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Impacts of globalization on the informal sector: Empirical evidence from developing countries

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ARTICLE INFO

ABSTRACT

A number of theoretical studies have traced the impacts of globalization (mostly characterized by trade integration) on informality, while relevant empirical literature has not been well developed. This paper aims to fill this knowledge gap by shedding further light on the impacts of different globalization dimensions (both economic and non-economic) on informality in developing countries. Employing a new Bayesian Model Averaging technique, which allows panel regression with fixed effects and endogenous regressors, we find that the indicators significantly affecting informality are trade integration, trade diversification and concentration, de facto and de jure financial openness, and social globalization. By contrast, many covariates found significant by previous empirical studies do not seem to be robust to being included in informality modelling.

1. Introduction

Since the 1990s, the concept of globalization has widely employed in academic and political debates. Globalization has also become a phenomenal aspect of the world economy over the past two decade or so. Ocampo and Martin (2003, p. 1) mention that globalization is used "*to refer to the growing influence exerted at the local, national, and regional levels by financial, economic, environmental, political, social, and cultural processes that are global in scope*". This definition highlights the multidimensional nature of globalization. For instance, in terms of trade globalization, by 2012, the share of trade flows in the world GDP valued at 60.46%, compared with less than 40% in the mid-1990s. Similarly, in terms of cross-border financial transactions, FDI net flows reached more than 2.0% of the world GDP, while this figure only attained to less than 1.0% in the mid-1990s (World Development Indicators WDI). Globalization is believed not only to sustain the world economic growth, but also to lead to a rapid expansion of employment opportunities (Bacchetta et al., 2009).[1] Another ILO-WTO study (International Labor Office and World Trade Organization, 2007) also argues that globalization holds the promise of faster economic growth, higher employment and higher incomes as well. However, this study does not investigate the impacts of globalization on the quality of jobs or the incidence of informal employment, which have become a key issue in developing countries. The fact is that in developing countries,

the size of shadow economy has remained high, or has even increased, in spite of more robust economic growth and employment creation. Therefore, the present paper tends to fill this knowledge gap by studying the impacts of globalization on the informal sector and economy shadow in developing countries.

In the existing literature, there is a large number of works focusing on the determinants of informality. For instance, Friedman et al. (2000) tend to establish a link between institutions and the informal economy across 69 countries including the formerly communist countries, the OECD countries and Latin America as well. According to the authors, higher tax rates lead to less unofficial activity, while corruption is correlated with more informal activity. These findings also help explain how the tax base is undermined by poor institutions, which induce more activity to move into the shadow economy. In the same vein, Dabla-Norris et al. (2008) use a data sample covering over 4000 firms in 41 countries to examine the determinants of the informal sector's size. The authors argue that the legal framework's quality plays a crucially important role in determining the size of the informal sector, whereas the significance of taxes, regulations, and financial constraints is reduced in the context of a well-functioning legal system. Moreover, finance constraints tend to induce informal activity among small firms but not among large firms, whereas legal obstacles induce informality among large firms. The effect of financial development on the incidence of informality is also previously investigated in Straub (2005) through a

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model of firms' choice between formality and informality. He suggests that making market interactions more efficient, therefore rendering the participation in formal credit markets more attractive, is an important channel through which better rule of law and judicial enforcement may narrow activity of shadow economy. The author also evidences the potential benefits of micro-credit programs that make better credit mechanisms available to small entrepreneurs. Also focusing on the determinants of the informal sector's size, Chong and Gradstein (2007) develop a simple theoretical model in which a rise in income inequality, by lowering the relative benefits from becoming formal for the poor, leads to a bigger informal sector, more so the weaker the institutions. The authors also empirically validate their theoretical prediction by using different proxies for the size of the informal sector, income inequality, and institutional quality and employing a broad range of econometric techniques in a panel dataset of industrial and developing countries over the period 1970–2000. More recently, Loayza et al. (2009) tend to revisit the causes and the consequences of informality in the case study of Latin America and the Caribbean. The authors find that the informal sector results from the combination of poor public services, a burdensome regulatory regime, and weak monitoring and enforcement capacity by the state.

Regarding the link between globalization and informality, the existing theoretical works have only focused on the possible effects of trade globalization on informality and can be classified into two stands. First, basing on the Harris-Todaro (1970) dual-economy model of rural-urban migration, Chandra and Khan (1993) and Marjit et al. (2007) suggest that tariffs reduction results in a raise in both employment and wages in the informal sector when informal output is traded. By contrast, according to Beladi and Yabuuchi (2001), trade opening may decrease the size of informal employment when informal outputs are used as intermediate inputs in the formal sector. Second, in the vein of trade models with differentiated wages, when capital is sufficiently mobile, trade integration can boost both informal employment and informal wages (Marjit and Maiti, 2005; Kar et al., 2003). To test the numerous theoretical hypotheses, several empirical works have been developed and mostly available for a small group of Latin American countries. According to these studies, the impacts of trade opening on informal economy strongly depend on the country-specific circumstances. For instance, trade integration reduces informal activities in Mexico (Maloney, 1998), but increases informality size in Colombia and has no significant impact on Brazilian informal employment (Goldberg and Pavcnik, 2003b).

While globalization is manifold dimensions: economic (trade and financial), social, political, cultural, environmental and so on, the studies cited above have only deepened our understanding of trade opening's impacts on informality. They have seemed to ignore impacts of other important globalization aspects. Recently, using a new database of International Labor Organization, Bacchetta et al. (2009) tend to clarify the multi-dimension of globalization as well as to investigate its impacts on informal employment in developing countries. To capture the multifaceted nature of globalization, the authors introduce in their estimated models a large set of globalization indicators collected from various international sources. The authors draw a mixed picture of globalization's impacts on informal employment in developing countries. On the one hand, they suggest that more open economies may have a lower incidence of informal employment. On the other hand, trade reforms seem to associate with higher informal employment. Similarly, FDI inflows may lead to an increase in informal employment.

Complementing to the work of Bacchetta et al. (2009), Fugazza and Fiess (2010) use three different data sets to assess the sign of such a complex relationship. The authors also draw a nuanced picture and no clear-cut conclusion regarding the connection between globalization and informality. In a cointegration framework, more openness to trade is associated with greater informal employment and output for most countries, while lower trade restrictions appear to generate lower

informal employment and output. However, the system-GMM estimation generates contrasting results that fewer trade restrictions associate with more informal output but less informal employment. To the best of our knowledge, the studies of Bacchetta et al. (2009) and Fugazza and Fiess (2010) can be seen as the pioneer ones that endeavor to trace the possible impacts of different globalization dimensions on informality in developing countries. These works have focused on regression models involving such a large and specific set of covariates collected from various data sources and regrouping information on different globalization dimensions. Nevertheless, this empirical strategy seems to ignore the uncertainty problem regarding the model specification itself, which can have dramatic consequences on inference. The reason is that the effects of included covariates can critically depend on the inclusion versus the exclusion of other covariates. Consequently, the potential uncertainty problem may lead to a little agreement about the impacts of globalization on informality between the work of Bacchetta et al. (2009) and that of Fugazza and Fiess (2010).

So that, the present paper aims to revisit the potential impacts of different globalization dimensions on informality in developing countries. Differing from previous empirical works, which investigate the nature (positive or negative, significant or insignificant) of globalization's impacts on informal employment, we tend to identify, from a large set of potential covariates, a subset of globalization indicators with high inclusion probabilities in the informality model. To do so, we employ a new Bayesian Model Averaging (BMA) methodology that allows panel regression with fixed effects and endogenous regressors. This technique also allows us to overcome model uncertainty regarding the set of instruments, regressors, and exogeneity restrictions.

The reminder of this paper is organized as follows. Instead of providing a brief literature review of globalization's impacts on informality, which is extensively documented in the orthodox work of Bacchetta et al. (2009), *Section 2* outlines the econometric methodology. Section 3 describes different datasets used for the testing. Section 4 reports and analyzes the empirical results, and makes comparisons to the related literature. Concluding remarks are in Section 5.

2. Empirical model specifications

As mentioned above, our main objective is to identify globalization indicators, which really influence the informal sector in developing countries. In other words, we must choose from a large set of globalization variables the "true" ones to include in our informality models. In this case, the appropriate set of independent globalization variables is often highly uncertain. However, encountering uncertainty about what kind of globalization dimensions, which should be include in our statistical models, is not an easy task because classical methods propose few tools for handling model uncertainty. Without formal methods, if we wish to test our findings' robustness, we have to estimate several alternative models to see whether the sign and/or the significance level of explanatory variables' coefficients change. Nevertheless, this method can conduct us in another uncertain manner and offers no explication to resolve conflicting findings across alternative specifications. In addition, this approach deals with a new and deeper underlying problem, notably the size of the potential model space. For instance, a model with k independent variables implies 2^k possible specifications.

To address model uncertainty, the BMA estimation, which is extensively documented in two excellent surveys of Raftery (1995) and Hoeting et al. (1999), has become a well-known technique allowing us to assess the robustness of results to alternative specifications by calculating posterior distributions over coefficients and models. For instance, in the empirical growth literature, the BMA technique has been widely accepted as a way to overcome the sensitivity of results to different model specifications, particularly in regression models that identify the determinants of economic growth (e.g. Leamer, 1978; Levine and Renelt, 1992; Fernandez et al., 2001a, b; Sala-i-Martin