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Informal self-employment and macroeconomic fluctuations

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ABSTRACT

Informal self-employment is a major source of employment in developing countries. Its cyclical behavior is important to our understanding of the functioning of LDC labor markets, but turns out to be surprisingly complex. We develop a flexible model with two sectors: a formal salaried (tradable) sector that may be affected by wage rigidities, and an informal (non tradable) self-employment sector faced with liquidity constraints to entry. This labor market is then embedded in a standard small economy macro model. We show that different types of shocks interact with different institutional contexts to produce distinct patterns of comovement between key variables of the model: relative salaried/self-employed incomes, relative salaried/self-employed sector sizes and the real exchange rate. Model predictions are then tested empirically for Argentina, Brazil, Colombia and Mexico. We confirm episodes where the expansion of informal self-employment is consistent with the traditional segmentation views of informality. However, we also identify episodes where informal self-employment behaves “pro-cyclically”; here, informality is driven by relative demand or productivity shocks to the non tradable sector.

1. Introduction

This paper examines the adjustment of informal self-employment, a major component of developing country labor markets, to macroeconomic shocks. It models both the decisions and credit constraints facing heterogeneous workers to enter self-employment, as well as standard labor market rigidities potentially found as impediments to entering the formal sector. Taking advantage of the fact that the vast majority of informal self-employed are found in the non tradable sectors, and most formal in the tradable sector, it then locates this labor market in a standard two sector open economy model. Together, this permits the development of a typology of movements of relative labor shares, relative incomes and the real exchange rate with respect to different sectoral shocks that underlie aggregate business cycles, and degrees of labor market rigidity.

Such an approach is valuable for several reasons. First, the model offers insights into the reasons behind the multiple and shifting patterns of comovement (regimes) of an important component of the informal sector with macroeconomic fluctuations. In particular, it offers an explanation for observed episodes of procyclicality of self-employment which run counter to all existing models of the informal sector. The rationale underlying these procyclical movements adds support to an emerging view of informal self-employment that stresses a large voluntary component of entry and hence the desirability of the sector for many workers. However, the model is also general enough to allow for varying degrees of involuntary entry driven by conventional segmentation considerations. In this sense, we offer a very rich and flexible view of the developing country labor market. Second, the derived typology of regimes can be used by analysts and policy makers empirically to exploit the observed comovements of macroeconomic time series for diagnostic purposes: to establish the presence or absence of formal sector segmenting distortions; or to identify the sources of changes in the size of the informal sector. Finally, the framework is flexible enough to incorporate more secular issues of regulation and taxation, and growth that are also relevant to explaining the size of the informal self-employed sector.

1.1. Background

We focus on self-employment, defined in the present case as own account workers as well as owners of firms with under five employees for several reasons. First, in Latin America, the sector accounts for 25 to 50% of employment and in other poorer regions, like Africa, substantially more. Understanding the behavior and *raison d'être* of

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the sector is of clear importance. Second, in the countries we study, the self-employed or micro firm sector is the heart of the informal sector. It has been a longstanding proxy for informality by International Labor Organization and it is highly correlated with informality measured as being unprotected by social and labor protections: In Argentina 75%, Brazil 61%, and Mexico 77% of uncovered workers are found in firms of five or fewer workers and most of these in single person firms, that is, the self-employed. Further, the share of workers that are informal in these firms is over 80%.

The debate over the role of the informal goes back almost half a century. A prominent stream of the literature has intellectual roots perhaps best distilled in Harris and Todaro's (1970) vision of markets segmented by wage setting in the formal sector that leaves the traditional sector rationed out of modern salaried employment.[1] The view of the informal sector as the inferior segment of a dual labor market, expanding during downturns to absorb increased unemployment, became highly influential in the International Labor Organization, its Latin America affiliate, the Latin America Regional Employment Program (PREALC), and the World Bank.[2]

However, dating at least from Hart's (1973) work in Africa, a parallel stream has stressed the sector's dynamism and the likely voluntary nature of much of the entry into informal self-employment.[3] Increasingly, theoretical discussions of the sector assume mainstream models of worker sectoral selection, and the firm.[4] Still, two of these papers derive and present evidence for the countercyclicality of informality (Loayza and Rigolini, 2006) or a correlation of informality with unemployment (Boeri and Garibaldi, 2006), consistent with the earlier literature. Were it the focus of his paper, Rauch's formalization of this more traditional model of markets segmented, in this case, by a minimum wage would generate a similar pattern.

However, greater disaggregation of the data suggests more complex patterns of movement of self informal employment across macroeconomic fluctuations. In particular, in several country-episodes we study, self-employment appears to be procyclical. As an example, a first look at time series for Mexico suggests cyclical behavior distinct from that of a shock absorber during downturns. Fig. 1a plots the evolution of the relative salaried/informal self-employed sector sizes and GDP growth and shows that during the recovery of 1987–1991 they were negatively correlated. Fig. 1b further shows that across this same period, the earnings of the self-employed relative to formal salaried workers rose. Both are consistent with a procylical expansion of self-employment. Since over 80% of self-employed are found in domestic services, transportation, commerce, or construction, we argue that that the boom in real estate and other non-tradable industries across this period created new opportunities for micro-entrepreneurs. Contrarily, it is also the case that in the subsequent period leading up to the crisis of 1995, the countercyclical movements envisaged by more traditional segmentation views appear, manifested as a positive comovement relative salaried/informal self-employed sector sizes and GDP growth (Fig. 1a) , as well as a negative comovement of earnings and labor market sector sizes (Fig. 1b). Similar structural shifts in the relationship between self-employment and growth are visible across the other countries shown in Fig. 1a and b.

We argue that these distinct and changing patterns suggest that the pro- or countercyclicality of the two labor market sectors may depend on the sectoral origin of the shocks, and the presence or absence of binding wage rigidities. That is, a conventional focus on the correlation between self-employment and GDP in the aggregate may conceal important patterns of comovement and hence muddy our understanding of the *raison d'être* and dynamics of the informal self-employed.

The existence of different regimes with distinct identifying patterns of comovement among a few variables also suggests that time series data on these series may offer potentially useful labor market diagnostics for policy makers, for instance, in identifying the roots of expansion of the informal sector across a given period: That is, it could shed light on whether it is due to more onerous union or legislation induced rigidities that may require politically costly reforms to offset, or alternatively a construction boom, or simply a slowdown of the formal manufacturing sector that would not. Studying the relationship among three variables easily extracted from repeated cross sections and financial data can offer a wealth of insight into the underlying operation of the labor market that has not been previously possible. It also provides an alternative to the conditional income comparisons commonly used to demonstrate the inferiority of informal work, which are rendered highly suspect by their inability to control for unobserved job and individual effects.[5]

2. Modeling approach

2.1. The labor market

For such diagnostics to be feasible, we need to understand the drivers of the very large observed movements in relative wages which in a simple textbook world, would be forced to equivalence. Three effects in principle may be at play: barriers to the arbitrage of labor earnings due to barriers to entry to either sector either through quantity or price rigidities, barriers to arbitraging of returns to capital of the self-employed which are generally not separable in labor market surveys from earnings of labor *per se*, and changes in the skills composition of the sectoral work forces.

To capture these effects, we begin by constructing a model of the labor market in developing countries that is firmly rooted in the established advanced country literature and which enjoys increasing support from the developing country data. We postulate two sectors: a tradable sector where workers receive a wage and are covered by labor legislation or unions that may or may not introduce distortions; and a non tradable self-employed sector of the kind postulated by Lucas (1978) with heterogeneity in level of entrepreneurial ability, and where, credit constraints can constitute a barrier to entry from salaried work. The idea that the self-employed enter voluntarily, but that there may be barriers to salaried workers opening an enterprise enjoys increasing support from the both the economics and sociology literature. To begin, surveys from both Mexico and Brazil suggest that around 70% of the self-employed entered or have remained there voluntarily, largely for reasons of higher incomes or greater flexibility. Indeed, the sociologists Balan, Browning, and Jelin (1973) interviewed Mexican workers and found being one's own boss to be well regarded and that movements into self-employment from salaried position

[1] In fact, in Harris and Todaro's model, the "traditional" sector was the rural sector disposed to migrate. However, it represents perhaps the first analytically worked out view of the dual labor market and remains highly relevant to the debate over the informal sector and its relative inferiority. See Schneider and Enste (2000) for a more comprehensive review of existing views. A rich theoretical literature is emerging that poses more sophisticated mechanisms that relate informality to unemployment. See, for example, Boeri and Garibaldi (2006).

[2] For early statements, see Sethuraman (1981), Tokman (1978), and Mazumdar (1975), respectively.

[3] See for more recent formulations in this vein, de Soto (1989), Loayza (1996) and Maloney (1999).

[4] A group of papers with roots in Lucas (1978), for instance, Rauch (1991), Boeri and Garibaldi (2006), de Paula and Scheinkman (2007), and Loayza and Rigolini (2006) postulate a continuum of entrepreneurial ability and workers sorting themselves among different formal and informal sectors of work.

[5] See Maloney (1999), and Pratap and Quintin (2006). Total returns to informal self-employment and salaried employment incorporate differences in taxes, risk premia, flexibility, etc., all of which will lead to incomes not being equated, even in the absence of segmentation.