39%	9%	8%	17%
Benin	6%	4%	2%	7%	9%	9%	87%	88%	89%
Bangladesh	5%	0%	0%	38%	61%	91%	57%	39%	9%
Bulgaria	75%	56%	39%	18%	39%	56%	8%	5%	5%
Bolivia	13%	7%	2%	33%	37%	40%	54%	56%	57%
Brazil	58%	44%	30%	20%	37%	51%	23%	19%	18%
Botswana	17%	7%	0%	73%	88%	95%	10%	5%	5%
Central African Republic	5%	2%	1%	8%	7%	5%	87%	91%	94%
Canada	82%	67%	44%	5%	26%	40%	13%	7%	16%
Switzerland	86%	64%	41%	5%	19%	32%	9%	17%	27%
Chile	56%	48%	34%	21%	45%	61%	23%	7%	5%
China	34%	42%	27%	19%	53%	68%	48%	5%	5%
Côte d'Ivoire	14%	6%	1%	10%	7%	5%	76%	88%	94%
Cameroon	17%	10%	5%	12%	14%	14%	71%	75%	80%
Congo, Rep.	12%	7%	3%	17%	19%	19%	71%	74%	78%
Colombia	30%	22%	14%	28%	40%	54%	43%	38%	32%
Costa Rica	57%	47%	33%	24%	48%	62%	19%	5%	5%
Germany	83%	58%	38%	11%	30%	42%	6%	12%	21%
Denmark	88%	65%	41%	7%	30%	41%	5%	5%	18%
Dominican Republic	30%	22%	14%	34%	51%	69%	37%	28%	16%
Ecuador	27%	18%	11%	31%	41%	50%	42%	40%	39%
Egypt, Arab Rep.	54%	40%	25%	26%	42%	52%	21%	18%	22%
Spain	65%	50%	34%	26%	45%	61%	9%	5%	5%
Finland	85%	66%	44%	6%	29%	45%	9%	5%	11%
France	82%	62%	38%	11%	33%	43%	6%	5%	19%
United Kingdom	85%	65%	39%	5%	22%	32%	10%	13%	29%
Ghana	10%	6%	3%	16%	21%	29%	74%	73%	68%
Guinea	7%	8%	8%	5%	5%	6%	88%	87%	86%
Greece	71%	66%	45%	5%	18%	33%	24%	16%	23%
Guatemala	21%	12%	5%	38%	41%	38%	41%	47%	57%
Hong Kong SAR, China	76%	58%	40%	17%	37%	55%	7%	5%	5%
Honduras	18%	11%	5%	32%	39%	48%	50%	50%	47%
Hungary	86%	65%	46%	8%	30%	49%	6%	5%	5%
Indonesia	14%	8%	3%	31%	42%	62%	55%	49%	34%
India	12%	8%	6%	11%	19%	31%	78%	72%	63%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Ireland	83%	66%	46%	7%	29%	49%	10%	5%	5%
Iran, Islamic Rep.	41%	30%	22%	23%	36%	50%	36%	34%	28%
Iraq	43%	28%	14%	35%	45%	42%	21%	27%	44%
Israel	85%	64%	38%	8%	28%	37%	7%	8%	25%
Italy	78%	65%	43%	5%	19%	32%	17%	16%	25%
Jamaica	21%	10%	4%	47%	46%	47%	32%	43%	49%
Jordan	52%	36%	22%	41%	59%	73%	7%	5%	5%
Japan	85%	67%	43%	5%	21%	34%	10%	12%	23%
Kenya	19%	12%	6%	28%	34%	36%	53%	54%	58%
Cambodia	1%	0%	0%	28%	50%	80%	71%	50%	20%
Korea, Rep.	71%	72%	53%	5%	23%	42%	24%	5%	5%
Lao PDR	2%	0%	0%	15%	20%	25%	83%	80%	75%
Lebanon	11%	4%	0%	57%	57%	86%	32%	39%	14%
Sri Lanka	25%	20%	13%	36%	67%	82%	39%	12%	5%
Lesotho	17%	6%	0%	70%	80%	95%	13%	14%	5%
Morocco	30%	24%	19%	23%	42%	65%	46%	34%	16%
Madagascar	7%	4%	2%	9%	11%	12%	84%	85%	86%
Mexico	28%	18%	9%	44%	53%	57%	28%	29%	34%
Mali	11%	8%	5%	7%	11%	12%	82%	81%	83%
Mongolia	43%	38%	37%	5%	16%	41%	52%	46%	22%
Mozambique	13%	1%	0%	20%	62%	95%	67%	37%	5%
Mauritania	24%	19%	13%	30%	54%	80%	45%	27%	8%
Malaysia	56%	40%	32%	23%	41%	63%	21%	19%	5%
Namibia	20%	10%	2%	60%	79%	93%	20%	11%	5%
Niger	4%	2%	1%	7%	6%	5%	89%	91%	94%
Nigeria	12%	8%	7%	12%	17%	42%	76%	75%	51%
Netherlands	85%	66%	42%	5%	24%	36%	10%	10%	22%
Norway	90%	64%	39%	5%	25%	36%	5%	11%	25%
Nepal	4%	0%	0%	27%	33%	39%	69%	67%	61%
Pakistan	8%	3%	0%	33%	36%	38%	60%	61%	62%
Panama	62%	52%	43%	10%	33%	52%	28%	14%	5%
Peru	22%	16%	10%	32%	47%	69%	46%	37%	21%
Philippines	27%	18%	11%	34%	43%	57%	39%	39%	33%
Poland	77%	66%	47%	6%	29%	48%	17%	5%	5%
Portugal	79%	73%	52%	5%	22%	41%	16%	5%	7%
Paraguay	14%	7%	2%	44%	46%	45%	41%	47%	53%
Romania	65%	61%	46%	5%	34%	49%	30%	5%	5%
Rwanda	5%	2%	0%	18%	30%	51%	77%	68%	49%
Sudan	12%	7%	1%	37%	71%	94%	51%	23%	5%
Senegal	10%	5%	0%	37%	40%	38%	52%	56%	61%
Singapore	60%	46%	31%	30%	49%	64%	9%	5%	5%
Sierra Leone	7%	5%	4%	5%	8%	12%	88%	86%	85%
El Salvador	24%	15%	7%	39%	47%	49%	37%	38%	44%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Sweden	84%	61%	39%	10%	30%	42%	6%	9%	19%
Chad	6%	3%	2%	11%	14%	19%	83%	83%	80%
Togo	7%	4%	1%	12%	11%	10%	81%	85%	89%
Thailand	22%	16%	12%	25%	38%	59%	53%	46%	29%
Tunisia	62%	48%	36%	14%	33%	51%	24%	19%	13%
Turkey	57%	43%	34%	14%	32%	51%	30%	24%	15%
Tanzania	5%	2%	1%	12%	15%	18%	83%	82%	82%
Uganda	12%	9%	6%	10%	16%	24%	79%	76%	70%
Uruguay	74%	53%	36%	5%	21%	35%	21%	26%	29%
United States	87%	65%	42%	7%	30%	41%	6%	5%	17%
Vietnam	21%	18%	15%	18%	38%	66%	61%	44%	19%
South Africa	17%	7%	0%	75%	88%	95%	8%	5%	5%
Zimbabwe	22%	21%	15%	12%	28%	37%	66%	51%	48%

Table 6. Projections for developing countries from 2010 to 2030 under reformist scenario

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	89%	90%	10%	5%	5%	52%	6%	5%
Argentina	46%	75%	90%	36%	20%	5%	18%	5%	5%
Burundi	7%	12%	26%	7%	7%	5%	86%	81%	69%
Benin	6%	10%	18%	7%	6%	5%	87%	84%	77%
Bangladesh	5%	14%	35%	38%	64%	60%	57%	22%	5%
Bulgaria	75%	90%	90%	18%	5%	5%	8%	5%	5%
Bolivia	13%	25%	61%	33%	36%	34%	54%	39%	5%
Brazil	58%	90%	90%	20%	5%	5%	23%	5%	5%
Botswana	17%	31%	47%	73%	64%	48%	10%	5%	5%
Central African Republic	5%	6%	9%	8%	5%	5%	87%	88%	86%
Chile	56%	90%	90%	21%	5%	5%	23%	5%	5%
China	34%	83%	90%	19%	12%	5%	48%	5%	5%
Côte d'Ivoire	14%	11%	7%	10%	5%	5%	76%	84%	88%
Cameroon	17%	27%	45%	12%	7%	5%	71%	66%	50%
Congo, Rep.	12%	20%	39%	17%	15%	13%	71%	65%	48%
Colombia	30%	60%	90%	28%	29%	5%	43%	11%	5%
Costa Rica	57%	90%	90%	24%	5%	5%	19%	5%	5%
Dominican Republic	30%	64%	88%	34%	31%	7%	37%	5%	5%
Ecuador	27%	52%	87%	31%	32%	8%	42%	16%	5%
Egypt, Arab Rep.	54%	89%	90%	26%	6%	5%	21%	5%	5%
Ghana	10%	19%	49%	16%	18%	23%	74%	64%	28%
Guinea	7%	12%	26%	5%	5%	5%	88%	83%	69%
Guatemala	21%	37%	71%	38%	37%	24%	41%	26%	5%
Hong Kong SAR, China	76%	90%	90%	17%	5%	5%	7%	5%	5%
Honduras	18%	33%	72%	32%	34%	23%	50%	33%	5%
Hungary	86%	90%	90%	8%	5%	5%	6%	5%	5%
Indonesia	14%	28%	64%	31%	40%	31%	55%	32%	5%
India	12%	23%	72%	11%	14%	16%	78%	62%	12%
Iran, Islamic Rep.	41%	77%	90%	23%	15%	5%	36%	8%	5%
Iraq	43%	73%	90%	35%	22%	5%	21%	5%	5%
Israel	85%	90%	90%	8%	5%	5%	7%	5%	5%
Jamaica	21%	34%	64%	47%	41%	31%	32%	25%	5%
Jordan	52%	74%	90%	41%	21%	5%	7%	5%	5%
Kenya	19%	35%	77%	28%	29%	18%	53%	36%	5%
Cambodia	1%	4%	22%	28%	55%	73%	71%	41%	5%
Korea, Rep.	71%	90%	90%	5%	5%	5%	24%	5%	5%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Lao PDR	2%	4%	13%	15%	20%	31%	83%	75%	55%
Lebanon	11%	22%	46%	57%	59%	49%	32%	19%	5%
Sri Lanka	25%	56%	78%	36%	39%	17%	39%	5%	5%
Lesotho	17%	31%	47%	70%	64%	48%	13%	5%	5%
Morocco	30%	65%	90%	23%	27%	5%	46%	7%	5%
Madagascar	7%	12%	22%	9%	8%	6%	84%	80%	72%
Mexico	28%	54%	77%	44%	41%	18%	28%	5%	5%
Mali	11%	21%	37%	7%	5%	5%	82%	74%	58%
Mongolia	43%	70%	90%	5%	5%	5%	52%	25%	5%
Mozambique	13%	17%	41%	20%	67%	54%	67%	16%	5%
Mauritania	24%	58%	81%	30%	37%	14%	45%	5%	5%
Malaysia	56%	90%	90%	23%	5%	5%	21%	5%	5%
Namibia	20%	37%	55%	60%	58%	40%	20%	5%	5%
Niger	4%	6%	8%	7%	5%	5%	89%	89%	87%
Nigeria	12%	23%	90%	12%	16%	5%	76%	61%	5%
Nepal	4%	9%	23%	27%	33%	44%	69%	58%	32%
Pakistan	8%	16%	37%	33%	36%	46%	60%	49%	17%
Panama	62%	90%	90%	10%	5%	5%	28%	5%	5%
Peru	22%	48%	80%	32%	42%	15%	46%	10%	5%
Philippines	27%	51%	84%	34%	36%	11%	39%	12%	5%
Poland	77%	90%	90%	6%	5%	5%	17%	5%	5%
Paraguay	14%	27%	56%	44%	45%	39%	41%	28%	5%
Romania	65%	90%	90%	5%	5%	5%	30%	5%	5%
Rwanda	5%	12%	50%	18%	30%	45%	77%	57%	5%
Sudan	12%	35%	52%	37%	60%	43%	51%	5%	5%
Senegal	10%	20%	42%	37%	39%	44%	52%	41%	14%
Singapore	60%	89%	90%	30%	6%	5%	9%	5%	5%
Sierra Leone	7%	14%	39%	5%	5%	5%	88%	81%	56%
El Salvador	24%	45%	75%	39%	42%	20%	37%	12%	5%
Chad	6%	11%	30%	11%	12%	19%	83%	77%	52%
Togo	7%	11%	17%	12%	9%	7%	81%	80%	76%
Thailand	22%	46%	89%	25%	29%	6%	53%	25%	5%
Tunisia	62%	90%	90%	14%	5%	5%	24%	5%	5%
Turkey	57%	90%	90%	14%	5%	5%	30%	5%	5%
Tanzania	5%	9%	20%	12%	14%	18%	83%	77%	62%
Uganda	12%	23%	72%	10%	11%	11%	79%	66%	16%
Uruguay	74%	90%	90%	5%	5%	5%	21%	5%	5%
Vietnam	21%	48%	90%	18%	28%	5%	61%	23%	5%
South Africa	17%	30%	46%	75%	65%	49%	8%	5%	5%
Zimbabwe	22%	59%	90%	12%	19%	5%	66%	22%	5%

Table 7. Projections for all countries from 2010 to 2030 under baseline scenario and persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	46%	64%	10%	15%	25%	52%	40%	12%
Argentina	46%	41%	36%	36%	32%	32%	18%	27%	32%
Australia	87%	90%	86%	5%	5%	5%	8%	5%	9%
Austria	87%	80%	69%	5%	5%	5%	8%	15%	26%
Burundi	7%	6%	5%	7%	7%	6%	86%	87%	89%
Belgium	86%	82%	71%	5%	5%	5%	9%	13%	24%
Benin	6%	5%	4%	7%	6%	5%	87%	89%	91%
Bangladesh	5%	3%	0%	38%	50%	67%	57%	47%	32%
Bulgaria	75%	77%	76%	18%	18%	19%	8%	5%	5%
Bolivia	13%	10%	8%	33%	29%	27%	54%	61%	66%
Brazil	58%	57%	55%	20%	19%	19%	23%	24%	27%
Botswana	17%	14%	10%	73%	81%	85%	10%	5%	5%
Central African Republic	5%	3%	0%	8%	5%	5%	87%	92%	95%
Canada	82%	84%	74%	5%	5%	5%	13%	11%	21%
Switzerland	86%	71%	59%	5%	5%	5%	9%	24%	36%
Chile	56%	62%	66%	21%	24%	26%	23%	14%	8%
China	34%	54%	57%	19%	41%	38%	48%	5%	5%
Côte d'Ivoire	14%	6%	0%	10%	5%	5%	76%	89%	95%
Cameroon	17%	14%	10%	12%	9%	7%	71%	78%	84%
Congo, Rep.	12%	9%	7%	17%	14%	11%	71%	77%	82%
Colombia	30%	29%	28%	28%	28%	30%	43%	44%	42%
Costa Rica	57%	61%	63%	24%	27%	28%	19%	12%	9%
Germany	83%	74%	64%	11%	8%	6%	6%	18%	30%
Denmark	88%	85%	71%	7%	5%	5%	5%	10%	24%
Dominican Republic	30%	29%	30%	34%	37%	42%	37%	34%	28%
Ecuador	27%	25%	22%	31%	30%	29%	42%	46%	49%
Egypt, Arab Rep.	54%	52%	46%	26%	25%	23%	21%	24%	30%
Spain	65%	69%	68%	26%	26%	27%	9%	5%	5%
Finland	85%	85%	76%	6%	5%	5%	9%	10%	19%
France	82%	79%	66%	11%	9%	7%	6%	12%	28%
United Kingdom	85%	77%	61%	5%	5%	5%	10%	18%	34%
Ghana	10%	9%	8%	16%	16%	18%	74%	76%	74%
Guinea	7%	6%	6%	5%	5%	5%	88%	89%	89%
Greece	71%	72%	62%	5%	5%	5%	24%	23%	33%
Guatemala	21%	17%	11%	38%	31%	23%	41%	52%	65%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Hong Kong SAR, China	76%	79%	78%	17%	16%	17%	7%	5%	5%
Honduras	18%	15%	13%	32%	29%	30%	50%	55%	58%
Hungary	86%	84%	80%	8%	7%	5%	6%	9%	15%
Indonesia	14%	12%	11%	31%	33%	41%	55%	55%	48%
India	12%	11%	13%	11%	14%	17%	78%	75%	70%
Ireland	83%	89%	88%	7%	6%	7%	10%	5%	5%
Iran, Islamic Rep.	41%	39%	38%	23%	21%	22%	36%	40%	40%
Iraq	43%	37%	28%	35%	30%	23%	21%	32%	49%
Israel	85%	82%	67%	8%	5%	5%	7%	13%	28%
Italy	78%	73%	61%	5%	5%	5%	17%	22%	34%
Jamaica	21%	15%	10%	47%	36%	29%	32%	49%	60%
Jordan	52%	49%	49%	41%	43%	46%	7%	8%	5%
Japan	85%	77%	63%	5%	5%	5%	10%	18%	32%
Kenya	19%	16%	12%	28%	25%	22%	53%	59%	66%
Cambodia	1%	0%	0%	28%	42%	58%	71%	58%	42%
Korea, Rep.	71%	90%	90%	5%	5%	5%	24%	5%	5%
Lao PDR	2%	1%	0%	15%	16%	18%	83%	83%	82%
Lebanon	11%	8%	6%	57%	46%	60%	32%	46%	34%
Sri Lanka	25%	28%	33%	36%	51%	62%	39%	21%	5%
Lesotho	17%	12%	8%	70%	64%	68%	13%	24%	24%
Morocco	30%	32%	36%	23%	28%	35%	46%	40%	30%
Madagascar	7%	6%	4%	9%	8%	7%	84%	86%	89%
Mexico	28%	24%	19%	44%	40%	35%	28%	36%	46%
Mali	11%	11%	9%	7%	6%	5%	82%	83%	86%
Mongolia	43%	44%	61%	5%	5%	6%	52%	51%	33%
Mozambique	13%	4%	3%	20%	51%	86%	67%	45%	11%
Mauritania	24%	26%	27%	30%	40%	48%	45%	34%	25%
Malaysia	56%	52%	57%	23%	23%	28%	21%	25%	15%
Namibia	20%	17%	13%	60%	62%	62%	20%	21%	25%
Niger	4%	3%	1%	7%	5%	5%	89%	92%	94%
Nigeria	12%	10%	15%	12%	13%	29%	76%	77%	56%
Netherlands	85%	80%	66%	5%	5%	5%	10%	15%	29%
Norway	90%	80%	65%	5%	5%	5%	5%	15%	30%
Nepal	4%	2%	1%	27%	27%	27%	69%	71%	72%
Pakistan	8%	6%	4%	33%	29%	25%	60%	65%	71%
Panama	62%	68%	82%	10%	13%	13%	28%	19%	5%
Peru	22%	22%	23%	32%	35%	43%	46%	43%	35%
Philippines	27%	24%	22%	34%	32%	35%	39%	44%	43%
Poland	77%	89%	89%	6%	6%	6%	17%	5%	5%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Portugal	79%	86%	78%	5%	5%	5%	16%	9%	17%
Paraguay	14%	11%	7%	44%	36%	30%	41%	53%	63%
Romania	65%	78%	87%	5%	11%	8%	30%	11%	5%
Rwanda	5%	4%	4%	18%	24%	35%	77%	72%	61%
Sudan	12%	12%	12%	37%	57%	78%	51%	32%	11%
Senegal	10%	8%	5%	37%	32%	25%	52%	61%	70%
Singapore	60%	64%	63%	30%	31%	32%	9%	5%	5%
Sierra Leone	7%	7%	7%	5%	6%	6%	88%	88%	87%
El Salvador	24%	21%	16%	39%	35%	30%	37%	44%	54%
Sweden	84%	78%	67%	10%	7%	5%	6%	15%	28%
Chad	6%	5%	4%	11%	10%	12%	83%	85%	84%
Togo	7%	5%	3%	12%	9%	6%	81%	87%	91%
Thailand	22%	22%	24%	25%	27%	34%	53%	51%	42%
Tunisia	62%	62%	62%	14%	14%	15%	24%	25%	23%
Turkey	57%	56%	61%	14%	15%	17%	30%	29%	22%
Tanzania	5%	4%	3%	12%	12%	11%	83%	84%	86%
Uganda	12%	11%	12%	10%	11%	13%	79%	78%	75%
Uruguay	74%	65%	61%	5%	5%	5%	21%	30%	34%
United States	87%	85%	72%	7%	5%	5%	6%	10%	23%
Vietnam	21%	23%	29%	18%	27%	37%	61%	50%	34%
South Africa	17%	13%	8%	75%	71%	71%	8%	16%	20%
Zimbabwe	22%	27%	29%	12%	18%	19%	66%	55%	53%

Table 8. Projections for all countries from 2010 to 2030 under populist scenario and persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	28%	18%	10%	23%	38%	52%	49%	44%
Argentina	46%	24%	8%	36%	37%	32%	18%	39%	60%
Australia	87%	57%	26%	5%	21%	25%	8%	22%	48%
Austria	87%	55%	24%	5%	16%	20%	8%	30%	56%
Burundi	7%	3%	1%	7%	8%	7%	86%	89%	92%
Belgium	86%	53%	23%	5%	18%	21%	9%	29%	56%
Benin	6%	3%	1%	7%	7%	6%	87%	90%	94%
Bangladesh	5%	0%	0%	38%	49%	55%	57%	51%	45%
Bulgaria	75%	55%	33%	18%	40%	62%	8%	5%	5%
Bolivia	13%	5%	0%	33%	29%	23%	54%	66%	77%
Brazil	58%	34%	14%	20%	27%	26%	23%	38%	59%
Botswana	17%	3%	0%	73%	91%	88%	10%	6%	12%
Central African Republic	5%	2%	0%	8%	5%	5%	87%	93%	95%
Canada	82%	53%	23%	5%	18%	21%	13%	29%	57%
Switzerland	86%	51%	22%	5%	13%	17%	9%	36%	61%
Chile	56%	37%	17%	21%	34%	35%	23%	29%	47%
China	34%	30%	20%	19%	53%	75%	48%	17%	5%
Côte d'Ivoire	14%	4%	0%	10%	5%	5%	76%	90%	95%
Cameroon	17%	8%	2%	12%	11%	8%	71%	81%	89%
Congo, Rep.	12%	5%	1%	17%	15%	11%	71%	80%	88%
Colombia	30%	16%	6%	28%	31%	30%	43%	53%	64%
Costa Rica	57%	37%	16%	24%	36%	36%	19%	27%	48%
Germany	83%	46%	19%	11%	21%	22%	6%	33%	58%
Denmark	88%	53%	22%	7%	21%	22%	5%	26%	56%
Dominican Republic	30%	16%	5%	34%	39%	37%	37%	45%	58%
Ecuador	27%	14%	4%	31%	32%	29%	42%	54%	67%
Egypt, Arab Rep.	54%	31%	11%	26%	31%	27%	21%	38%	62%
Spain	65%	46%	22%	26%	42%	47%	9%	11%	31%
Finland	85%	53%	23%	6%	21%	24%	9%	26%	53%
France	82%	49%	20%	11%	24%	23%	6%	27%	57%
United Kingdom	85%	52%	20%	5%	15%	16%	10%	33%	64%
Ghana	10%	4%	1%	16%	17%	18%	74%	79%	82%
Guinea	7%	5%	3%	5%	5%	5%	88%	90%	92%
Greece	71%	53%	24%	5%	12%	18%	24%	35%	58%
Guatemala	21%	9%	1%	38%	32%	22%	41%	59%	77%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Hong Kong SAR, China	76%	50%	28%	17%	34%	47%	7%	16%	25%
Honduras	18%	8%	1%	32%	31%	29%	50%	61%	70%
Hungary	86%	53%	24%	8%	22%	26%	6%	25%	49%
Indonesia	14%	6%	0%	31%	34%	36%	55%	61%	64%
India	12%	6%	2%	11%	15%	19%	78%	78%	79%
Ireland	83%	63%	31%	7%	27%	33%	10%	9%	36%
Iran, Islamic Rep.	41%	24%	10%	23%	28%	30%	36%	49%	60%
Iraq	43%	21%	6%	35%	33%	21%	21%	45%	73%
Israel	85%	51%	19%	8%	19%	18%	7%	30%	63%
Italy	78%	52%	23%	5%	13%	17%	17%	35%	60%
Jamaica	21%	7%	0%	47%	37%	30%	32%	56%	70%
Jordan	52%	29%	11%	41%	48%	51%	7%	23%	38%
Japan	85%	54%	23%	5%	14%	18%	10%	32%	59%
Kenya	19%	9%	2%	28%	27%	21%	53%	64%	77%
Cambodia	1%	0%	0%	28%	40%	48%	71%	60%	52%
Korea, Rep.	71%	62%	41%	5%	21%	38%	24%	18%	21%
Lao PDR	2%	0%	0%	15%	16%	16%	83%	84%	84%
Lebanon	11%	2%	0%	57%	46%	49%	32%	53%	51%
Sri Lanka	25%	15%	3%	36%	53%	71%	39%	33%	26%
Lesotho	17%	3%	0%	70%	64%	56%	13%	33%	44%
Morocco	30%	19%	8%	23%	33%	38%	46%	49%	54%
Madagascar	7%	3%	1%	9%	9%	7%	84%	88%	92%
Mexico	28%	13%	2%	44%	42%	34%	28%	45%	64%
Mali	11%	7%	2%	7%	8%	7%	82%	85%	90%
Mongolia	43%	30%	19%	5%	12%	22%	52%	58%	59%
Mozambique	13%	0%	0%	20%	48%	64%	67%	52%	36%
Mauritania	24%	14%	4%	30%	43%	48%	45%	43%	49%
Malaysia	56%	31%	14%	23%	30%	34%	21%	38%	52%
Namibia	20%	6%	0%	60%	63%	55%	20%	31%	45%
Niger	4%	2%	0%	7%	5%	5%	89%	93%	95%
Nigeria	12%	6%	2%	12%	13%	20%	76%	81%	79%
Netherlands	85%	53%	22%	5%	16%	19%	10%	30%	59%
Norway	90%	51%	20%	5%	18%	19%	5%	31%	61%
Nepal	4%	0%	0%	27%	27%	25%	69%	73%	75%
Pakistan	8%	2%	0%	33%	29%	23%	60%	70%	77%
Panama	62%	41%	23%	10%	24%	35%	28%	36%	42%
Peru	22%	12%	3%	32%	37%	38%	46%	51%	59%
Philippines	27%	13%	3%	34%	34%	31%	39%	53%	65%
Poland	77%	55%	30%	6%	25%	34%	17%	20%	36%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Portugal	79%	60%	28%	5%	16%	22%	16%	24%	50%
Paraguay	14%	5%	0%	44%	37%	27%	41%	59%	73%
Romania	65%	48%	32%	5%	25%	44%	30%	27%	24%
Rwanda	5%	1%	0%	18%	23%	29%	77%	75%	71%
Sudan	12%	4%	0%	37%	56%	64%	51%	40%	36%
Senegal	10%	3%	0%	37%	32%	23%	52%	66%	77%
Singapore	60%	38%	19%	30%	42%	52%	9%	20%	28%
Sierra Leone	7%	4%	2%	5%	7%	7%	88%	89%	92%
El Salvador	24%	11%	2%	39%	37%	28%	37%	53%	70%
Sweden	84%	48%	20%	10%	21%	22%	6%	30%	58%
Chad	6%	2%	0%	11%	11%	11%	83%	87%	89%
Togo	7%	3%	0%	12%	9%	6%	81%	88%	94%
Thailand	22%	12%	4%	25%	30%	35%	53%	58%	61%
Tunisia	62%	38%	18%	14%	24%	27%	24%	38%	55%
Turkey	57%	34%	16%	14%	23%	26%	30%	43%	59%
Tanzania	5%	2%	0%	12%	12%	11%	83%	86%	89%
Uganda	12%	7%	2%	10%	12%	14%	79%	81%	84%
Uruguay	74%	42%	18%	5%	15%	18%	21%	43%	65%
United States	87%	53%	21%	7%	21%	22%	6%	26%	57%
Vietnam	21%	13%	6%	18%	30%	40%	61%	57%	55%
South Africa	17%	3%	0%	75%	69%	55%	8%	27%	45%
Zimbabwe	22%	16%	6%	12%	20%	18%	66%	64%	76%

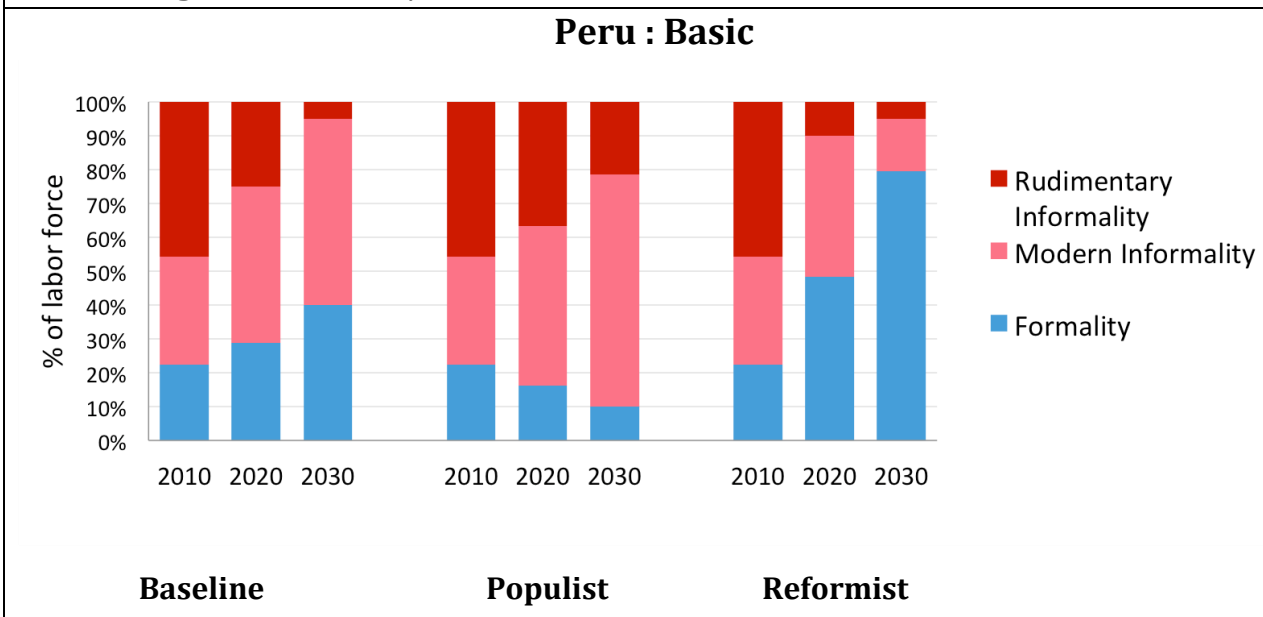
Table 9. Projections for developing countries from 2010 to 2030 under reformist scenario and persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	67%	90%	10%	5%	5%	52%	28%	5%
Argentina	46%	67%	90%	36%	22%	5%	18%	11%	5%
Burundi	7%	10%	13%	7%	5%	5%	86%	85%	82%
Benin	6%	8%	8%	7%	5%	5%	87%	87%	87%
Bangladesh	5%	10%	27%	38%	51%	68%	57%	40%	5%
Bulgaria	75%	90%	90%	18%	5%	5%	8%	5%	5%
Bolivia	13%	19%	33%	33%	28%	25%	54%	53%	42%
Brazil	58%	89%	90%	20%	5%	5%	23%	6%	5%
Botswana	17%	28%	42%	73%	67%	53%	10%	5%	5%
Central African Republic	5%	4%	3%	8%	5%	5%	87%	91%	92%
Chile	56%	90%	90%	21%	5%	5%	23%	5%	5%
China	34%	82%	90%	19%	13%	5%	48%	5%	5%
Côte d'Ivoire	14%	8%	2%	10%	5%	5%	76%	87%	93%
Cameroon	17%	22%	22%	12%	5%	5%	71%	73%	73%
Congo, Rep.	12%	16%	22%	17%	11%	6%	71%	73%	72%
Colombia	30%	47%	90%	28%	20%	5%	43%	32%	5%
Costa Rica	57%	90%	90%	24%	5%	5%	19%	5%	5%
Dominican Republic	30%	50%	87%	34%	31%	8%	37%	19%	5%
Ecuador	27%	41%	74%	31%	24%	13%	42%	36%	14%
Egypt, Arab Rep.	54%	84%	90%	26%	10%	5%	21%	5%	5%
Ghana	10%	15%	27%	16%	14%	12%	74%	72%	61%
Guinea	7%	8%	12%	5%	5%	5%	88%	87%	83%
Guatemala	21%	29%	42%	38%	28%	17%	41%	43%	42%
Hong Kong SAR, China	76%	90%	90%	17%	5%	5%	7%	5%	5%
Honduras	18%	26%	46%	32%	26%	21%	50%	48%	34%
Hungary	86%	90%	90%	8%	5%	5%	6%	5%	5%
Indonesia	14%	22%	48%	31%	31%	37%	55%	47%	15%
India	12%	19%	40%	11%	11%	7%	78%	71%	53%
Iran, Islamic Rep.	41%	62%	90%	23%	9%	5%	36%	29%	5%
Iraq	43%	63%	90%	35%	22%	5%	21%	15%	5%
Israel	85%	90%	90%	8%	5%	5%	7%	5%	5%
Jamaica	21%	26%	37%	47%	32%	21%	32%	42%	42%
Jordan	52%	73%	90%	41%	22%	5%	7%	5%	5%
Kenya	19%	27%	43%	28%	22%	13%	53%	51%	44%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Cambodia	1%	2%	9%	28%	44%	70%	71%	54%	21%
Korea, Rep.	71%	90%	90%	5%	5%	5%	24%	5%	5%
Lao PDR	2%	3%	6%	15%	16%	18%	83%	81%	76%
Lebanon	11%	16%	41%	57%	46%	54%	32%	38%	5%
Sri Lanka	25%	48%	76%	36%	45%	19%	39%	6%	5%
Lesotho	17%	25%	41%	70%	63%	54%	13%	13%	5%
Morocco	30%	52%	90%	23%	19%	5%	46%	29%	5%
Madagascar	7%	9%	11%	9%	6%	5%	84%	84%	84%
Mexico	28%	41%	67%	44%	34%	21%	28%	24%	13%
Mali	11%	16%	18%	7%	5%	5%	82%	79%	77%
Mongolia	43%	53%	90%	5%	5%	5%	52%	42%	5%
Mozambique	13%	12%	36%	20%	52%	59%	67%	36%	5%
Mauritania	24%	44%	80%	30%	34%	15%	45%	22%	5%
Malaysia	56%	84%	90%	23%	8%	5%	21%	8%	5%
Namibia	20%	32%	50%	60%	60%	45%	20%	9%	5%
Niger	4%	4%	3%	7%	5%	5%	89%	91%	92%
Nigeria	12%	18%	75%	12%	11%	20%	76%	71%	5%
Nepal	4%	6%	12%	27%	26%	26%	69%	67%	62%
Pakistan	8%	12%	19%	33%	28%	25%	60%	60%	56%
Panama	62%	90%	90%	10%	5%	5%	28%	5%	5%
Peru	22%	38%	78%	32%	31%	17%	46%	31%	5%
Philippines	27%	40%	83%	34%	26%	12%	39%	33%	5%
Poland	77%	90%	90%	6%	5%	5%	17%	5%	5%
Paraguay	14%	20%	31%	44%	35%	27%	41%	45%	42%
Romania	65%	90%	90%	5%	5%	5%	30%	5%	5%
Rwanda	5%	9%	25%	18%	24%	39%	77%	67%	36%
Sudan	12%	24%	48%	37%	56%	47%	51%	20%	5%
Senegal	10%	15%	22%	37%	30%	24%	52%	55%	54%
Singapore	60%	89%	90%	30%	6%	5%	9%	5%	5%
Sierra Leone	7%	11%	20%	5%	5%	5%	88%	84%	75%
El Salvador	24%	36%	59%	39%	31%	21%	37%	33%	20%
Chad	6%	8%	16%	11%	9%	9%	83%	82%	75%
Togo	7%	8%	8%	12%	7%	5%	81%	84%	87%
Thailand	22%	36%	80%	25%	21%	15%	53%	42%	5%
Tunisia	62%	87%	90%	14%	5%	5%	24%	8%	5%
Turkey	57%	84%	90%	14%	5%	5%	30%	11%	5%
Tanzania	5%	7%	11%	12%	11%	10%	83%	82%	79%
Uganda	12%	18%	37%	10%	8%	5%	79%	74%	58%
Uruguay	74%	77%	90%	5%	5%	5%	21%	18%	5%
Vietnam	21%	39%	90%	18%	21%	5%	61%	41%	5%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	**2020**	**2030**	**2010**	**2020**	**2030**	**2010**	**2020**	**2030**
South Africa	17%	27%	41%	75%	68%	54%	8%	5%	5%
Zimbabwe	22%	46%	90%	12%	12%	5%	66%	42%	5%

Figure 2a. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.



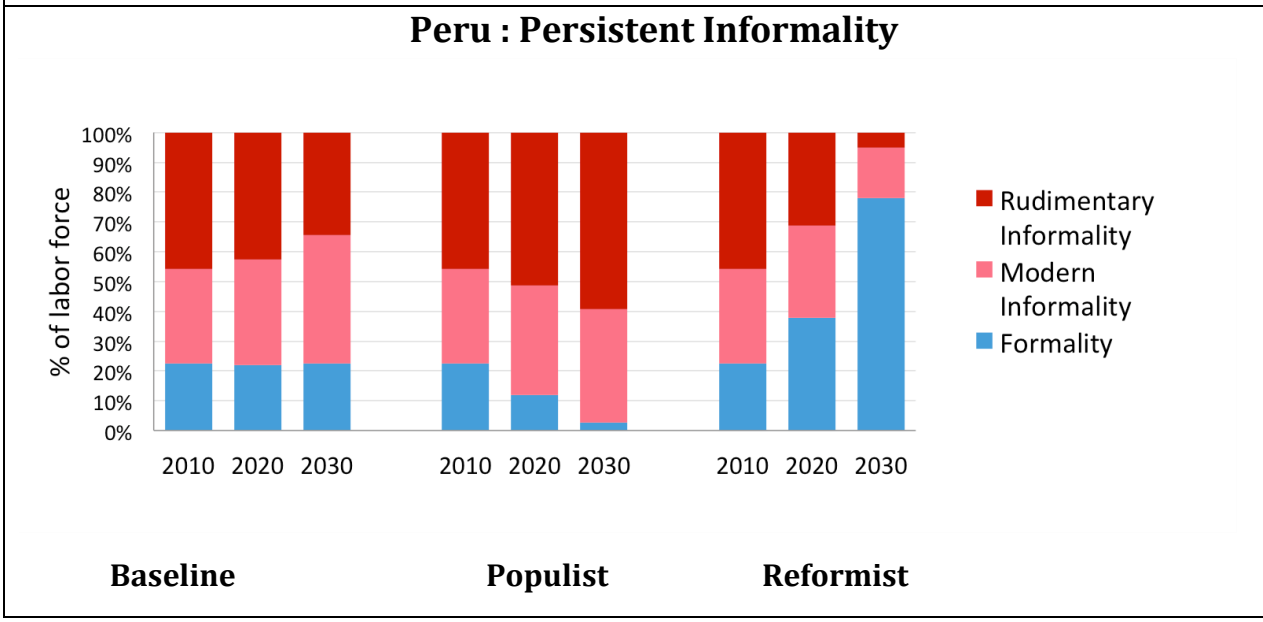


Figure 2b. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

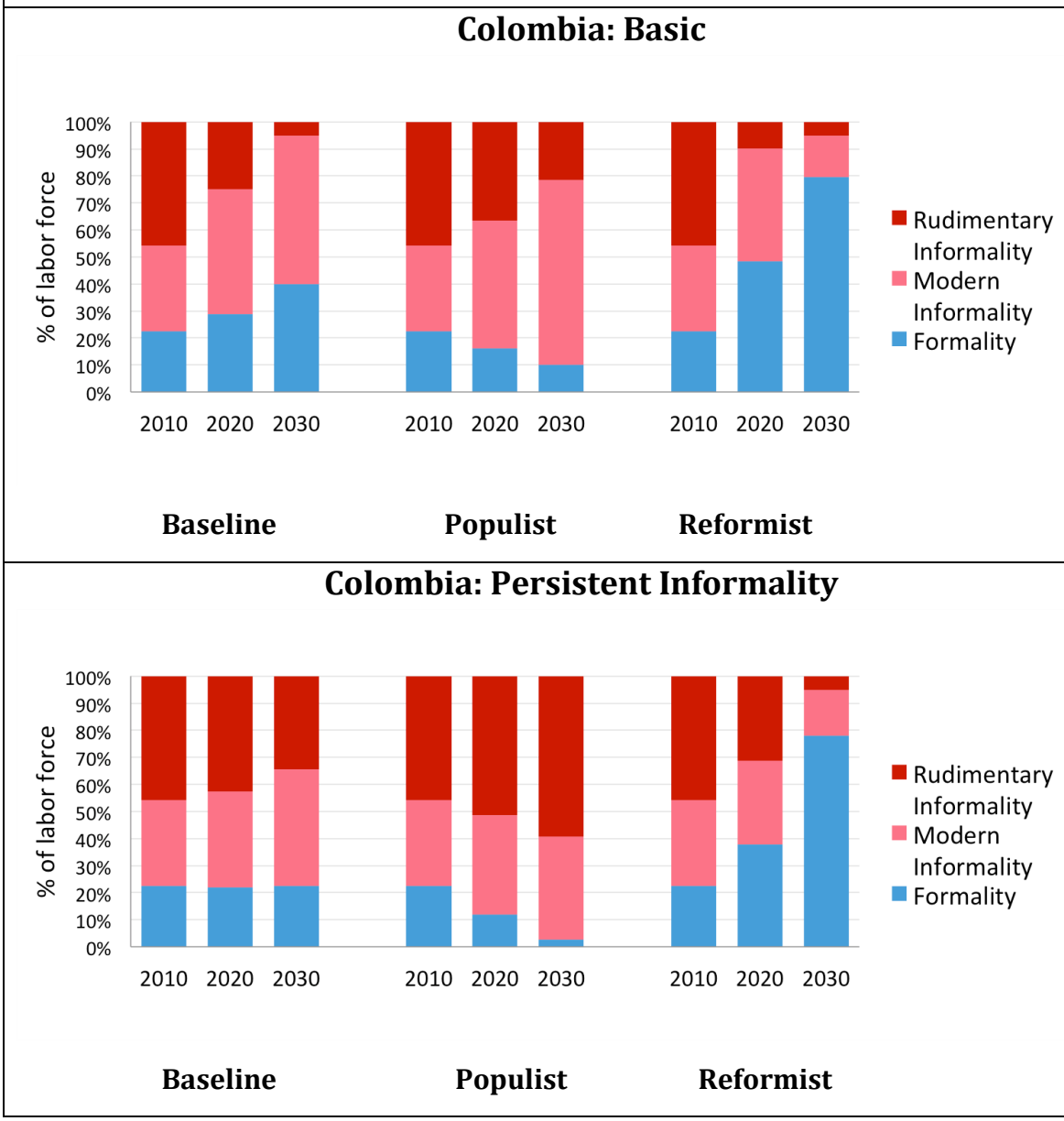
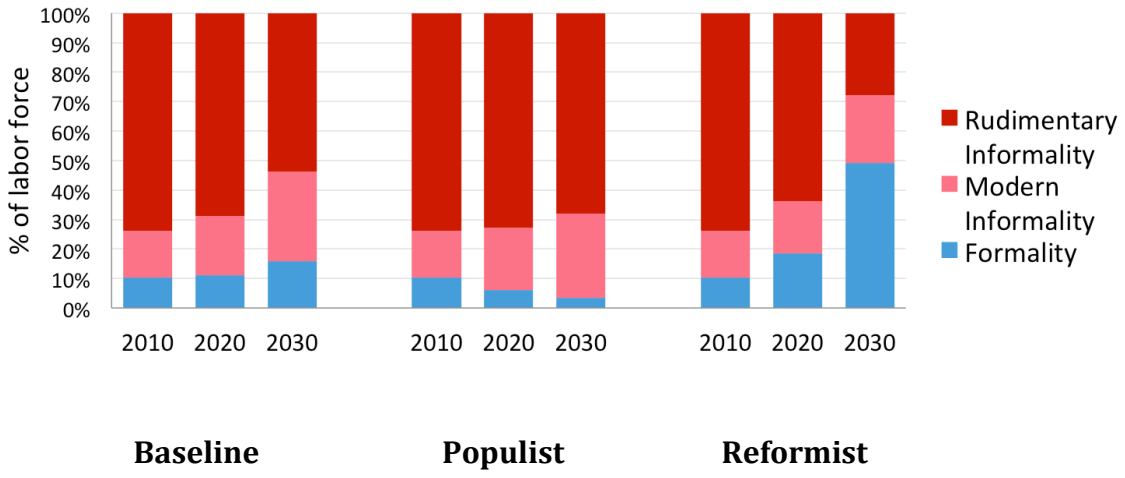


Figure 2c. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Ghana: Basic



Ghana: Persistent Informality

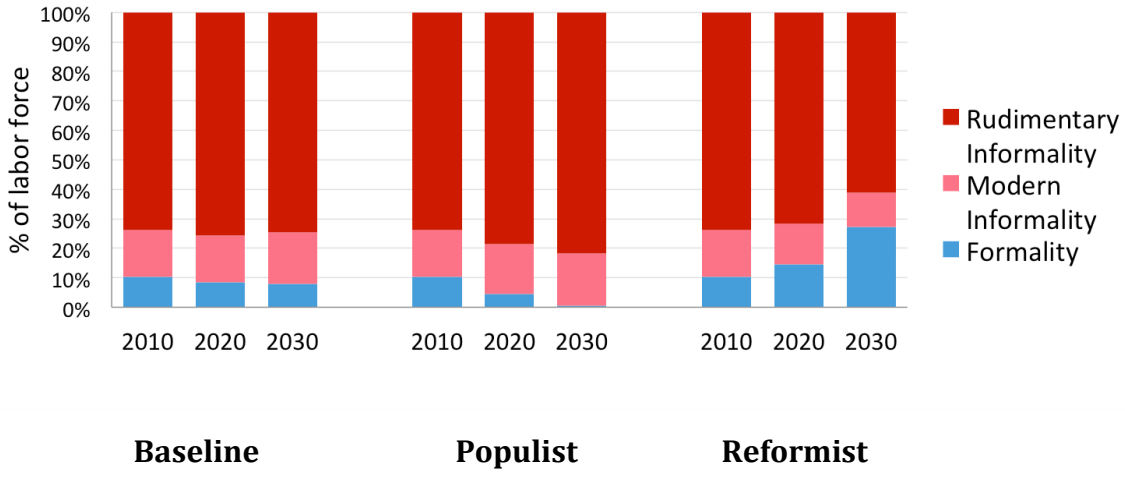
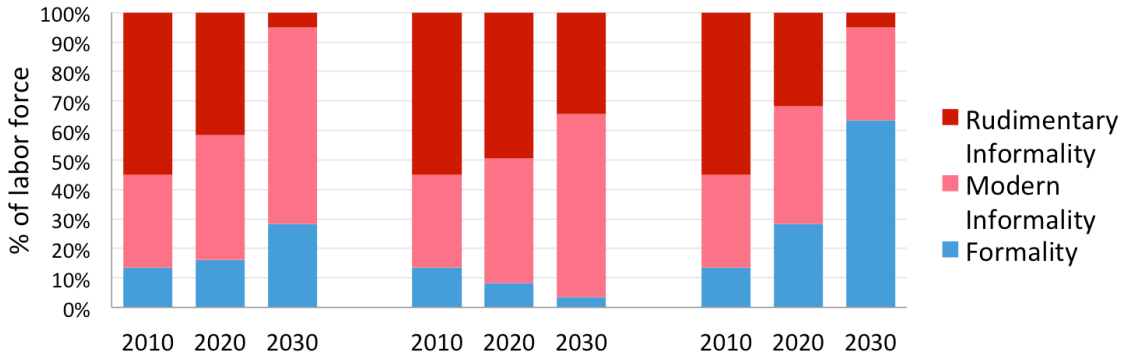


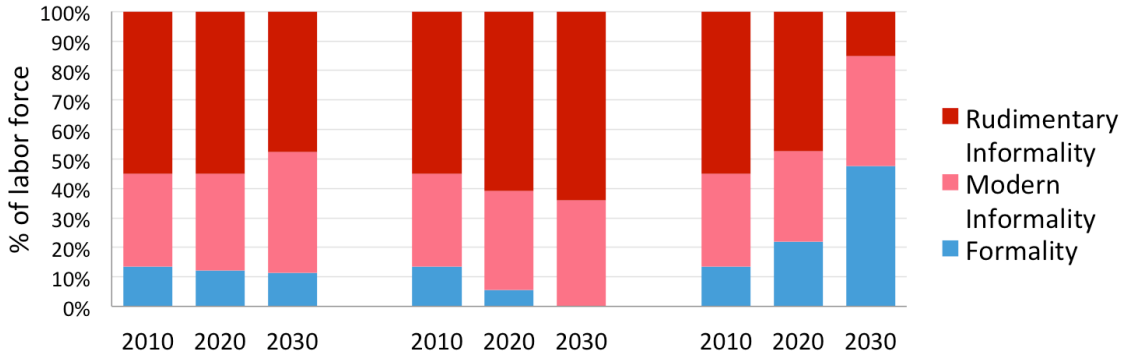
Figure 2d. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Indonesia: Basic



Baseline **Populist** **Reformist**

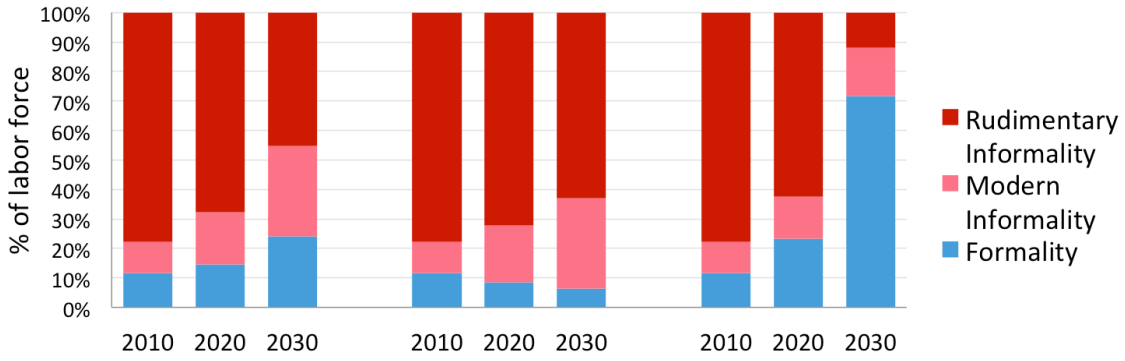
Indonesia: Persistent Informality



Baseline **Populist** **Reformist**

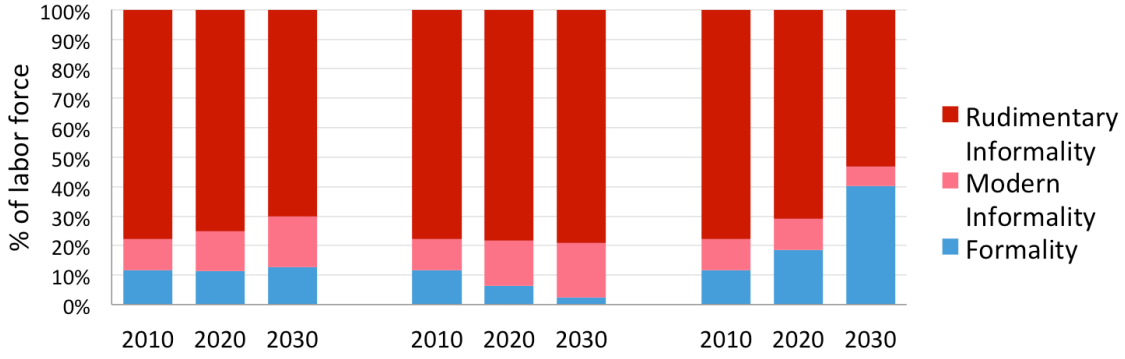
Figure 2e. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

India: Basic



Baseline **Populist** **Reformist**

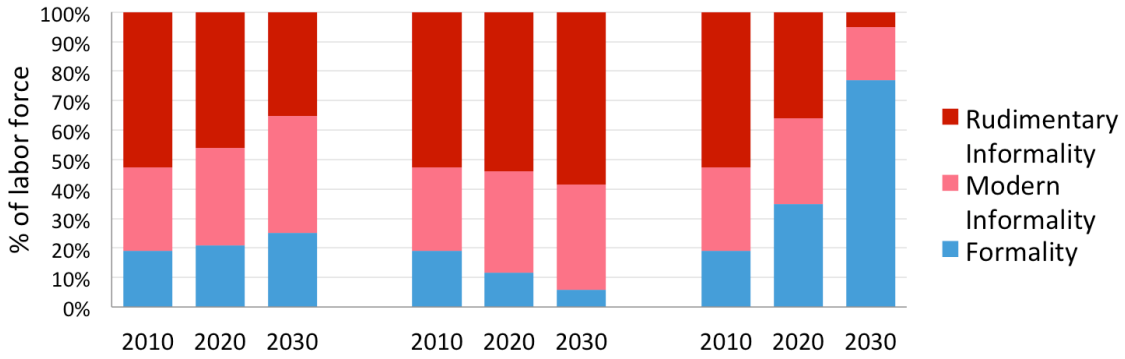
India: Persistent Informality



Baseline **Populist** **Reformist**

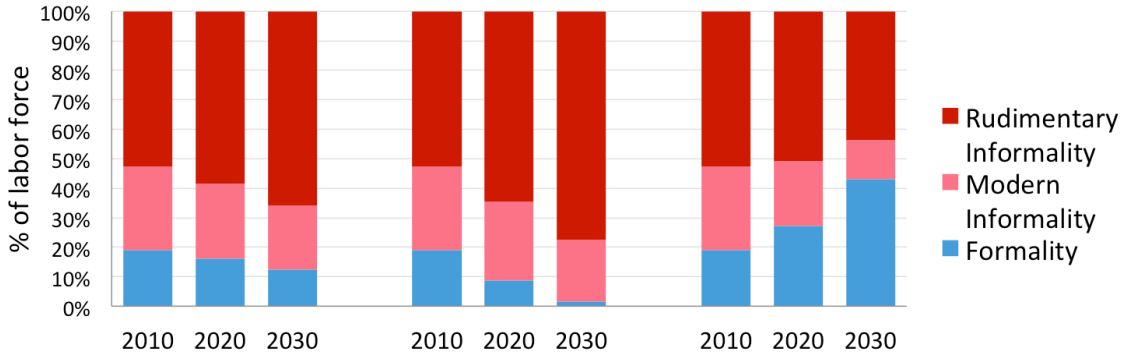
Figure 2f. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Kenya: Basic



Baseline **Populist** **Reformist**

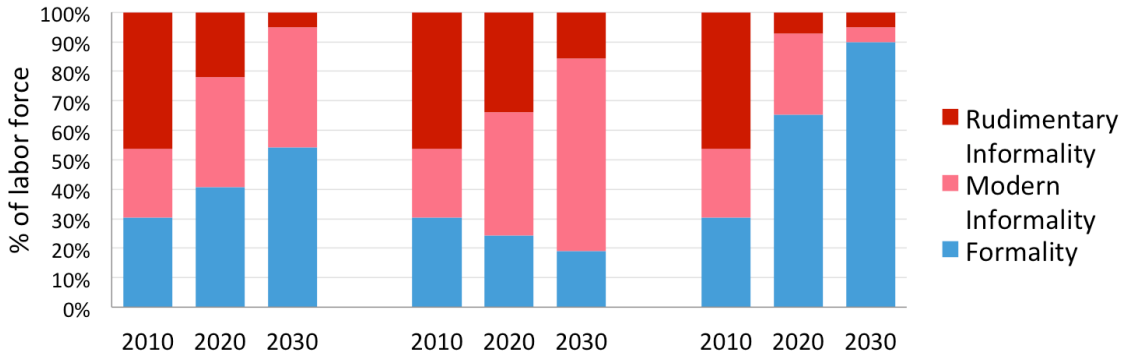
Kenya: Persistent Informality



Baseline **Populist** **Reformist**

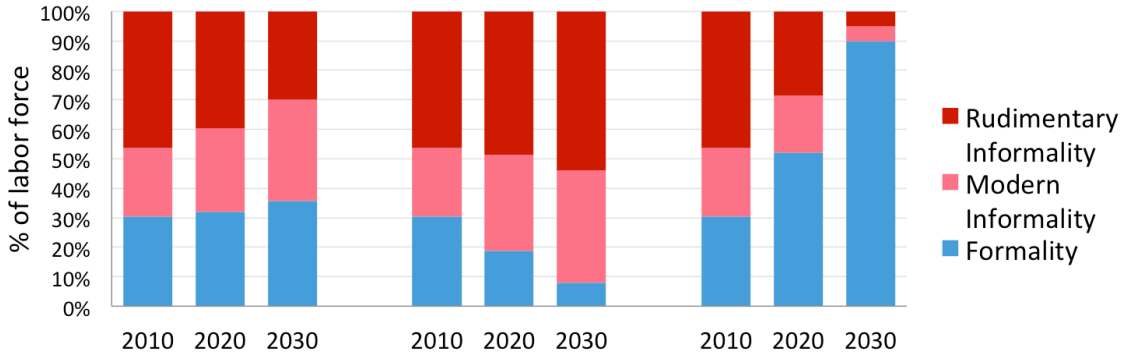
Figure 2g. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Morocco: Basic



Baseline **Populist** **Reformist**

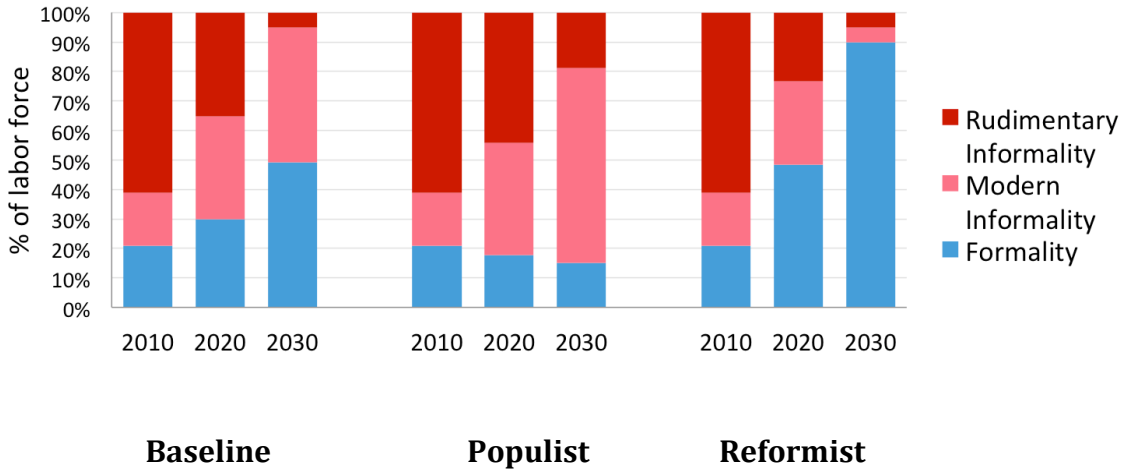
Morocco: Persistent Informality



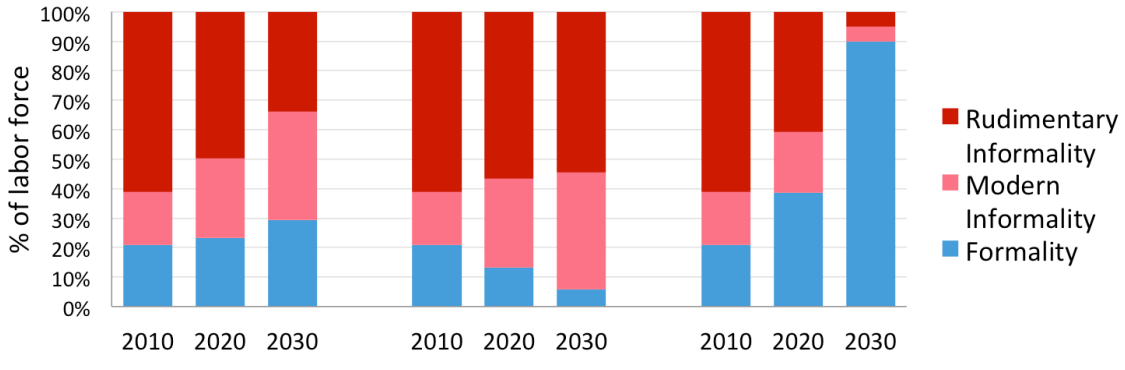
Baseline **Populist** **Reformist**

Figure 2h. Projections for formal and informal labor over time for selected countries under baseline, populist and reformist scenarios. The first panel shows results under the standard options and the second, using persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Vietnam: Basic



Vietnam: Persistent Informality



Appendix

Table A1. Initial conditions by country in 2010 using country-specific capital share

Country	Formal (% of the labor force)	Informal Modern (% of the labor force)	Informal Rud. (% of the labor force)	Modern Informal Wage / Expected Wage in the Modern Economy	Modern Informal Wage/ Min. Wage	Informal Rud. Wage / Min. Wage
Albania	39%	10%	52%	0.44	0.39	0.49
Argentina	46%	36%	18%	0.45	0.33	0.39
Australia	87%	5%	8%	0.48	0.47	0.54
Austria	90%	2%	8%	0.51	0.50	0.55
Burundi	7%	7%	86%	0.76	0.52	0.42
Belgium	87%	4%	9%	0.51	0.49	0.54
Benin	6%	7%	87%	0.75	0.49	0.40
Bangladesh	5%	38%	57%	0.85	0.39	0.25
Bulgaria	75%	18%	8%	0.43	0.38	0.49
Bolivia	13%	33%	54%	0.73	0.41	0.32
Brazil	58%	20%	23%	0.51	0.43	0.47
Botswana	17%	73%	10%	0.29	0.15	0.17
Central African Republic	5%	8%	87%	0.13	0.08	0.23
Canada	83%	4%	13%	0.48	0.47	0.54
Switzerland	92%	-1%	9%	0.52	0.52	0.56
Chile	56%	21%	23%	0.40	0.33	0.45
China	34%	19%	48%	0.49	0.38	0.43
Côte d'Ivoire	14%	10%	76%	0.54	0.40	0.42
Cameroon	17%	12%	71%	0.53	0.40	0.42
Congo, Rep.	12%	17%	71%	0.61	0.39	0.35
Colombia	30%	28%	43%	0.54	0.38	0.39
Costa Rica	57%	24%	19%	0.59	0.48	0.47
Germany	83%	11%	6%	0.55	0.51	0.52
Denmark	88%	7%	5%	0.54	0.52	0.53
Dominican Republic	30%	34%	37%	0.48	0.32	0.35
Ecuador	27%	31%	42%	0.16	0.11	0.29
Egypt, Arab Rep.	54%	26%	21%	0.30	0.24	0.42
Spain	65%	26%	9%	0.62	0.51	0.48
Finland	85%	6%	9%	0.51	0.49	0.53
France	82%	11%	6%	0.54	0.50	0.52
United Kingdom	88%	1%	10%	0.51	0.50	0.55
Ghana	10%	16%	74%	0.62	0.39	0.35

Country	Formal (% of the labor force)	Informal Modern (% of the labor force)	Informal Rud. (% of the labor force)	Modern Informal Wage / Expected Wage in the Modern Economy	Modern Informal Wage/ Min. Wage	Informal Rud. Wage / Min. Wage
Guinea	13%	-1%	88%	0.37	0.39	0.57
Greece	79%	-3%	24%	0.40	0.41	0.57
Guatemala	21%	38%	41%	0.56	0.34	0.32
Hong Kong SAR, China	76%	17%	7%	0.45	0.40	0.49
Honduras	18%	32%	50%	0.76	0.46	0.36
Hungary	86%	8%	6%	0.52	0.49	0.53
Indonesia	14%	31%	55%	0.61	0.35	0.30
India	12%	11%	78%	0.62	0.44	0.40
Ireland	83%	7%	10%	0.39	0.38	0.53
Iran, Islamic Rep.	41%	23%	36%	0.25	0.20	0.39
Iraq	43%	35%	21%	0.08	0.06	0.32
Israel	85%	8%	7%	0.49	0.46	0.53
Italy	85%	-2%	17%	0.44	0.44	0.56
Jamaica	21%	47%	32%	0.74	0.43	0.34
Jordan	52%	41%	7%	0.50	0.37	0.40
Japan	92%	-1%	10%	0.42	0.43	0.56
Kenya	19%	28%	53%	0.82	0.52	0.40
Cambodia	1%	28%	71%	0.97	0.39	0.22
Korea, Rep.	77%	-1%	24%	0.43	0.44	0.56
Lao PDR	2%	15%	83%	0.84	0.39	0.25
Lebanon	11%	57%	32%	0.63	0.31	0.23
Sri Lanka	25%	36%	39%	0.81	0.52	0.40
Lesotho	17%	70%	13%	1.02	0.52	0.34
Morocco	30%	23%	46%	0.55	0.41	0.41
Madagascar	7%	9%	84%	0.60	0.39	0.36
Mexico	28%	44%	28%	0.45	0.28	0.31
Mali	11%	7%	82%	0.51	0.39	0.42
Mongolia	46%	2%	52%	0.28	0.27	0.54
Mozambique	13%	20%	67%	0.50	0.31	0.32
Mauritania	24%	30%	45%	0.67	0.44	0.38
Malaysia	56%	23%	21%	0.51	0.42	0.46
Namibia	20%	60%	20%	0.89	0.48	0.34
Niger	4%	7%	89%	0.72	0.45	0.37
Nigeria	12%	12%	76%	0.40	0.28	0.35
Netherlands	87%	2%	10%	0.50	0.49	0.55
Norway	90%	5%	5%	0.45	0.43	0.54
Nepal	4%	27%	69%	0.83	0.39	0.26

Country	Formal (% of the labor force)	Informal Modern (% of the labor force)	Informal Rud. (% of the labor force)	Modern Informal Wage / Expected Wage in the Modern Economy	Modern Informal Wage/ Min. Wage	Informal Rud. Wage / Min. Wage
Pakistan	8%	33%	60%	0.77	0.39	0.28
Panama	62%	10%	28%	0.34	0.31	0.50
Peru	22%	32%	46%	0.36	0.23	0.30
Philippines	27%	34%	39%	0.46	0.30	0.34
Poland	77%	6%	17%	0.50	0.47	0.53
Portugal	86%	-1%	16%	0.51	0.52	0.56
Paraguay	14%	44%	41%	0.79	0.42	0.31
Romania	65%	5%	30%	0.47	0.45	0.53
Rwanda	5%	18%	77%	1.01	0.52	0.34
Sudan	12%	37%	51%	0.72	0.39	0.30
Senegal	10%	37%	52%	0.53	0.28	0.24
Singapore	60%	30%	9%	0.42	0.33	0.43
Sierra Leone	7%	5%	88%	0.69	0.50	0.43
El Salvador	24%	39%	37%	0.62	0.39	0.34
Sweden	84%	10%	6%	0.55	0.52	0.53
Chad	6%	11%	83%	0.83	0.50	0.38
Togo	7%	12%	81%	0.85	0.52	0.38
Thailand	22%	25%	53%	0.40	0.27	0.34
Tunisia	62%	14%	24%	0.40	0.36	0.49
Turkey	57%	14%	30%	0.30	0.26	0.47
Tanzania	5%	12%	83%	0.68	0.38	0.30
Uganda	12%	10%	79%	0.54	0.39	0.40
Uruguay	75%	4%	21%	0.39	0.38	0.54
United States	87%	7%	6%	0.53	0.51	0.53
Vietnam	21%	18%	61%	0.54	0.39	0.40
South Africa	17%	75%	8%	0.88	0.44	0.30
Zimbabwe	22%	12%	66%	0.56	0.44	0.44

Note: All initial conditions correspond to averages from 2008-2012, when available. For sources, see Table 1.

Table A2. Initial conditions by country in 2010 using country-specific capital share

Country	Capital/ Labor Force	Capital/ GDP	GDP/ Labor Force	Minimum Wage (W)	TFP of Formal Sector (A)	Growth of A
Albania	36,002	4.4	8,225	6,304	43	3.0%
Argentina	45,046	2.9	15,687	9,485	38	1.5%
Australia	236,448	3.4	68,682	42,282	436	0.0%
Austria	310,881	4.0	78,499	51,509	775	0.2%
Burundi	795	2.5	321	466	33	0.0%
Belgium	317,076	3.7	85,805	55,942	734	0.1%
Benin	4,390	2.9	1,495	2,327	63	0.4%
Bangladesh	3,143	2.4	1,291	1,582	23	0.5%
Bulgaria	23,633	2.3	10,265	5,557	58	0.0%
Bolivia	5,452	2.1	2,582	2,658	42	1.1%
Brazil	27,202	2.6	10,625	7,004	99	0.9%
Botswana	36,101	3.0	12,063	8,942	6	0.0%
Central African Republic	1,974	2.6	758	1,616	2	2.2%
Canada	205,177	3.1	66,079	41,828	464	0.0%
Switzerland	409,142	4.1	100,778	68,346	1242	0.6%
Chile	47,945	2.5	18,846	10,768	47	0.0%
China	15,034	3.0	4,935	3,792	36	3.9%
Côte d'Ivoire	28,719	11.7	2,463	2,945	17	0.8%
Cameroon	7,171	3.0	2,376	2,579	31	0.7%
Congo, Rep.	15,878	3.4	4,632	5,497	36	2.0%
Colombia	22,391	2.7	8,273	6,570	50	1.0%
Costa Rica	29,860	2.5	11,785	8,371	211	0.3%
Germany	276,781	3.8	73,267	49,940	919	0.6%
Denmark	324,384	3.6	90,895	61,421	1149	0.0%
Dominican Republic	21,625	2.1	10,275	7,626	36	0.9%
Ecuador	21,606	3.0	7,171	4,270	4	1.0%
Egypt, Arab Rep.	10,510	2.4	4,388	2,194	11	0.7%
Spain	209,021	4.0	51,875	37,340	733	0.0%
Finland	303,345	3.8	79,424	51,374	624	0.6%
France	284,646	3.7	77,528	51,305	741	0.0%
United Kingdom	229,524	2.9	77,954	51,513	856	0.3%
Ghana	5,101	3.4	1,500	1,850	20	2.4%
Guinea	1,673	2.3	742	1,052	18	0.0%
Greece	189,593	4.0	47,215	27,786	144	0.0%

Country	Capital/ Labor Force	Capital/ GDP	GDP/ Labor Force	Minimum Wage (W)	TFP of Formal Sector (A)	Growth of A
Guatemala	13,774	2.5	5,441	4,658	29	0.0%
Hong Kong SAR, China	175,208	2.9	59,610	33,375	162	1.9%
Honduras	13,589	3.5	3,914	3,769	76	1.1%
Hungary	101,373	3.9	26,178	17,022	340	0.5%
Indonesia	9,807	3.0	3,257	3,344	22	2.6%
India	7,497	2.9	2,592	3,256	47	2.2%
Ireland	332,438	3.3	101,594	53,631	149	0.0%
Iran, Islamic Rep.	53,915	5.0	10,837	5,947	6	1.0%
Iraq	15,229	1.7	9,055	3,162	4	0.0%
Israel	151,898	2.8	54,797	33,412	372	0.3%
Italy	273,049	3.7	73,880	44,497	300	0.0%
Jamaica	45,877	5.2	8,865	7,695	68	0.1%
Jordan	34,573	3.3	10,540	6,314	44	2.1%
Japan	299,196	4.3	69,894	39,640	223	0.4%
Kenya	3,946	2.5	1,548	1,511	91	0.7%
Cambodia	1,814	1.6	1,125	1,838	26	0.5%
Korea, Rep.	144,394	3.3	43,568	26,769	212	0.8%
Lao PDR	2,697	2.0	1,322	2,508	25	0.8%
Lebanon	56,686	2.9	19,498	18,179	33	1.2%
Sri Lanka	11,696	2.9	3,986	3,458	158	3.4%
Lesotho	8,844	4.2	2,122	1,821	94	3.0%
Morocco	22,697	3.5	6,518	5,337	52	1.3%
Madagascar	1,827	3.3	558	884	13	0.0%
Mexico	61,873	3.2	19,125	13,469	24	0.0%
Mali	3,407	2.6	1,327	1,793	22	0.0%
Mongolia	14,648	4.8	3,071	1,826	8	3.7%
Mozambique	1,141	1.1	998	1,099	16	0.0%
Mauritania	7,734	3.1	2,502	2,175	47	0.0%
Malaysia	42,992	2.9	14,884	9,654	99	1.7%
Namibia	39,181	3.6	10,966	9,234	168	1.0%
Niger	2,611	3.1	833	1,482	27	0.7%
Nigeria	4,110	1.3	3,155	3,926	20	5.2%
Netherlands	286,352	3.5	81,319	52,959	713	0.0%
Norway	456,283	3.7	124,576	70,825	350	0.0%
Nepal	2,252	3.2	711	1,002	15	0.0%
Pakistan	6,008	2.7	2,233	2,670	29	0.7%
Panama	30,157	2.2	13,822	7,346	35	2.4%

Country	Capital/ Labor Force	Capital/ GDP	GDP/ Labor Force	Minimum Wage (W)	TFP of Formal Sector (A)	Growth of A
Peru	16,535	2.5	6,683	5,201	12	1.5%
Philippines	9,044	2.8	3,288	2,484	16	2.0%
Poland	55,609	2.6	21,378	13,943	269	1.6%
Portugal	137,004	3.8	36,096	25,134	646	0.0%
Paraguay	9,920	2.7	3,688	3,509	53	0.0%
Romania	42,793	3.5	12,347	8,336	129	2.8%
Rwanda	1,307	1.7	763	1,017	65	3.1%
Sudan	6,953	2.1	3,251	3,376	39	0.0%
Senegal	5,251	2.8	1,848	2,009	10	0.1%
Singapore	173,308	2.8	61,251	33,009	74	1.7%
Sierra Leone	1,566	1.6	994	1,478	65	1.8%
El Salvador	17,153	2.4	7,180	5,961	55	0.0%
Sweden	314,810	3.7	84,211	57,307	1043	0.7%
Chad	4,849	2.6	1,854	2,661	81	3.9%
Togo	2,315	2.7	847	1,148	60	0.0%
Thailand	21,192	3.7	5,761	4,861	13	2.2%
Tunisia	34,349	3.3	10,388	6,023	41	1.0%
Turkey	50,556	2.2	22,490	11,556	26	0.7%
Tanzania	2,909	2.8	1,025	1,767	17	2.1%
Uganda	2,216	2.2	1,024	1,310	21	1.9%
Uruguay	41,111	3.1	13,445	7,537	61	1.7%
United States	279,700	3.2	86,586	57,548	961	0.3%
Vietnam	4,606	3.0	1,543	1,471	22	0.0%
South Africa	41,674	2.5	16,476	13,305	149	1.0%
Zimbabwe	793	1.1	751	742	38	0.0%

Note: All initial conditions correspond to averages from 2008-2012, when available.
Sources:

- World Development Indicators (WDI), 1960-2012
- Penn World Tables (1950-2011)
- International Labor Organization (1990-2012)

Table A3. Projections for all countries from 2010 to 2030 using country-specific capital share under baseline scenario

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	57%	76%	10%	21%	19%	52%	22%	5%
Argentina	46%	55%	61%	36%	40%	34%	18%	5%	5%
Australia	87%	78%	70%	5%	17%	25%	8%	5%	5%
Austria	87%	82%	70%	5%	13%	25%	8%	5%	5%
Burundi	7%	3%	1%	7%	7%	6%	86%	90%	93%
Belgium	86%	79%	69%	5%	16%	26%	9%	5%	5%
Benin	6%	5%	4%	7%	7%	6%	87%	88%	90%
Bangladesh	5%	5%	10%	38%	63%	85%	57%	31%	5%
Bulgaria	75%	84%	88%	18%	11%	7%	8%	5%	5%
Bolivia	13%	14%	18%	33%	37%	49%	54%	49%	33%
Brazil	58%	71%	65%	20%	24%	30%	23%	5%	5%
Botswana	17%	26%	38%	73%	69%	57%	10%	5%	5%
Central African Republic	5%	4%	5%	8%	7%	10%	87%	89%	85%
Canada	82%	82%	74%	5%	13%	21%	13%	5%	5%
Switzerland	86%	76%	55%	5%	11%	25%	9%	13%	19%
Chile	56%	74%	82%	21%	21%	13%	23%	5%	5%
China	34%	62%	65%	19%	33%	30%	48%	5%	5%
Côte d'Ivoire	14%	9%	3%	10%	5%	5%	76%	86%	92%
Cameroon	17%	17%	17%	12%	12%	12%	71%	71%	70%
Congo, Rep.	12%	12%	13%	17%	17%	19%	71%	70%	68%
Colombia	30%	37%	51%	28%	37%	44%	43%	26%	5%
Costa Rica	57%	56%	42%	24%	39%	53%	19%	5%	5%
Germany	83%	70%	61%	11%	23%	34%	6%	7%	5%
Denmark	88%	55%	33%	7%	31%	37%	5%	15%	31%
Dominican Republic	30%	40%	53%	34%	49%	42%	37%	11%	5%
Ecuador	27%	34%	52%	31%	40%	43%	42%	27%	5%
Egypt, Arab Rep.	54%	68%	82%	26%	27%	13%	21%	5%	5%
Spain	65%	43%	28%	26%	52%	67%	9%	5%	5%
Finland	85%	74%	64%	6%	21%	31%	9%	5%	5%
France	82%	70%	64%	11%	25%	31%	6%	5%	5%
United Kingdom	85%	81%	73%	5%	13%	22%	10%	5%	5%
Ghana	10%	11%	16%	16%	20%	30%	74%	69%	54%
Guinea	7%	10%	16%	5%	5%	5%	88%	85%	79%
Greece	71%	90%	90%	5%	5%	5%	24%	5%	5%
Guatemala	21%	22%	24%	38%	40%	43%	41%	38%	33%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Hong Kong SAR, China	76%	78%	75%	17%	17%	20%	7%	5%	5%
Honduras	18%	18%	23%	32%	38%	50%	50%	44%	27%
Hungary	86%	71%	58%	8%	24%	37%	6%	5%	5%
Indonesia	14%	17%	31%	31%	42%	64%	55%	41%	5%
India	12%	11%	16%	11%	16%	24%	78%	73%	60%
Ireland	83%	90%	90%	7%	5%	5%	10%	5%	5%
Iran, Islamic Rep.	41%	51%	72%	23%	29%	23%	36%	21%	5%
Iraq	43%	52%	63%	35%	42%	32%	21%	6%	5%
Israel	85%	83%	79%	8%	12%	16%	7%	5%	5%
Italy	78%	90%	89%	5%	5%	6%	17%	5%	5%
Jamaica	21%	20%	21%	47%	45%	49%	32%	35%	30%
Jordan	52%	55%	59%	41%	40%	36%	7%	5%	5%
Japan	85%	90%	90%	5%	5%	5%	10%	5%	5%
Kenya	19%	12%	8%	28%	33%	36%	53%	55%	56%
Cambodia	1%	0%	1%	28%	53%	94%	71%	47%	5%
Korea, Rep.	71%	87%	75%	5%	8%	20%	24%	5%	5%
Lao PDR	2%	2%	2%	15%	20%	29%	83%	78%	69%
Lebanon	11%	11%	21%	57%	59%	74%	32%	29%	5%
Sri Lanka	25%	5%	0%	36%	59%	81%	39%	36%	19%
Lesotho	17%	6%	0%	70%	75%	89%	13%	19%	11%
Morocco	30%	40%	51%	23%	37%	44%	46%	23%	5%
Madagascar	7%	7%	8%	9%	10%	11%	84%	83%	81%
Mexico	28%	32%	39%	44%	51%	56%	28%	16%	5%
Mali	11%	14%	16%	7%	9%	10%	82%	78%	74%
Mongolia	43%	62%	90%	5%	5%	5%	52%	33%	5%
Mozambique	13%	32%	54%	20%	63%	41%	67%	5%	5%
Mauritania	24%	25%	37%	30%	45%	58%	45%	29%	5%
Malaysia	56%	65%	62%	23%	30%	33%	21%	5%	5%
Namibia	20%	19%	11%	60%	76%	84%	20%	5%	5%
Niger	4%	4%	3%	7%	6%	5%	89%	91%	92%
Nigeria	12%	17%	82%	12%	20%	13%	76%	62%	5%
Netherlands	85%	83%	74%	5%	12%	21%	10%	5%	5%
Norway	90%	87%	85%	5%	8%	10%	5%	5%	5%
Nepal	4%	4%	5%	27%	33%	43%	69%	63%	52%
Pakistan	8%	8%	10%	33%	36%	43%	60%	55%	47%
Panama	62%	89%	90%	10%	6%	5%	28%	5%	5%
Peru	22%	31%	53%	32%	47%	42%	46%	22%	5%
Philippines	27%	33%	50%	34%	42%	45%	39%	25%	5%
Poland	77%	71%	53%	6%	24%	42%	17%	5%	5%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Portugal	79%	53%	22%	5%	28%	39%	16%	19%	39%
Paraguay	14%	15%	17%	44%	47%	53%	41%	39%	31%
Romania	65%	78%	56%	5%	17%	39%	30%	5%	5%
Rwanda	5%	0%	0%	18%	19%	20%	77%	81%	80%
Sudan	12%	17%	22%	37%	72%	73%	51%	11%	5%
Senegal	10%	11%	12%	37%	40%	43%	52%	49%	45%
Singapore	60%	71%	83%	30%	24%	12%	9%	5%	5%
Sierra Leone	7%	6%	6%	5%	7%	9%	88%	87%	85%
El Salvador	24%	27%	33%	39%	46%	57%	37%	27%	9%
Sweden	84%	69%	55%	10%	24%	36%	6%	7%	10%
Chad	6%	3%	2%	11%	10%	10%	83%	87%	88%
Togo	7%	10%	14%	12%	10%	8%	81%	80%	78%
Thailand	22%	30%	53%	25%	36%	42%	53%	34%	5%
Tunisia	62%	79%	84%	14%	16%	11%	24%	5%	5%
Turkey	57%	76%	90%	14%	19%	5%	30%	5%	5%
Tanzania	5%	5%	6%	12%	16%	20%	83%	79%	73%
Uganda	12%	14%	23%	10%	14%	25%	79%	71%	52%
Uruguay	74%	85%	90%	5%	7%	5%	21%	8%	5%
United States	87%	69%	61%	7%	26%	34%	6%	5%	5%
Vietnam	21%	30%	49%	18%	35%	46%	61%	35%	5%
South Africa	17%	15%	12%	75%	80%	83%	8%	5%	5%
Zimbabwe	22%	32%	53%	12%	26%	42%	66%	43%	5%

Table A4. Projections for all countries from 2010 to 2030 using country-specific capital share under populist scenario

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	54%	74%	10%	22%	21%	52%	24%	5%
Argentina	46%	51%	59%	36%	44%	36%	18%	5%	5%
Australia	87%	75%	68%	5%	20%	27%	8%	5%	5%
Austria	87%	70%	70%	5%	19%	25%	8%	10%	5%
Burundi	7%	2%	0%	7%	7%	6%	86%	91%	94%
Belgium	86%	72%	68%	5%	20%	27%	9%	8%	5%
Benin	6%	4%	3%	7%	7%	6%	87%	89%	91%
Bangladesh	5%	5%	9%	38%	63%	86%	57%	33%	5%
Bulgaria	75%	82%	85%	18%	13%	10%	8%	5%	5%
Bolivia	13%	13%	16%	33%	37%	48%	54%	50%	36%
Brazil	58%	64%	63%	20%	30%	32%	23%	6%	5%
Botswana	17%	25%	37%	73%	70%	58%	10%	5%	5%
Central African Republic	5%	4%	5%	8%	7%	10%	87%	89%	85%
Canada	82%	80%	72%	5%	15%	23%	13%	5%	5%
Switzerland	86%	46%	17%	5%	22%	29%	9%	31%	54%
Chile	56%	72%	80%	21%	23%	15%	23%	5%	5%
China	34%	60%	63%	19%	35%	32%	48%	5%	5%
Côte d'Ivoire	14%	9%	3%	10%	5%	5%	76%	86%	92%
Cameroon	17%	16%	16%	12%	12%	13%	71%	72%	71%
Congo, Rep.	12%	11%	12%	17%	18%	19%	71%	71%	69%
Colombia	30%	35%	50%	28%	37%	45%	43%	28%	5%
Costa Rica	57%	56%	41%	24%	39%	54%	19%	5%	5%
Germany	83%	49%	34%	11%	29%	36%	6%	22%	30%
Denmark	88%	36%	15%	7%	35%	34%	5%	29%	51%
Dominican Republic	30%	38%	51%	34%	49%	44%	37%	13%	5%
Ecuador	27%	33%	50%	31%	40%	45%	42%	27%	5%
Egypt, Arab Rep.	54%	66%	80%	26%	29%	15%	21%	5%	5%
Spain	65%	41%	26%	26%	54%	69%	9%	5%	5%
Finland	85%	72%	63%	6%	23%	32%	9%	5%	5%
France	82%	66%	63%	11%	28%	32%	6%	6%	5%
United Kingdom	85%	64%	61%	5%	19%	23%	10%	17%	16%
Ghana	10%	11%	15%	16%	20%	30%	74%	69%	55%
Guinea	7%	9%	15%	5%	5%	5%	88%	86%	80%
Greece	71%	90%	90%	5%	5%	5%	24%	5%	5%
Guatemala	21%	21%	22%	38%	40%	43%	41%	39%	35%
Hong Kong SAR, China	76%	75%	73%	17%	20%	22%	7%	5%	5%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Honduras	18%	16%	20%	32%	38%	49%	50%	46%	31%
Hungary	86%	67%	57%	8%	28%	38%	6%	5%	5%
Indonesia	14%	16%	29%	31%	42%	66%	55%	42%	5%
India	12%	10%	14%	11%	16%	24%	78%	74%	62%
Ireland	83%	89%	90%	7%	6%	5%	10%	5%	5%
Iran, Islamic Rep.	41%	49%	70%	23%	29%	25%	36%	21%	5%
Iraq	43%	51%	61%	35%	43%	34%	21%	7%	5%
Israel	85%	80%	76%	8%	15%	19%	7%	5%	5%
Italy	78%	90%	87%	5%	5%	8%	17%	5%	5%
Jamaica	21%	18%	19%	47%	45%	48%	32%	37%	32%
Jordan	52%	54%	57%	41%	41%	38%	7%	5%	5%
Japan	85%	90%	87%	5%	5%	8%	10%	5%	5%
Kenya	19%	7%	3%	28%	32%	32%	53%	61%	65%
Cambodia	1%	0%	0%	28%	53%	95%	71%	47%	5%
Korea, Rep.	71%	84%	72%	5%	11%	23%	24%	5%	5%
Lao PDR	2%	1%	2%	15%	20%	28%	83%	78%	70%
Lebanon	11%	11%	20%	57%	59%	75%	32%	30%	5%
Sri Lanka	25%	1%	0%	36%	57%	71%	39%	43%	29%
Lesotho	17%	1%	0%	70%	73%	78%	13%	26%	22%
Morocco	30%	37%	50%	23%	38%	45%	46%	25%	5%
Madagascar	7%	7%	7%	9%	10%	11%	84%	83%	82%
Mexico	28%	31%	38%	44%	51%	57%	28%	18%	5%
Mali	11%	13%	15%	7%	9%	10%	82%	78%	75%
Mongolia	43%	61%	90%	5%	6%	5%	52%	33%	5%
Mozambique	13%	31%	52%	20%	64%	43%	67%	5%	5%
Mauritania	24%	23%	31%	30%	45%	62%	45%	31%	7%
Malaysia	56%	60%	60%	23%	34%	35%	21%	7%	5%
Namibia	20%	15%	10%	60%	77%	85%	20%	8%	5%
Niger	4%	3%	3%	7%	6%	5%	89%	91%	92%
Nigeria	12%	16%	79%	12%	20%	16%	76%	63%	5%
Netherlands	85%	75%	73%	5%	17%	22%	10%	8%	5%
Norway	90%	84%	82%	5%	11%	13%	5%	5%	5%
Nepal	4%	3%	4%	27%	33%	43%	69%	63%	53%
Pakistan	8%	8%	9%	33%	36%	43%	60%	56%	48%
Panama	62%	86%	90%	10%	9%	5%	28%	5%	5%
Peru	22%	30%	51%	32%	47%	44%	46%	23%	5%
Philippines	27%	31%	48%	34%	42%	47%	39%	26%	5%
Poland	77%	70%	51%	6%	25%	44%	17%	5%	5%
Portugal	79%	32%	6%	5%	33%	35%	16%	35%	59%
Paraguay	14%	14%	15%	44%	46%	51%	41%	40%	34%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Romania	65%	74%	54%	5%	21%	41%	30%	5%	5%
Rwanda	5%	0%	0%	18%	18%	19%	77%	82%	81%
Sudan	12%	15%	20%	37%	72%	75%	51%	13%	5%
Senegal	10%	10%	11%	37%	40%	43%	52%	50%	46%
Singapore	60%	69%	81%	30%	26%	14%	9%	5%	5%
Sierra Leone	7%	5%	5%	5%	7%	8%	88%	88%	87%
El Salvador	24%	25%	31%	39%	46%	56%	37%	29%	13%
Sweden	84%	47%	27%	10%	31%	36%	6%	22%	37%
Chad	6%	2%	1%	11%	10%	10%	83%	88%	89%
Togo	7%	6%	5%	12%	11%	10%	81%	83%	85%
Thailand	22%	29%	52%	25%	36%	43%	53%	35%	5%
Tunisia	62%	75%	82%	14%	20%	13%	24%	5%	5%
Turkey	57%	73%	90%	14%	22%	5%	30%	5%	5%
Tanzania	5%	5%	6%	12%	16%	20%	83%	80%	74%
Uganda	12%	14%	21%	10%	15%	25%	79%	72%	54%
Uruguay	74%	80%	90%	5%	9%	5%	21%	11%	5%
United States	87%	55%	47%	7%	30%	35%	6%	15%	18%
Vietnam	21%	28%	48%	18%	35%	47%	61%	37%	5%
South Africa	17%	14%	11%	75%	81%	84%	8%	5%	5%
Zimbabwe	22%	29%	46%	12%	26%	42%	66%	45%	12%

Table A5. Projections for developing countries from 2010 to 2030 using country-specific capital share under reformist scenario

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	60%	79%	10%	20%	16%	52%	20%	5%
Argentina	46%	56%	64%	36%	39%	31%	18%	5%	5%
Burundi	7%	6%	5%	7%	7%	6%	86%	88%	89%
Benin	6%	6%	6%	7%	6%	6%	87%	88%	89%
Bangladesh	5%	6%	11%	38%	64%	84%	57%	30%	5%
Bulgaria	75%	86%	90%	18%	9%	5%	8%	5%	5%
Bolivia	13%	15%	19%	33%	38%	50%	54%	47%	30%
Brazil	58%	73%	67%	20%	22%	28%	23%	5%	5%
Botswana	17%	27%	39%	73%	68%	56%	10%	5%	5%
Central African Republic	5%	4%	6%	8%	7%	10%	87%	89%	85%
Chile	56%	76%	85%	21%	19%	10%	23%	5%	5%
China	34%	64%	67%	19%	31%	28%	48%	5%	5%
Côte d'Ivoire	14%	9%	4%	10%	5%	5%	76%	86%	91%
Cameroon	17%	18%	19%	12%	12%	12%	71%	70%	69%
Congo, Rep.	12%	13%	14%	17%	17%	20%	71%	70%	67%
Colombia	30%	39%	53%	28%	37%	42%	43%	24%	5%
Costa Rica	57%	58%	43%	24%	37%	52%	19%	5%	5%
Dominican Republic	30%	42%	55%	34%	49%	40%	37%	9%	5%
Ecuador	27%	35%	53%	31%	39%	42%	42%	26%	5%
Egypt, Arab Rep.	54%	70%	84%	26%	25%	11%	21%	5%	5%
Ghana	10%	12%	17%	16%	20%	30%	74%	68%	52%
Guinea	7%	10%	16%	5%	5%	5%	88%	85%	79%
Guatemala	21%	23%	25%	38%	40%	44%	41%	36%	31%
Hong Kong SAR, China	76%	80%	78%	17%	15%	17%	7%	5%	5%
Honduras	18%	21%	27%	32%	38%	51%	50%	42%	22%
Hungary	86%	74%	60%	8%	21%	35%	6%	5%	5%
Indonesia	14%	18%	32%	31%	43%	63%	55%	40%	5%
India	12%	12%	17%	11%	16%	24%	78%	72%	58%
Iran, Islamic Rep.	41%	52%	74%	23%	28%	21%	36%	20%	5%
Iraq	43%	53%	64%	35%	42%	31%	21%	5%	5%
Israel	85%	85%	81%	8%	10%	14%	7%	5%	5%
Jamaica	21%	21%	24%	47%	45%	49%	32%	34%	27%
Jordan	52%	57%	61%	41%	38%	34%	7%	5%	5%
Kenya	19%	19%	19%	28%	33%	40%	53%	48%	42%
Cambodia	1%	0%	2%	28%	54%	93%	71%	46%	5%
Korea, Rep.	71%	89%	77%	5%	6%	18%	24%	5%	5%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Lao PDR	2%	2%	3%	15%	20%	29%	83%	78%	68%
Lebanon	11%	12%	22%	57%	60%	73%	32%	28%	5%
Sri Lanka	25%	11%	1%	36%	62%	94%	39%	27%	5%
Lesotho	17%	13%	2%	70%	78%	93%	13%	9%	5%
Morocco	30%	42%	53%	23%	37%	42%	46%	21%	5%
Madagascar	7%	8%	8%	9%	10%	11%	84%	82%	81%
Mexico	28%	34%	41%	44%	51%	54%	28%	15%	5%
Mali	11%	14%	17%	7%	8%	10%	82%	77%	73%
Mongolia	43%	63%	90%	5%	5%	5%	52%	32%	5%
Mozambique	13%	34%	56%	20%	61%	39%	67%	5%	5%
Mauritania	24%	28%	38%	30%	45%	57%	45%	27%	5%
Malaysia	56%	69%	64%	23%	26%	31%	21%	5%	5%
Namibia	20%	21%	12%	60%	74%	83%	20%	5%	5%
Niger	4%	4%	3%	7%	5%	5%	89%	90%	92%
Nigeria	12%	18%	86%	12%	21%	9%	76%	61%	5%
Nepal	4%	4%	6%	27%	33%	44%	69%	62%	51%
Pakistan	8%	9%	11%	33%	36%	44%	60%	55%	45%
Panama	62%	90%	90%	10%	5%	5%	28%	5%	5%
Peru	22%	32%	55%	32%	47%	40%	46%	21%	5%
Philippines	27%	34%	52%	34%	42%	43%	39%	24%	5%
Poland	77%	73%	55%	6%	22%	40%	17%	5%	5%
Paraguay	14%	16%	19%	44%	47%	54%	41%	37%	27%
Romania	65%	80%	58%	5%	15%	37%	30%	5%	5%
Rwanda	5%	1%	0%	18%	20%	23%	77%	79%	77%
Sudan	12%	18%	23%	37%	73%	72%	51%	9%	5%
Senegal	10%	11%	12%	37%	40%	44%	52%	49%	44%
Singapore	60%	73%	86%	30%	22%	9%	9%	5%	5%
Sierra Leone	7%	8%	9%	5%	6%	9%	88%	86%	83%
El Salvador	24%	29%	36%	39%	46%	58%	37%	25%	5%
Chad	6%	4%	3%	11%	10%	11%	83%	86%	86%
Togo	7%	16%	33%	12%	8%	5%	81%	76%	62%
Thailand	22%	31%	55%	25%	35%	40%	53%	33%	5%
Tunisia	62%	82%	87%	14%	13%	8%	24%	5%	5%
Turkey	57%	79%	90%	14%	16%	5%	30%	5%	5%
Tanzania	5%	6%	7%	12%	16%	20%	83%	79%	73%
Uganda	12%	15%	25%	10%	14%	25%	79%	71%	50%
Uruguay	74%	89%	90%	5%	5%	5%	21%	6%	5%
Vietnam	21%	32%	51%	18%	35%	44%	61%	34%	5%
South Africa	17%	16%	13%	75%	79%	82%	8%	5%	5%
Zimbabwe	22%	35%	59%	12%	26%	36%	66%	40%	5%

Table A6. Projections for all countries from 2010 to 2030 using country-specific capital share under baseline scenario and persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	46%	64%	10%	15%	25%	52%	40%	12%
Argentina	46%	46%	52%	36%	32%	34%	18%	22%	14%
Australia	87%	56%	22%	5%	18%	22%	8%	26%	56%
Austria	87%	26%	0%	5%	23%	16%	8%	51%	84%
Burundi	7%	0%	0%	7%	5%	5%	86%	95%	95%
Belgium	86%	32%	1%	5%	22%	19%	9%	46%	80%
Benin	6%	1%	0%	7%	5%	5%	87%	93%	95%
Bangladesh	5%	3%	0%	38%	50%	67%	57%	47%	32%
Bulgaria	75%	83%	87%	18%	12%	8%	8%	5%	5%
Bolivia	13%	10%	6%	33%	29%	25%	54%	62%	68%
Brazil	58%	49%	36%	20%	21%	22%	23%	30%	42%
Botswana	17%	24%	35%	73%	71%	60%	10%	5%	5%
Central African Republic	5%	4%	5%	8%	6%	6%	87%	90%	89%
Canada	82%	51%	18%	5%	16%	18%	13%	33%	64%
Switzerland	86%	7%	0%	5%	23%	9%	9%	71%	91%
Chile	56%	70%	81%	21%	23%	14%	23%	8%	5%
China	34%	59%	62%	19%	36%	33%	48%	5%	5%
Côte d'Ivoire	14%	6%	0%	10%	5%	5%	76%	89%	95%
Cameroon	17%	13%	9%	12%	9%	7%	71%	78%	84%
Congo, Rep.	12%	9%	7%	17%	14%	11%	71%	77%	82%
Colombia	30%	29%	29%	28%	28%	30%	43%	43%	41%
Costa Rica	57%	27%	4%	24%	35%	30%	19%	39%	65%
Germany	83%	11%	0%	11%	27%	12%	6%	63%	88%
Denmark	88%	5%	0%	7%	28%	11%	5%	67%	89%
Dominican Republic	30%	34%	44%	34%	37%	45%	37%	29%	12%
Ecuador	27%	32%	46%	31%	31%	37%	42%	36%	16%
Egypt, Arab Rep.	54%	63%	79%	26%	23%	16%	21%	14%	5%
Spain	65%	6%	0%	26%	42%	24%	9%	52%	76%
Finland	85%	36%	4%	6%	24%	21%	9%	40%	75%
France	82%	26%	0%	11%	27%	18%	6%	47%	82%
United Kingdom	85%	24%	0%	5%	21%	13%	10%	55%	87%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Ghana	10%	9%	8%	16%	16%	18%	74%	76%	74%
Guinea	7%	6%	6%	5%	5%	5%	88%	89%	89%
Greece	71%	70%	57%	5%	5%	5%	24%	25%	38%
Guatemala	21%	18%	15%	38%	31%	25%	41%	50%	61%
Hong Kong SAR, China	76%	77%	73%	17%	18%	22%	7%	5%	5%
Honduras	18%	8%	1%	32%	29%	26%	50%	63%	73%
Hungary	86%	30%	1%	8%	26%	22%	6%	44%	77%
Indonesia	14%	14%	16%	31%	34%	45%	55%	53%	39%
India	12%	7%	4%	11%	13%	14%	78%	80%	82%
Ireland	83%	90%	90%	7%	5%	5%	10%	5%	5%
Iran, Islamic Rep.	41%	48%	65%	23%	20%	19%	36%	32%	16%
Iraq	43%	50%	60%	35%	32%	29%	21%	18%	12%
Israel	85%	60%	26%	8%	12%	14%	7%	27%	60%
Italy	78%	65%	42%	5%	5%	8%	17%	30%	51%
Jamaica	21%	12%	6%	47%	35%	28%	32%	52%	66%
Jordan	52%	53%	55%	41%	42%	40%	7%	5%	5%
Japan	85%	71%	51%	5%	5%	6%	10%	24%	43%
Kenya	19%	0%	0%	28%	21%	11%	53%	79%	89%
Cambodia	1%	0%	0%	28%	42%	58%	71%	58%	42%
Korea, Rep.	71%	77%	73%	5%	11%	22%	24%	12%	5%
Lao PDR	2%	1%	0%	15%	16%	18%	83%	83%	82%
Lebanon	11%	9%	12%	57%	48%	70%	32%	42%	18%
Sri Lanka	25%	0%	0%	36%	35%	25%	39%	65%	75%
Lesotho	17%	0%	0%	70%	44%	26%	13%	56%	74%
Morocco	30%	30%	30%	23%	29%	35%	46%	42%	35%
Madagascar	7%	6%	4%	9%	8%	7%	84%	86%	89%
Mexico	28%	29%	29%	44%	40%	37%	28%	31%	34%
Mali	11%	11%	9%	7%	6%	5%	82%	83%	86%
Mongolia	43%	51%	90%	5%	5%	5%	52%	44%	5%
Mozambique	13%	29%	49%	20%	66%	46%	67%	5%	5%
Mauritania	24%	15%	9%	30%	35%	34%	45%	49%	57%
Malaysia	56%	47%	42%	23%	24%	29%	21%	29%	29%
Namibia	20%	3%	0%	60%	58%	44%	20%	39%	56%
Niger	4%	2%	0%	7%	5%	5%	89%	93%	95%
Nigeria	12%	15%	75%	12%	15%	20%	76%	70%	5%
Netherlands	85%	34%	2%	5%	20%	17%	10%	46%	81%
Norway	90%	70%	44%	5%	7%	9%	5%	23%	47%
Nepal	4%	2%	1%	27%	27%	27%	69%	71%	72%
Pakistan	8%	6%	4%	33%	29%	25%	60%	65%	71%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Panama	62%	82%	90%	10%	10%	5%	28%	9%	5%
Peru	22%	29%	47%	32%	37%	48%	46%	34%	5%
Philippines	27%	29%	37%	34%	33%	41%	39%	39%	22%
Poland	77%	44%	15%	6%	24%	29%	17%	32%	56%
Portugal	79%	2%	0%	5%	26%	12%	16%	71%	88%
Paraguay	14%	9%	4%	44%	36%	28%	41%	55%	68%
Romania	65%	49%	35%	5%	21%	36%	30%	30%	29%
Rwanda	5%	0%	0%	18%	12%	7%	77%	88%	93%
Sudan	12%	12%	12%	37%	57%	78%	51%	32%	11%
Senegal	10%	9%	8%	37%	33%	28%	52%	58%	64%
Singapore	60%	70%	82%	30%	25%	13%	9%	5%	5%
Sierra Leone	7%	1%	0%	5%	6%	5%	88%	93%	95%
El Salvador	24%	21%	16%	39%	35%	30%	37%	44%	54%
Sweden	84%	9%	0%	10%	27%	12%	6%	64%	88%
Chad	6%	0%	0%	11%	7%	5%	83%	93%	95%
Togo	7%	0%	0%	12%	8%	5%	81%	92%	95%
Thailand	22%	27%	42%	25%	27%	39%	53%	45%	18%
Tunisia	62%	66%	74%	14%	12%	11%	24%	22%	15%
Turkey	57%	68%	90%	14%	11%	5%	30%	20%	5%
Tanzania	5%	4%	3%	12%	12%	12%	83%	84%	85%
Uganda	12%	11%	12%	10%	11%	13%	79%	78%	75%
Uruguay	74%	65%	63%	5%	5%	5%	21%	30%	32%
United States	87%	17%	0%	7%	28%	14%	6%	56%	86%
Vietnam	21%	23%	29%	18%	27%	37%	61%	50%	34%
South Africa	17%	8%	0%	75%	68%	60%	8%	24%	40%
Zimbabwe	22%	21%	15%	12%	19%	18%	66%	61%	67%

Table A7. Projections for all countries from 2010 to 2030 using country-specific capital share under populist scenario and persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	43%	59%	10%	16%	26%	52%	41%	15%
Argentina	46%	44%	48%	36%	33%	34%	18%	23%	18%
Australia	87%	49%	19%	5%	20%	22%	8%	31%	60%
Austria	87%	19%	0%	5%	24%	15%	8%	56%	85%
Burundi	7%	0%	0%	7%	5%	5%	86%	95%	95%
Belgium	86%	25%	0%	5%	24%	18%	9%	51%	82%
Benin	6%	1%	0%	7%	5%	5%	87%	94%	95%
Bangladesh	5%	2%	0%	38%	50%	66%	57%	48%	34%
Bulgaria	75%	81%	84%	18%	14%	11%	8%	5%	5%
Bolivia	13%	9%	5%	33%	29%	25%	54%	63%	70%
Brazil	58%	45%	32%	20%	22%	22%	23%	33%	46%
Botswana	17%	24%	33%	73%	71%	62%	10%	5%	5%
Central African Republic	5%	4%	5%	8%	6%	6%	87%	90%	89%
Canada	82%	45%	15%	5%	18%	18%	13%	38%	67%
Switzerland	86%	2%	0%	5%	22%	9%	9%	76%	91%
Chile	56%	67%	78%	21%	24%	17%	23%	10%	5%
China	34%	54%	60%	19%	41%	35%	48%	5%	5%
Côte d'Ivoire	14%	6%	0%	10%	5%	5%	76%	89%	95%
Cameroon	17%	12%	8%	12%	9%	7%	71%	78%	85%
Congo, Rep.	12%	9%	6%	17%	14%	11%	71%	77%	83%
Colombia	30%	28%	27%	28%	28%	30%	43%	45%	43%
Costa Rica	57%	22%	3%	24%	35%	29%	19%	43%	68%
Germany	83%	6%	0%	11%	27%	12%	6%	68%	88%
Denmark	88%	1%	0%	7%	27%	11%	5%	72%	89%
Dominican Republic	30%	33%	41%	34%	37%	44%	37%	30%	15%
Ecuador	27%	32%	45%	31%	31%	37%	42%	37%	17%
Egypt, Arab Rep.	54%	61%	77%	26%	24%	18%	21%	15%	5%
Spain	65%	1%	0%	26%	41%	23%	9%	57%	77%
Finland	85%	30%	3%	6%	25%	20%	9%	45%	77%
France	82%	20%	0%	11%	28%	17%	6%	52%	83%
United Kingdom	85%	18%	0%	5%	22%	12%	10%	60%	88%
Ghana	10%	8%	7%	16%	16%	18%	74%	76%	75%
Guinea	7%	6%	6%	5%	5%	5%	88%	89%	89%
Greece	71%	68%	55%	5%	5%	5%	24%	27%	40%
Guatemala	21%	18%	14%	38%	31%	24%	41%	51%	62%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Hong Kong SAR, China	76%	74%	71%	17%	21%	24%	7%	5%	5%
Honduras	18%	7%	1%	32%	29%	25%	50%	64%	75%
Hungary	86%	24%	0%	8%	28%	21%	6%	49%	79%
Indonesia	14%	13%	15%	31%	34%	44%	55%	53%	41%
India	12%	6%	4%	11%	13%	14%	78%	81%	83%
Ireland	83%	89%	89%	7%	6%	6%	10%	5%	5%
Iran, Islamic Rep.	41%	46%	63%	23%	21%	20%	36%	33%	17%
Iraq	43%	49%	58%	35%	32%	29%	21%	19%	14%
Israel	85%	54%	22%	8%	14%	14%	7%	32%	64%
Italy	78%	61%	37%	5%	6%	9%	17%	33%	54%
Jamaica	21%	11%	5%	47%	35%	28%	32%	53%	67%
Jordan	52%	50%	53%	41%	43%	42%	7%	7%	5%
Japan	85%	69%	46%	5%	5%	7%	10%	26%	47%
Kenya	19%	0%	0%	28%	20%	10%	53%	80%	90%
Cambodia	1%	0%	0%	28%	42%	57%	71%	58%	43%
Korea, Rep.	71%	71%	69%	5%	14%	25%	24%	16%	7%
Lao PDR	2%	1%	0%	15%	16%	17%	83%	83%	83%
Lebanon	11%	9%	11%	57%	48%	69%	32%	43%	20%
Sri Lanka	25%	0%	0%	36%	33%	25%	39%	67%	75%
Lesotho	17%	0%	0%	70%	42%	25%	13%	58%	75%
Morocco	30%	28%	27%	23%	29%	35%	46%	43%	38%
Madagascar	7%	5%	4%	9%	8%	7%	84%	87%	89%
Mexico	28%	28%	28%	44%	41%	37%	28%	32%	35%
Mali	11%	10%	8%	7%	7%	6%	82%	83%	86%
Mongolia	43%	50%	90%	5%	5%	5%	52%	45%	5%
Mozambique	13%	28%	47%	20%	67%	48%	67%	5%	5%
Mauritania	24%	14%	7%	30%	35%	34%	45%	51%	59%
Malaysia	56%	43%	38%	23%	25%	29%	21%	32%	33%
Namibia	20%	2%	0%	60%	57%	42%	20%	41%	58%
Niger	4%	2%	0%	7%	5%	5%	89%	93%	95%
Nigeria	12%	15%	71%	12%	15%	24%	76%	70%	5%
Netherlands	85%	28%	1%	5%	22%	16%	10%	51%	83%
Norway	90%	64%	39%	5%	9%	10%	5%	27%	51%
Nepal	4%	2%	1%	27%	27%	27%	69%	71%	73%
Pakistan	8%	5%	3%	33%	29%	25%	60%	66%	72%
Panama	62%	78%	90%	10%	11%	5%	28%	11%	5%
Peru	22%	28%	44%	32%	37%	51%	46%	35%	5%
Philippines	27%	27%	35%	34%	33%	41%	39%	40%	24%
Poland	77%	38%	12%	6%	26%	27%	17%	36%	60%

Country	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Portugal	79%	0%	0%	5%	25%	11%	16%	75%	89%
Paraguay	14%	8%	4%	44%	36%	28%	41%	56%	69%
Romania	65%	44%	31%	5%	23%	35%	30%	33%	34%
Rwanda	5%	0%	0%	18%	11%	7%	77%	89%	93%
Sudan	12%	10%	10%	37%	57%	76%	51%	33%	14%
Senegal	10%	9%	8%	37%	33%	28%	52%	58%	65%
Singapore	60%	68%	79%	30%	27%	16%	9%	5%	5%
Sierra Leone	7%	1%	0%	5%	5%	5%	88%	94%	95%
El Salvador	24%	19%	15%	39%	35%	30%	37%	45%	56%
Sweden	84%	4%	0%	10%	27%	11%	6%	69%	89%
Chad	6%	0%	0%	11%	7%	5%	83%	93%	95%
Togo	7%	0%	0%	12%	8%	5%	81%	92%	95%
Thailand	22%	26%	40%	25%	28%	39%	53%	46%	20%
Tunisia	62%	63%	69%	14%	14%	13%	24%	24%	18%
Turkey	57%	66%	90%	14%	12%	5%	30%	22%	5%
Tanzania	5%	4%	3%	12%	12%	12%	83%	84%	85%
Uganda	12%	11%	11%	10%	11%	13%	79%	78%	76%
Uruguay	74%	64%	61%	5%	5%	5%	21%	31%	34%
United States	87%	11%	0%	7%	28%	13%	6%	61%	87%
Vietnam	21%	22%	27%	18%	27%	37%	61%	51%	36%
South Africa	17%	6%	0%	75%	67%	58%	8%	26%	42%
Zimbabwe	22%	19%	13%	12%	19%	17%	66%	63%	70%

Table A8. Projections for developing countries from 2010 to 2030 using country-specific capital share under reformist scenario and persistent informality parameter options, i.e. annual growth rates of μ = 1%, *b* = 0.25%, *a* = 0.25%, and ζ = - 0.25%.

Category	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Albania	39%	48%	68%	10%	14%	23%	52%	38%	8%
Argentina	46%	48%	55%	36%	32%	34%	18%	20%	11%
Burundi	7%	0%	0%	7%	5%	5%	86%	95%	95%
Benin	6%	2%	0%	7%	5%	5%	87%	93%	95%
Bangladesh	5%	3%	1%	38%	51%	68%	57%	46%	31%
Bulgaria	75%	86%	90%	18%	9%	5%	8%	5%	5%
Bolivia	13%	11%	7%	33%	29%	26%	54%	61%	67%
Brazil	58%	53%	41%	20%	20%	21%	23%	27%	38%
Botswana	17%	25%	36%	73%	70%	59%	10%	5%	5%
Central African Republic	5%	4%	5%	8%	6%	6%	87%	90%	89%
Chile	56%	73%	83%	21%	22%	12%	23%	5%	5%
China	34%	62%	65%	19%	33%	30%	48%	5%	5%
Côte d'Ivoire	14%	6%	0%	10%	5%	5%	76%	89%	95%
Cameroon	17%	14%	10%	12%	9%	7%	71%	77%	84%
Congo, Rep.	12%	10%	7%	17%	13%	11%	71%	77%	82%
Colombia	30%	31%	32%	28%	27%	30%	43%	42%	38%
Costa Rica	57%	32%	6%	24%	34%	32%	19%	34%	62%
Dominican Republic	30%	36%	47%	34%	37%	45%	37%	27%	8%
Ecuador	27%	33%	48%	31%	31%	37%	42%	36%	15%
Egypt, Arab Rep.	54%	65%	82%	26%	22%	13%	21%	12%	5%
Ghana	10%	9%	9%	16%	16%	18%	74%	75%	74%
Guinea	7%	7%	7%	5%	5%	5%	88%	88%	88%
Guatemala	21%	19%	16%	38%	31%	25%	41%	49%	60%
Hong Kong SAR, China	76%	79%	76%	17%	16%	19%	7%	5%	5%
Honduras	18%	10%	2%	32%	29%	26%	50%	61%	72%
Hungary	86%	37%	2%	8%	25%	23%	6%	39%	74%
Indonesia	14%	15%	18%	31%	34%	45%	55%	52%	37%
India	12%	8%	5%	11%	12%	14%	78%	80%	81%
Iran, Islamic Rep.	41%	49%	67%	23%	19%	19%	36%	32%	14%
Iraq	43%	51%	61%	35%	32%	29%	21%	17%	10%
Israel	85%	68%	30%	8%	10%	14%	7%	22%	56%
Jamaica	21%	14%	7%	47%	35%	29%	32%	51%	64%
Jordan	52%	56%	57%	41%	39%	38%	7%	5%	5%
Kenya	19%	0%	0%	28%	22%	11%	53%	78%	89%
Cambodia	1%	0%	0%	28%	42%	59%	71%	58%	41%

Category	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Korea, Rep.	71%	84%	76%	5%	9%	19%	24%	8%	5%
Lao PDR	2%	1%	0%	15%	16%	18%	83%	83%	82%
Lebanon	11%	10%	13%	57%	49%	71%	32%	42%	16%
Sri Lanka	25%	0%	0%	36%	36%	26%	39%	64%	74%
Lesotho	17%	0%	0%	70%	46%	27%	13%	54%	73%
Morocco	30%	32%	32%	23%	28%	35%	46%	40%	33%
Madagascar	7%	6%	4%	9%	8%	7%	84%	86%	89%
Mexico	28%	30%	31%	44%	40%	37%	28%	30%	32%
Mali	11%	11%	9%	7%	6%	5%	82%	82%	85%
Mongolia	43%	51%	90%	5%	5%	5%	52%	44%	5%
Mozambique	13%	31%	52%	20%	64%	43%	67%	5%	5%
Mauritania	24%	17%	10%	30%	35%	35%	45%	48%	55%
Malaysia	56%	50%	47%	23%	23%	29%	21%	27%	24%
Namibia	20%	5%	0%	60%	58%	45%	20%	36%	55%
Niger	4%	2%	0%	7%	5%	5%	89%	93%	95%
Nigeria	12%	16%	78%	12%	15%	17%	76%	69%	5%
Nepal	4%	3%	1%	27%	27%	27%	69%	71%	72%
Pakistan	8%	6%	4%	33%	29%	26%	60%	65%	70%
Panama	62%	85%	90%	10%	8%	5%	28%	6%	5%
Peru	22%	30%	49%	32%	37%	46%	46%	33%	5%
Philippines	27%	30%	39%	34%	33%	41%	39%	38%	19%
Poland	77%	51%	19%	6%	23%	30%	17%	26%	51%
Paraguay	14%	10%	5%	44%	36%	29%	41%	54%	66%
Romania	65%	54%	41%	5%	20%	36%	30%	27%	24%
Rwanda	5%	0%	0%	18%	12%	7%	77%	88%	93%
Sudan	12%	13%	13%	37%	57%	79%	51%	30%	8%
Senegal	10%	10%	9%	37%	33%	28%	52%	57%	63%
Singapore	60%	72%	85%	30%	23%	10%	9%	5%	5%
Sierra Leone	7%	2%	0%	5%	6%	5%	88%	93%	95%
El Salvador	24%	22%	17%	39%	35%	31%	37%	43%	52%
Chad	6%	0%	0%	11%	7%	5%	83%	92%	95%
Togo	7%	1%	0%	12%	8%	5%	81%	91%	95%
Thailand	22%	28%	44%	25%	27%	39%	53%	45%	16%
Tunisia	62%	69%	79%	14%	11%	10%	24%	20%	11%
Turkey	57%	71%	90%	14%	10%	5%	30%	19%	5%
Tanzania	5%	4%	3%	12%	12%	12%	83%	83%	84%
Uganda	12%	12%	13%	10%	11%	13%	79%	77%	74%
Uruguay	74%	67%	65%	5%	5%	5%	21%	28%	30%
Vietnam	21%	25%	32%	18%	27%	37%	61%	49%	32%
South Africa	17%	9%	1%	75%	69%	62%	8%	21%	36%

Category	Formal labor			Modern Informal Labor			Rudimentary Informal Labor		
	2010	**2020**	**2030**	**2010**	**2020**	**2030**	**2010**	**2020**	**2030**
Zimbabwe	22%	23%	17%	12%	19%	19%	66%	59%	65%