ELSEVIER
www.elsevier.com/locate/worlddev

World Development Vol. 37, No. 10, pp. 1600–1611, 2009

0305-750X/$ - see front matter

doi:10.1016/j.worlddev.2009.03.001

The Underground Economy in the Late 1990s: Evading Taxes, or Evading Competition?

LILIANE KARLINGER *
University of Vienna, Vienna, Austria

Summary. — This paper studies the driving forces behind the considerable expansion of the underground economy during the late 1990s. I propose a novel explanation for this phenomenon: the sharp increase in market competition worldwide, which reduces prices and profits and drives firms into the shadow economy. Empirical evidence from a panel covering 45 countries from 1995 to 2000 shows that increased competition is indeed correlated with an expansion of the underground economy. The effect is strongest in low-tax, high-corruption countries that do not provide the public services which make it worthwhile for firms to remain official despite growing competitive pressure.

Key words — shadow economy, competition, corruption, OECD, Asia, Eastern Europe

1. INTRODUCTION

When the Austrian government changed the rules by which public building contracts were assigned, what they had in mind was to intensify competition among construction firms, which would lead to lower prices and hence a better allocation of tax money. Under the new rules, local authorities were forced to put each and every construction project out to tender, and to assign the contract to the lowest-price bid. This reform was meant to create a level playing field for competition in the construction industry, breaking with a long tradition of discrimination against certain firms (and in favor of others) in the assignment of building contracts. What nobody had expected, however, was the dramatic surge in shadow economic activity in the Austrian construction industry following the introduction of the new rules and regulations. In a somewhat apologetic newspaper interview, the head of the Austrian Federal Guild of the Construction Industry, Mr. Johannes Lahofer, explained this development as a direct consequence of the intensified competition for public building contracts. [1]

This paper endeavors to apply the causalities suggested by this anecdote to the shadow economy at a much larger scale, in order to help explain the striking growth of the underground sectors all over the world that occurred in the late 1990s. While none of the common measures of the phenomenon is immune to criticism, [2] there is evidence that the shadow economy was on the rise almost everywhere and in particular in the developing world. For instance, in Thailand, where the informal sector has traditionally been pervasive, Schneider (2005) estimates that the shadow economy (as a share of official GDP) grew from 43% in 1990 to a staggering 52% in 2000. But even Indonesia, which is at the lower end of the distribution, saw its shadow economy rise from 15% to almost 20% over the same decade, a growth rate of more than 30% in just 10 years. The phenomenon is not confined to developing countries: to give another example, South Korea, certainly among the most industrialized in the region, experienced an increase in its shadow economy from an already high 22% in 1990 to a stunning 27% in 2000.

Of course, the concept of "shadow economy" can mean different things, and hence can have different causes, depending on the country we consider. In less industrialized countries, weak administrative capacities imply that a considerable part of economic activity remains unrecorded, giving rise to what is commonly called the "informal sector." By contrast, in most OECD countries, firms will deliberately conceal (part of) their transactions from public authorities to avoid the payment of taxes and social security contributions, and to avoid compliance with certain legal standards, for example, labor market regulations and trade licenses (see Friedman, Johnson, Kaufmann, & Zoido-Lobaton, 2000; Johnson, Kaufmann, & Zoido-Lobaton, 1998; Lemieux, Fortin, & Frechette, 1994; Schneider & Enste, 2000). In either case, the term "shadow economy" as used in this paper represents those economic activities which remain unrecorded although they should be included in the National Income Accounts.

As I will show, the movements in any of the conventional explanatory factors listed above can only partially explain the considerable expansion of the shadow economy. For instance, Brazil's marginal income tax rate increased by only 2.5% during 1995–2000 (placing Brazil at the very low end of the distribution, with most countries seeing 2-digit increases in their income tax rates over the same period), and other types of taxes (corporate and VAT) were even falling; labor market regulations remained largely unchanged, and payroll taxes were even cut slightly; yet Brazil's shadow economy followed the general trend, increasing from 32% in 1990 to almost 40% by 2000.

Now, it is well-known that the 1990s were characterized by a sharp increase in market competition worldwide, which was a consequence of reduced trade barriers, market liberalization programs, and improved communication and transportation (Gupta & Choudhry, 1997). This paper asks the question whether this increase in competitive pressure can help us explain the expansion of the underground economy.

* I am indebted to Massimo Motta, Frank Vella, Andrea Ichino, Pascal Courty, Pedro Pita Barros, Oriana Bandiera, Patrick Rey, and two anonymous referees for valuable comments and suggestions. I have also benefited from the comments of Joe Harrington, Jesus Crespo Cuaresma, Sofronis Clerides, Giancarlo Corsetti, Gerd Muehlheusser, Thomas Rønde, and Jochen Schanz. The usual disclaimer applies. Final revision accepted: March 18, 2009.

2. THE LINK BETWEEN MARKET COMPETITION AND THE SHADOW ECONOMY

(a) *Literature review*

The theoretic literature on this question is very scarce. Some readers may be reminded of Shleifer's (2004) argument that competition may promote unethical behavior (e.g., child labor and corruption). He highlights the trade-off between cost savings afforded by the unethical behavior and the firm owner's private disutility of behaving unethically, and finds that an increase in competition tilts this trade-off in favor of unethical behavior. But unlike the types of behavior studied by Shleifer (2004), shadow economic activity might not even be classified as "unethical" by many people.[3]

One of the earliest empirical studies on the shadow economy using firm-level data is Levenson and Maloney (1998). They assume that informal firms in developing countries have dynamics similar to firms in industrial countries: entrepreneurs have unobserved, differing cost structures that determine their long-run size and survival structures that they can only discover by going into business. Informality is thought of as a decision to participate in societal institutions. Access to mechanisms that ensure property rights, pool risk, or enforce contracts become more important as a firm grows, and the entrepreneur will be willing to pay for them through "taxes" in a way that was not the case as a small firm. Using detailed observations from Mexico, Levenson and Maloney find their view consistent with patterns of formality and growth of microfirms: Informal firms tend to remain small and have high rates of mortality, and lower productivity—without recourse to government-induced distortions in labor or product markets. Further, the framework predicts that firms whose cost structures dictate that they should expand will make the transition to formality as they grow.

Lamanna and Gonzalez (2007) use data for 6,466 manufacturing firms in the official sector located in 14 countries in Latin America, and they show that those formal firms which are affected by head-to-head competition with informal firms largely resemble them. They are small, credit-constrained, underutilize their productive capacity, serve smaller customers, and are in markets with low entry costs. This paper also studies the impact of country characteristics (such as business regulation and tax enforcement) on the percentage of formal firms adversely affected by informal competition.

Dabla-Norris, Gradstein, and Inchauste (2008) use firm-level data from the World Business Environment Survey to identify the determinants of informality. They find that the quality of the legal framework is crucially important 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. Again, being small and financially constrained is positively correlated with the propensity to go informal.

A paper that is very closely related to my work is Goldberg and Pavcnik (2003). They study one particular form of intensified competition—the reduction of trade barriers—in two developing countries, namely Brazil and Colombia. While there is no evidence of a relationship between trade policy and the informal sector in Brazil, they do find evidence of such a relationship in Colombia, but only for the period preceding a major labor market reform that increased the flexibility of the Colombian labor market.

Another paper that is closely related to my analysis is Eilat and Zinnes (2002), who provide a comprehensive cross-country study of the shadow economies in 25 transition countries for 1990–97. First, they construct a new measure of the size of the underground economy, which is then correlated to a large number of socio-economic indicators.[4] They then discuss how the shadow economy affects the speed of economic transition and economic growth. They find hysteresis suggesting that, once established, the shadow economy is hard to remove. Finally, they discuss the impact of the shadow economy on three dimensions of competition, namely market structure, ownership, and market conduct. In the very specific context of transition economies, their notion of "shadow economy" seems to imply a "deviation from competition" (see p. 1245f); in other words, the shadow economy is *per se* anticompetitive, while competitiveness is attributed exclusively to the official sector. This notion of competition differs clearly from the one used in my work, where the degree of competitiveness comes prior to the firm's decision of whether to operate in the official or underground economy. Specifically, it refers to the ability to charge above-marginal-cost prices (in either of the two sectors), affecting profitability in both sectors alike (although in an asymmetric way).

(b) *The contribution of this paper*

This paper builds on the theoretical model developed in Karlinger (2008). In this model, the individual firm can freely choose whether to enter the official or the underground sector, and the intensity of competition in the industry (assumed to be the same across the two sectors, official and underground) is captured by a single parameter that measures the degree of product differentiation (the source of market power, i.e., the ability to price above marginal costs). A tax authority monitors the industry and imposes fines on those underground firms that it detects.

A firm which operates in the underground economy can buy its inputs, in particular labor, at a lower price (because it avoids payroll taxes, disregards safety and health standards, etc.), thereby reducing its variable cost relative to a firm in the official economy. The underground firm can pass on its savings to consumers, which will reduce market prices, and as a result its competitors' profits fall. Thus, the official firm is put at a competitive disadvantage, and may have to choose between operating underground as well or going out of business. The fiercer is competition, the higher the pressure to pass on cost savings to consumers, and the fewer firms will be able to survive in the official sector. This result provides the foundation for the first hypothesis to be tested in the present paper:

Hypothesis 1. The fiercer is competition, the more likely are underground activities to spread in the economy.

Now, recall that the nature of the underground economy in developing countries is likely to differ from that in industrialized countries. Thus, the impact of competition on the incidence of shadow economic activities could also depend on other country characteristics. As Posner (1996) pointed out, using formal market institutions, though costly in terms of tax liabilities, allows to resort to state-guided legal enforcement mechanisms in situations where opportunistic behavior and breach of contract have to be considered likely, for example, when contracting with total strangers, or if transactions are non-simultaneous and long term (see also Dabla-Norris *et al.* (2008) on this point). This insight leads us to our next hypothesis:

Hypothesis 2. Corrupt countries with low government revenue are not able to provide the kind of public services that