The Shadow Economy

MATTHEW H. FLEMING, JOHN ROMAN, AND GRAHAM FARRELL*

"Implicit in much of the literature on the shadow economy is the view that shadow activity is undesirable... However, it is not certain that all shadow economic activity should be discouraged."

In seeking to understand the size of the world economy, we are usually guided by official statistics on output, trade and investment. But there is a driving force in today's world market that has, hitherto, rarely been recognized for its tremendous economic impact. It is what we will refer to as the *shadow economy*. Its oversight in the calculus of the influences on the international economy is due to the statistical opaqueness that is part and parcel of criminal and informal transactions.

Economic activity that falls outside the purview of government accounting is known by various names: shadow, informal, hidden, black, underground, gray, clandestine, illegal and parallel.[1] Implicit in each, save for informal, is that these economic activities include conscious efforts to avoid official detection. Indeed, some unrecorded activities, such as the drug trade, are illicit. Some activities, such as day labor, however, are legal but may include an illicit component, such as unrecorded payments. Still others, such as household production, are wholly legal. Finally, it may be that unrecorded activities occur in a sector of the economy that

* The views expressed in this paper are those of the authors and do not necessarily represent those of their affiliated institutions. The authors wish to thank Douglas Keh and Peter Reuter for their learned advice and input.

[1] Jim J. Thomas, *Informal Economic Activity* (Ann Arbor: University of Michigan Press, 1992) p. X; Edgar L. Feige, "Defining and Estimating Underground and Informal Economies: The New Institutional Economics Approach," *World Development*, 18, no. 7 (1990) pp. 989-1002; Friedrich Schneider and Dominik H. Enste, "Shadow Economies: Size, Causes, and Consequences," *Journal of Economic Literature* (forthcoming 2000).

Journal of International Affairs, Spring 2000, 53, no. 2. © The Trustees of Columbia University in the City of New York.

Copyright © 2000. All rights reserved.

is simply unregulated, rather than illicit.

As these nuances indicate, simply defining the shadow economy is a challenge. Although most authors agree that it is a "fuzzy concept,"[2] the notion that activity in the shadow economy has important implications for the official economy is essentially unchallenged.[3] Despite decades of study on the issue from an empirical and historical point of view,[4] little agreement has been reached on the fundamental constructs that underlie the shadow economy.

The lack of consensus in formulating a unified theory of the shadow economy, or even a precise definition of the components that comprise it, suggests that important questions remain unanswered. To what extent does the exclusion of shadow economic activity distort official estimates of macroeconomic variables, including output, employment and inflation? What are the policy ramifications of these exclusions? What is the distribution of shadow economic behavior between unrecorded, but legal, and illicit activities? Can the overall size of the shadow economy be estimated, and is it changing over time? Do countries at different stages of development possess different types of hidden economies? What is the relationship between regulatory (in)efficiency and the size of the shadow economy?

This paper gives an overview of issues relating to these questions. We begin by discussing definitions of shadow economic activity and why the study of the shadow economy is important. We then review methodologies employed in the estimation of the size of shadow economies and present size estimates for several transition, developing and developed countries. We conclude with thoughts for future research.

---

[2] Thomas (1992), p. 333.

[3] Other excellent summaries of the impact of shadow economic activity can be found in: Schneider and Enste; Hernando de Soto, *The Other Path: The Invisible Revolution in the Third World* (New York: Harper and Row, 1989); Douglas Marcoullier and Leslie Young, "The Black Hole of Graft: The Predatory State and the Informal Economy," *The American Economic Review* 85, no. 3 (1995); Norman Loayza, "The Economics of the Informal Sector: A Simple Model and Some Empirical Evidence from Latin America," *The World Bank Policy Research Working Papers Series* (February 1997); Carlos Maldanado, "The Informal Sector: Legalization or Laissez-Faire?" *International Labour Review,* 134, no. 6 (1995). Also, for a dissent, see Jim J. Thomas who refers to current approaches to measuring the shadow economy as "measurement without theory"; Jim J. Thomas, "Quantifying the Black Economy: 'Measurement Without Theory' Yet Again?" *The Economic Journal,* 109, no. 456 (June 1999), pp. 381-389.

[4] Bill Gibson and Bruce Kelley, "A Classical Theory of the Informal Sector," *The Manchester School,* 62 no. 1 (1994) pp. 81.

Copyright © 2000. All rights reserved.

DEFINITIONS

Unquestionably, the shadow economy represents some form of unofficial economy. However, there is extensive disagreement regarding the definition of the term. To some extent, the shadow economy is a "(pre)concept in search of a theory,"[5] and differences in the definitions of the shadow economy stem from differing research objectives, such as estimating the size of the shadow economy or explaining the motives for shadow economy participation. In general, there are two approaches to defining the shadow economy. The first considers shadow economic activity as simply *unrecorded* economic activity (the *definitional* approach), while the second defines the shadow economy in terms of behavioral characteristics—its economic activity therein (the *behavioral* approach). The former is descriptive while the latter provides underpinnings of a theoretical explanation for shadow economic activity. As a result, the components included in these definitions are necessarily somewhat inconsistent.

A sampling of definitions illustrates these two approaches. Thomas notes that it is "difficult to provide a formal definition" of the shadow economy and suggests that it "covers those activities which...are not recorded in the national income accounts."[6] Schneider and Enste define the shadow economy in a similar manner as "all economic activities which contribute to the officially calculated (or observed) gross national product."[7] Bhattacharyya argues that the hidden economy is best described as unrecorded national income, "calculated as the difference between the 'potential' national income for the given currency in circulation and the recorded national income."[8] Smith defines this sector as "market-based production of goods and services, whether legal or illegal, which escapes detection in the official estimates of GDP."[9]

The alternative approach finds that shadow economic activities are best defined with respect to the particular *behavioral characteristics* of the activities in question. Feige reports that the

---

[5] Thomas (1999) p. 387.
[6] *ibid.*, pp. 1- 2.
[7] Schneider and Enste, p. 5.
[8] Dilip K. Bhattacharyya, "On the Economic Rationale of Estimating the Hidden Economy," *The Economic Journal*, 109, no. 456 (June 1999) p. 348.
[9] Philip Smith, "Assessing the Size of the Underground Economy: The Canadian Statistical Perspectives," *Canadian Economic Observer*, Catalogue No.: 11-010, 3.16-33, 18 March 1994, cited in Schneider and Enste, p. 5.

Copyright © 2000. All rights reserved.

distinguishing feature between official economic activity and informal (shadow) activity is:

> whether the activity adheres to the established, prevailing institutional rules of the game.... Adherence to the established rules constitutes participation in the formal economy...whereas noncompliance or circumvention of the established rules constitutes participation in the informal economy.[10]

Feige adds an important caveat that is generally omitted from other definitions: "The characteristics of each distinct informal economy are determined by the particular set of institutional rules that its members circumvent." He notes that institutional rules cause members of the formal sector to "confront a different set of...transaction costs than those faced by members of the informal sector."[11] Loayza expands on the argument by drawing on a definition used by Portes et al and states that the informal economy is "unregulated by the institutions of society, in a legal and social environment in which similar activities are regulated."[12] His suggestion is that the shadow economy feeds off "an excessive regulatory system [that] makes the formal economy unattractive."[13] Both Loayza and Feige argue that institutional constraints lead to the formulation of the shadow economy. In extreme terms, de Soto claims that the shadow economy that comes about as "[t]he traditional centralism of our society has proven clearly incapable of satisfying the manifold needs of a country in transition."[14] Overall, participation in the shadow economy can be seen as an explicit change in behavior by economic actors in response to institutional constraints.

Both the definitional and behavioral approaches divide the shadow economy into four broadly comparable components: the criminal, irregular, household, and informal sectors. The criminal sector is defined as illegally produced goods and services, such as the production and trade of illicit narcotics. The irregular sector is defined as legally produced goods and services which evade legal

---

[10] Feige (1990) p. 990.
[11] *ibid.*, p. 990.
[12] A. Portes, M. Castells and L.A. Benton, *The Informal Economy: Studies in Advanced and Less Developed Countries* (Baltimore: Johns Hopkins University Press, 1989) p. 12; Loayza, p. 1.
[13] Loayza, p. 1.
[14] de Soto, p. 6.

Copyright © 2000. All rights reserved.

reporting requirements, such as tax evasion. The household sector is defined as household production. And the informal sector is defined as "economic activities that circumvent the costs and are excluded from the benefits"[15] of law, such as unregulated microenterprise.[16]

It is possible to combine the descriptive and behavioral approaches to create a definition with shared principles. Definitions of the shadow economy that include all four components, under the rubric of exclusion from official estimates of national income or output, appear to most accurately *describe* the shadow economy. Definitions that relate economic activities to regulatory compliance begin to provide theoretical descriptions of economic *behavior*. The two definitions have only subtle differences, related to whether the definition is used as a basis for formulating an estimate of the size of the shadow economy (descriptive) or as an explanation for why shadow activity occurs (behavioral). The underlying theoretical basis for both approaches appears to be rather weak, so neither definition yet has substantial predictive powers.

The Importance of Studying the Shadow Economy

Why, then, should we be concerned about the shadow economy? Should we care if transactions occur in the shadow economy rather than the official economy? Tanzi notes that "there cannot be any question that the underground economy is a real phenomenon with important implications that deserve attention and study."[17] Of greatest concern is that this activity is unrecorded, and, as such, official national income accounts statistics do not accurately represent the true state of a nation's economy. Given that these statistics are employed to generate economic policies, inaccurate figures may lead to inappropriate policy responses.

At the same time, the emergence and growth of the shadow economy can also suggest that current policies are misguided. Indeed, the presence of an active shadow economy often suggests that existing economic policies, such as tax or regulatory policies,

---

[15] Feige (1990) p. 992.

[16] These definitions and their attendant labels vary between the definitional and behavioral approaches, and also with specific regard to the household/unrecorded sector; see Feige (1990), pp. 990-993 and Thomas (1992) pp. 3-7.

[17] Vito Tanzi, "Uses and Abuses of Estimates of the Underground Economy," *The Economic Journal*, 109 (June 1999), p. 338.

Copyright © 2000. All rights reserved.

are overly burdensome or oppressive. Moreover, the shadow economy, which is untaxable, reduces potential state revenue. Finally, while some shadow economic activity is clearly undesirable, such as illicit trade in narcotics, much of it is generally constructive. It may provide basic needs, including income, for example, to consumers in developing countries. Therefore, it is difficult to arrive at an overall comprehensive assessment of the impact of the shadow economy on economic growth and development. The following sections discuss measurement difficulties, policy implications, and the normative impact of shadow economic activity.

Why the Shadow Economy Needs Measurement

As noted above, the shadow economy is essentially unrecorded, so official national accounts statistics inaccurately reflect the true state of the economy. Basic macroeconomic principles dictate that without accurate accounting, central banks and other monetary policymakers must establish an effective monetary policy in an atmosphere of significant uncertainty.[18] In other words, effective monetary and fiscal policy design requires a level of precision in the estimates of key statistics, such as output and unemployment, and the presence of non-trivial production in the shadow economy can distort these measures. Consequently, efforts should be made to supplement official national accounts statistics with estimates of shadow economic activity.

The importance of measuring the shadow economy can be demonstrated by the following example. Several authors maintain that the intense recession and high unemployment in the late 1970s and early 1980s in the United States was a mirage,[19] and that official unemployment statistics (which exclude employment in the shadow economy) missed a substantial shift in employment from the official to the shadow economy. As a result, monetary and fiscal policy responses may have been inappropriate. While this is a rather extreme view of the impact of inaccurate measurement,[20] it

---

[18] J.F. Houston, "The Policy Implications of the Underground Economy," *Journal of Economics and Business*, no. 42 (1990) pp. 27-37.

[19] For a description of the processes involved and a review of concurring literature, see Edgar L. Feige, *The Underground Economies: Tax Evasion and Information Distortion* (Cambridge: Cambridge University Press, 1989).

[20] Thomas (1999) makes the argument that the proponents of the mirage theory are mistaken; see pp. 387-388.

Copyright © 2000. All rights reserved.

highlights the potential importance of measuring the shadow economy. The impact of these problems is not limited to large developed nations, such as the United States. Inaccuracies in national accounts statistics have implications for countries in every state of development.

Regarding the influence of the criminal sector of the shadow economy on the official economy, for example, Keh describes the link between illicitly-derived revenues, spending behavior, and economic policy development as follows: "spending behavior becomes influenced not only by the official money supply, but by the infusion of informal credit as well; in turn, the demand for money in the official banking system reflects only a part of domestic economic activity," and thus, the state has less accurate information on which to base fiscal and monetary policies.[21] While this statement refers only to the criminal economy, the message is certainly applicable to non-illicit shadow economic activity.

Inaccurate national accounts statistics may also lead to the inefficient implementation of social welfare programs. If the informal sector of the shadow economy is active, for example, then unemployment may be overestimated and social security and other welfare benefits may be mistakenly targeted to those recipients who actually receive some income (albeit from the informal sector), while those marginally excluded may be in greater need of assistance. Many observers also argue that there is a direct relationship between formal and informal markets. Formal markets may be distorted in the presence of informal economic activity, with respect to both prices and capital allocation.

Finally, there are political economy implications to inaccurate national accounts statistics. Official GDP figures are used, among other things, for several reasons, including: as part of the formula for allocating quota increases that determine voting rights and access to credit (and potentially the terms of the credit) in the IMF, World Bank, and regional development banks; to establish whether or not countries of the European Union meet various EU criteria; and, to set the size of members' contributions to the EU budget.[22] As noted above, the presence of an active shadow

---

[21] Douglas I. Keh, *Drug Money in a Changing World: Economic Reform and Criminal Finance*, UNDCP Technical Series no. 4 (October 1996) p. 4.
[22] Tanzi (1999) pp. 340-341.

Copyright © 2000. All rights reserved.

economy renders the official national accounts statistics imprecise, and incentives may exist for countries to bias estimates of the size of shadow economies to accord with prevailing political interests.

The importance of accurately representing national accounts statistics—and the related need for including estimates of shadow economic activity in such statistics—has not passed unrecognized. Various international standards for the compilation of national accounts statistics, including the System of National Accounts 1993, European System of Accounts 1995, General Data Dissemination System of the IMF, and the Resolution Concerning Statistics of Employment in the Informal Sector 1993 of the ILO all call for the inclusion of informal and/or illicit sector estimates, although they provide little guidance for developing procedures. Eurostat, in conjunction with Statistics Netherlands, is currently sponsoring an initiative to examine the feasibility and necessary methodology of including shadow economy estimates (specifically illicit activity, such as narcotics) in national accounts statistics. Yet despite the call for the inclusion of criminal sector estimates, preliminary study suggests that few EU member states or candidate countries currently include any shadow economic activity in their official figures.[23] Of course, states must be sure not to imply that by including estimates of illicit activity in their national accounts statistics that they are condoning such activity.

Implications of Shadow Economic Activity

There are reasons aside from those related to national accounts statistics that call for the study of the shadow economy. The presence of an active shadow economy may reflect the degree to which various existing economic policies are inappropriate or inefficient. Oppressive tax and regulatory regimes (or increases in the tax burden or the degree and/or complexity of regulation over time) appear to drive economic agents from the official sector into the unregulated shadow economy.[24] As noted by Loayza, rational actors move to the shadow economy to escape the high entry costs to legality, such as license fees and registration

---

[23] Statistics Netherlands, "Minutes, Seminar on Illegal Activities," (13-14 September 1999) pp. 2-4.

[24] Loayza, pp. 3-7; Simon Johnson, Daniel Kaufmannand Pablo Zoido-Lobatón, "Regulatory Discretion and the Unofficial Economy," *The American Economic Review*, no. 88 (May 1998) p. 391; see Schneider and Enste for a survey of the research on this issue.

Copyright © 2000. All rights reserved.

requirements, and the high costs of remaining legal, such as taxes, red tape, labor and/or environmental regulations.[25] The size of the shadow economy, then, may provide governments with indicators of potential policy flaws. That said, it is unlikely that the optimal level of taxation and regulation is that which will minimize all shadow economic activity.

One role of the state is to provide public goods, such as law and order—including contract enforceability—funded by tax revenue. But shadow economic activity escapes taxation, and, as a result, state tax revenues are lower than they could be. This in turn limits the ability of the state to provide such public goods and/or the quality of such goods suffers. There is a recursive component to this dilemma: as the provision of public goods suffers, fewer agents will have the incentive to remain in the official sector (not least of all because those who remain will shoulder an increasing percentage of the tax burden). As the official sector shrinks, so will government revenues, driving more agents to the shadow economy.[26] Oppressive tax and/or regulatory regimes which drive agents into the shadow economy will likely erode the size of tax rolls and thus hinder the provision of public goods. But even those non-oppressive business or tax environments which have active shadow economies must face the challenge of providing public goods with insufficient government revenues. All of this has further ramifications for the state, because without the rule of law (which includes the legal enforcement of contract obligations), access to capital is limited.[27]

Is Shadow Economic Activity Desirable?

Clearly, then, there is pressing need for study of the size and nature of the shadow economy. But is all shadow economic activity undesirable? Should we pursue policies to incorporate all shadow economic activity into the folds of the official economy?

Implicit in much of the literature on the shadow economy is the view that shadow activity *is* undesirable (even the terms "shadow" or "hidden" carry somewhat negative connotations). This is most evident with respect to the illicit sector: by making an activity illegal, a society attaches a stigma to that activity.

---

[25] Loayza, p. 1.
[26] Johnson, Kaufmann and Zoido-Lobatón, p.387.
[27] Loayza, p. 8.

Copyright © 2000. All rights reserved.

However, it is not certain that *all* shadow economic activity should be discouraged. As discussed earlier, an active shadow economy might imply the presence of inefficient economic policies. As such, activity which overcomes inefficiencies in the existing system is conceivably a good thing: de Soto proposes that non-compliant activity circumventing onerous regulations may be more efficient.[28] Along these lines, shadow economic activity is thought to have helped the transition towards market economies and to have mobilized entrepreneurial endeavors in transition economies.[29] Schneider finds that there is a positive stimulating effect of shadow economic activity on the official economy, as at least two-thirds of the income earned in the shadow economy is immediately spent in the official economy.[30] And the informal sector of the overall shadow economy is recognized in developing and even transition countries as a provider of fundamental goods and services.[31]

From some perspectives it has been argued that even the criminal sector generates benefits for a nation's economy. Wealth generated in the criminal sector may feed back into the formal, official economy. Maurer, discussing the situation of narcotics in Colombia, states the following:

> ...other sectors also profit—indirectly via a multiplier mechanism—from the employment, income, and demand created by the drug business. The purchasing power in these sectors has indirectly created hundreds of other employment opportunities

---

[28] Much of de Soto's case is formulated on the concept that Peru is governed by a set of laws that are relatively less efficient than those that guide the informal sector. For his description of the consequences of onerous laws, see de Soto pp. 158-172. For a description of proposed responses to this situation, see pp. 248-259.

[29] Aleksandar Štulhofer, "Between Opportunism and Distrust: Socio-Cultural Aspects of the Underground Economy in Croatia," in Edgar L. Feige and Katarina Ott, eds., *Underground Economies in Transition: Unrecorded Activity, Tax Evasion, Corruption and Organized Crime* (Brookfield, VT: Ashgate, 1999) p. 44; Svetlana Glinkina, "Russia's Underground Economy During the Transition," in Edgar L. Feige and Katarina Ott, eds. *Underground Economies in Transition: Unrecorded Activity, Tax Evasion, Corruption and Organized Crime* (Brookfield, VT: Ashgate, 1999) p. 104.

[30] Friedrich Schneider, "Stellt das Anwachsen der Schwarzarbeit eine wirtschaftspolitische Herausforderung dar? Einige Gedanken aus volkswirtschaftlicher Sicht," *Mitteilungen des Instituts für angewandte Wirtschaftsforschung* (IAW), Linz, 98, no. 1, cited in Schneider and Enste, p. 4.

[31] See, for example: International Labor Organization (ILO), *Trade Unions and the Informal Sector: Towards a Comprehensive Strategy*, mimeo, 1999, at http://www.ilo.org/public/english/dialogue/actrav/publ/infsectr.htm.

Copyright © 2000. All rights reserved.

> in legal sectors. Capital goods, such as agricultural equipment, chemicals as well as consumer goods and services (banking, legal advice) are offered increasingly in the remote coca cultivation areas. This 'trickling down' also represents a distribution of the drug profits.[32]

Such activity comes at a price: the state (or perhaps other states) faces potentially considerable expenditures in order to prevent criminal activity, such as police and military counter-drug units and operations, and society may face higher rates of crime, particularly violent crime. Also, because criminal activity escapes taxation, the state must provide the public goods of law and order with tax revenues that may be insufficient. Benefits, such as those described by Maurer, need to be weighed in the context of their political, economic and social costs.

Moreover, we should consider that while shadow economic activity has in many cases effectively served as a survival mechanism, or has assisted in the transition to a market economy, it has not done so without consequences. Glinkina notes that "the emergence and growth of a large underground economy poses serious concerns, which on balance dominate" and that:

> The effective management of the economy by the state is undermined. The taxation and foreign exchange base that any state needs to manage its economy is eroded by the rapid flight from the official to the underground economy. Macroeconomic stability is thus harder to attain and sustain. Further, the legitimacy of the overall legal and regulatory system is challenged.[33]

Ott provides an unequivocal assessment, though it is made in reference to transition economies:

> We find that in transition countries, which have a weak institutional structure for supporting market economic activity, underground economies pose a grave danger, that of undermining

---

[32] Eva Maria Maurer, "The Cocaine Business: Impact on Colombia's Economy and Possible Solutions," Eberhard Karls University, Tubingen, Germany (August 1992), cited in Marion Libreros, "Including Illegal Productive Activities in the National Accounts: The Case of the Illicit Drug Industry in Some Latin American Countries," paper presented to 24th General Conference of the International Association for Research on Income and Wealth (Lillehammer, Norway, 18-24 August, 1996) p. 14.

[33] Glinkina, p. 104.

Copyright © 2000. All rights reserved.

> the establishment of the rule of law that is increasingly seen as a necessary component of successful transition.[34]

While informal sector employment may provide employees with basic subsistence needs, it does so in the face of oppressive and/or unsafe working conditions; incomes usually at or below the poverty line; restricted access to state-provided social protection, training and social services; and frequent exploitation and infringement of workers' rights.[35]

The benefits derived from the shadow economy may or may not outweigh the costs associated with such activity, and the influence of shadow economic activity on growth and development remains unclear.[36] This is one area that calls for future research, particularly with respect to the informal sector, in which the direction of the impacts are ambiguous.

The Size of the Shadow Economy

Regardless of whether shadow economic activity is viewed as adverse or benign, there are clearly benefits to understanding the size and extent of this activity. Considerable work has been devoted to estimating the size of the shadow economy in countries around the world, using a variety of methods. Unfortunately, all of these methods are, to some degree, imperfect, and different methods appear to generate divergent estimates (for those countries that are common to multiple studies). The results of such research have come under intense scrutiny, with some observers suggesting that without first grounding the concept of the shadow economy in economic theory, efforts to generate a "magic number" for the size of the sector are meaningless.[37] We briefly discuss the methodological approaches found in the literature and explore relevant criticisms. We then present estimates for the size of the shadow economy in transition, developing and developed economies.

---

[34] Ott, p. 29.
[35] ILO (1999) p. 1.
[36] Štulhofer, p. 44; Glinkina, p. 104; Thomas (1999) p. 381.
[37] Thomas (1999) pp. 381-389.

Copyright © 2000. All rights reserved.

Methods of Estimating the Size of Shadow Economic Activity

Various qualitative and quantitative techniques exist to estimate the size of the shadow economy. In choosing among the myriad approaches to generating these estimates, we borrow from Feinstein, who states that "the debate about developing estimates of illegal or underground economic activity should primarily focus on practical issues related to how best to go about developing estimates that are as reliable as possible."[38]

Anecdotal and observational approaches to estimating the size of the shadow economy appear extensively in the literature. These mainly qualitative approaches draw from information sources including participant observation, structured and semi-structured interviews, and generally use single-firm data or surveys to collect descriptive statistics.[39] This qualitative approach is viewed as a starting point for inquiry and is useful for illustrating relevant issues and guiding future research.[40] In general, the qualitative or descriptive data used in these analyses are specific to the country or sector (generally the informal sector) being studied, and can often provide a wealth of contextual information for developing broader estimators. However, these studies do not typically produce externally valid estimates that can be compared to other studies of the same country, or reliably compared to estimates for other countries. Therefore, they have limited utility in formulating a broader understanding of the size of the shadow economy.

The most widely used methods of estimating the size of the shadow economy take one of two approaches: 1) measurement of self-reported participation in shadow economic activities; or 2) measurement of discrepancies between expected levels of demand or receipts (such as electricity, currency or tax revenue) and actual use of goods or services.

Census or survey approaches, typically limited to a single country, have been used to measure the extent to which individuals self-report (non)compliance with tax laws or unreported work

[38] Jonathan S. Feinstein, "Approaches for Estimating Noncompliance Examples from Federal Taxation in the United States," *The Economic Journal*, 109, no. 456 (June 1999) p. 360.

[39] See de Soto for what is generally regarded as the best observational study to date.

[40] Feige (1990) p. 993.

Copyright © 2000. All rights reserved.

outside the formal sector.[41] While these approaches, in theory, can capture all components of the shadow economy, their validity is limited by self-reporting bias and sampling error. These measurement issues can be overcome, as demonstrated by other types of self-report studies. In fact, the principal limitation may be the lack of comparable cross-national data due to the expense involved in data collection.

Alternatively, the discrepancy approach creates estimates of the shadow economy by examining discrepancies between reported activities and unreported activities, or forecasted demand and actual demand, which are then used to generate estimates of the overall size of the shadow economy. One discrepancy approach uses audits of taxpayers to measure individuals' unreported taxable income to generate ratios of unreported to reported income.[42] Another similar approach measures differences between individual expenditures and income or discrepancies between national expenditures and income.[43] These methods have certain limitations. Estimates may be drawn from a non-representative sample, such as examining only the behavior of taxpayers, when the behavior of those who *do not* pay taxes—those whose principle incomes are derived in the shadow economy. Or, the models assume that there is little or no error in the underlying estimates, which may be an overly-optimistic assumption.

Within the category of discrepancy estimators, two approaches currently predominate. The "currency demand" method[44] econometrically estimates the expected demand for currency with no shadow market, and compares this to the actual currency demand.[45] This estimation method is predicated on the notion

---

[41] See, for example, A. Portes, S. Blitzer, and J. Curtis, "The Urban Informal Sector in Uruguay: Its Internal Structure, Characteristics and Effects," *World Development*, 14 (1986). Also, Schneider and Enste cite a variety of single country surveys.

[42] Feige (1990); Edgar L. Feige, "A New Perspective on Macroeconomic Phenomena – The Theory and Measurement of the Unobserved Sector of the US Economy: Causes, Consequences and Implications," presented at the 93rd Annual meeting of the American Economic Association, 1980; Chris Simon and Ann Witte, *Beating the System: The Underground Economy* (Boston: Auburn House Publishing, 1982).

[43] Kerrick Macafee, "A Glimpse of the Hidden Economy in the National Accounts of the United Kingdom in VitoTanzi, ed., " *The Underground Economy in the United States and Abroad* (Lexington, MA: D. C. Heath, 1982) pp. 153-154. For a brief critique of this approach, see Thomas (1999) p. 382.

[44] Tanzi (1983) pp. 77-81.

[45] Similar methodology has also been employed in estimating global money laundering flows.

Copyright © 2000. All rights reserved.

that much of the illicit and informal sector operates in cash to avoid detection. This method, consequently, excludes non-cash shadow economic activity. Activities excluded may contain a non-trivial portion of informal or irregular economic activity (such as bartering). Also, the concept is predicated on the notion that there is some period during which no shadow economic activity occurred (this period is used as a baseline for comparison), though there is little reason to believe that such a shadow economy-free period exists.[46]

The other discrepancy approach measures the use of a physical resource (generally electricity), which is compared to an estimated expected level of use of that resource at a given GDP level.[47] This approach assumes that the ratio of electricity use and GDP can be econometrically estimated, and that deviations from expected levels are attributable to shadow economic activity. However, the precision of the approach is in question, since it assumes that all changes in resource consumption are due to shadow economic activity; the approach ignores potential changes in, for example, the use of electricity due to technology-driven improved efficiency in electricity-consuming activities.

Estimates of the size of the shadow economy are imperfect. This should come as no surprise, due to the difficulty inherent in estimating activity that is largely carried out by actors who wish to remain unnoticed and unrecorded. Tanzi notes that "we are still far from the time when the results of studies of the underground economy can have immediate consequences for policy or for the adjustment of various macroeconomic variables" though he does point out that "the higher the estimates, the greater should be the incentives on the part of the government to remove the factors that promote the underground economy."[48]

The harshest critic of existing estimation methods to date has been Thomas, who suggests that they "rely on heroic assumptions to justify the manipulation of certain numbers" and that the search for an estimate of the size of the shadow economy as a percentage of GNP:

---

[46] Thomas (1999) pp. 382-383.

[47] Alejandro Portes, "The Informal Economy," in Susan Pozo, ed., *Exploring the Underground Economy: Studies of Illegal and Unreported Activity* (Michigan: W.E. Upjohn, Institute for Employment Research, 1996); Johnson, Kaufmann and Zoido-Lobatón, in Schneider and Enste.

[48] Tanzi (1999) pp. 347, 340.

Copyright © 2000. All rights reserved.

> ...without providing economic theories to explain the determinants and structure of the black economy has led economists into a back alley in which the question of size has become an end in itself and more important issues have not been addressed.[49]

Estimates of the Size of Shadow Economic Activity in Transition, Developing, and Developed Economies

To provide a basis for discussion, we present estimates of shadow economic activity (grouped by transition, developing, and developed economies) drawn from Schneider and Enste's timely summary of the measures of shadow economic activity around the world. Acknowledging that estimates of the shadow economy are imprecise, the level and composition of shadow economic activity differs—not surprisingly—between and among transition, developing, and developed countries. Undoubtedly, differences in social, political and legal characteristics of countries explain to a great extent the size and composition of shadow economies, and why shadow economies differ by country type. Although much work has examined shadow economies—or specific components therein—in countries at different stages of development, there is a dearth of comparative work both: 1) *between* such country groupings; and 2) regarding the *distribution* of component activities (i.e., criminal, informal, irregular, and household) between and within overall shadow economies. Explanations for trends are anecdotal and/or speculative at this stage. As a result, in the discussion that follows, we offer very general insights from the literature. Further research should examine in much greater detail the similarities and differences of shadow economies between country types and also between, *inter alia*, countries with similar legal systems, similar tax regimes, and/or similar fiscal burdens. Perhaps more importantly, research should also explore the country-specific distribution of shadow economic activity between the component sectors.

The precision of the estimates presented below is still under discussion, and consequently, it may be useful to think not only about absolute measurements, but about the rank order of the sizes of shadow economies between countries. Also, as point-estimates, these figures do not capture the dynamic nature of changes to the size of shadow economies over time, which may be

---

[49] Thomas (1999) pp. 382, 387.

Copyright © 2000. All rights reserved.

of greater relevance. However, the estimates do give us a reference point for discussion.

Transition Economies

Estimates of the size of shadow economies in transition economies vary between seven and forty-three percent of GDP (see Table 1 below). For transition economies (and perhaps others), the size of the shadow economy may be an indicator of the level of economic and political liberalization and the success of macroeconomic stabilization,[50] which suggest that, based on these figures, the Czech Republic, Romania, and Slovakia are in the best shape.

Table 1

Estimates of the size of the shadow economy in various transition economies

Country	Size of shadow economy in percent of GDP, average over 1990-93
Central Europe	
Hungary, Bulgaria and Poland	20-28%
Romania, Slovakia and Czech Republic	7-16%
Former Soviet Union	
Georgia, Azerbaijan, Ukraine and Belarus	28-43%
Russia, Lithuania, Latvia and Estonia	20-27%

Source: Schneider and Enste (forthcoming).

In general, shadow economic activity in pre-transition economies appears to have been driven in part by the need to circumvent inefficient policies often found in command economies.[51] In the transition to a market economy, a tradition of shadow economic activity—what Feige refers to as the "legacy of

[50] Glinkina, p. 103.
[51] Feige and Ott, eds. (1999) p. 4.

Copyright © 2000. All rights reserved.

noncompliance"—and deficient state mechanisms for establishing and enforcing the rule of law seem to have reinforced the role of shadow economies.[52] Johnson, Kaufmann, and Zoido-Lobatón note that:

> ...in Eastern Europe and the Former Soviet Union since 1989, businesses have responded to politicization by going underground. Instead of registering their activities, managers prefer not to pay taxes and not to benefit from key publicly provided services, such as legal enforcement of contracts...most of the former Soviet Union has thus ended up in a 'bad' equilibrium with low tax revenue, high unofficial economy as a percentage of GDP, and low quality of publicly provided services.[53]

Kaufmann and Kaliberda report that unofficial (shadow) activity in the economies of the former Soviet Union and Central and Eastern Europe displays the following characteristics: a coexistence of state and non-state activities and enterprises in the unofficial economy; considerable visibility and size of unofficial activities; unofficial and unregulated activities, which are mainly nonviolent and non-criminal; activities that exist on a continuum in the official-unofficial activity spectrum (i.e., there is no sharp dichotomy between official and unofficial activities); social services and state subsidies are accessible to unofficial activities (i.e., virtually every activity and individual is within the social security net); and the unofficial economy is shallow (i.e., actors move between the two markets relatively freely, motivated by government-induced incentives).[54]

Not all observers agree, however. Glinkina suggests that at least in Russia, the composition of the shadow economy is very much dominated by criminal activity.[55] Taken together, it appears that the two components of shadow economies in transitioning economies tend to account for most of the shadow market: irregular and criminal activities. However, little

---

[52] Feige (1999) pp. 17-18.
[53] Johnson, Kaufmann and Zoido-Lobatón, p. 387.
[54] Kaufmann and Kaliberda, pp. 2-5.
[55] Glinkina, pp. 105-115.

Copyright © 2000. All rights reserved.

evidence currently suggests that one component is more responsible for shadow market activities than others.

Developing Economies

The shadow economy in developing countries appears in many cases to be quite large—much larger than in transition or developed economies—though the range between countries, thirteen to seventy-six percent of GDP, is also considerable (see Table 2 below).

Table 2

Estimates of the size of the shadow economy in various developing economies

Country	Size of shadow economy in percent of GDP, average over 1990-93
Africa	
Nigeria and Egypt	68-76%
Tunisia and Morocco	39-45%
Central and South America	
Guatemala, Mexico, Peru and Panama	40-60%
Chile, Costa Rica, Venezuela, Brazil, Paraguay and Colombia	25-35%
Asia	
Thailand	70%
Philippines, Sri Lanka, Malaysia and South Korea	38-50%
Hong Kong and Singapore	13%

Source: Schneider and Enste (forthcoming).

Of course, countries of the developing world comprise a large and varied group, and there is little reason to believe that their shadow economies share anything but the most general of attributes. Some of the most promising work relating to developing countries has focused primarily on Latin America; moreover, the literature on shadow economic activity in developing countries focuses almost exclusively on the informal component of the shadow economy, particularly the role of the informal sector in

Copyright © 2000. All rights reserved.

employment. The ability to draw broad conclusions about all developing countries (and, as noted, about all countries) and the overall shadow economy is limited.

That said, the informal sector component of the shadow economy appears to be of considerable importance to the economic activity of most, if not all, developing countries. The ILO reports that 80 percent of new jobs created between 1990-94 in Latin America were in the informal sector. Urban informal employment absorbs 61 percent of the urban labor force in Africa, and is expected to generate more than 93 percent of all additional jobs in the region in the 1990s. The informal sector also absorbed between 40 and 50 percent of the urban labor force in pre-crisis Asia.[56] Other observers tend to agree, as Jagannathan notes:

> Markets in [developing countries] do not fit the smoothly operating institutions assumed by standard neoclassical economics...Even in the poorest of developing countries, there are some markets, in what can be described as the organized sector, which function within the framework of civil laws and administrative regulations...Outside the pale of the organized sector is the unorganized sector, or informal sector, covering economic transactions of anywhere between 30 percent and 70 percent of the country's GNP...It covers most rural markets and the peripheral but growing urban informal sector.[57]

We cannot conclude, however, that the informal sector alone accounts for the lion's share of the overall shadow economy in all developing countries. There is every reason to believe that the criminal sector, such as cultivation, processing, and distribution of illicit narcotics; trafficking in goods/people; or, prostitution, is nontrivial in size in many developing countries. Colombia, for example, recently announced that it would include income from growing illegal drug crops in calculations of the nation's economy, given the size of such activity.[58] Bolivia, Peru and Colombia are the world's major producers of cocaine, and Afghanistan, Burma, Laos, Mexico, Pakistan, Thailand and Colombia are the world's

---

[56] ILO (1999).

[57] N. Vijay Jagannathan, *Informal Markets in Developing Countries* (New York: Oxford University Press, 1987), p.4.

[58] "Colombia Adjusts Economic Figures to Include Its Drug Crops," *New York Times*, 27 June 1999.

Copyright © 2000. All rights reserved.

largest producers of heroin.[59] These countries are most likely to have active criminal sectors.

The relationship between the shadow economy and the illicit drug trade is a complex one. It is typically believed that illicit drug production primarily stems from economic causes. Yet a preliminary study comparing the existence and extent of illicit drug cropping to both per capita GDP and the Human Development Index did not find any significant relationship.[60] To conclude that economic development is uniformly the appropriate response to reduce this area of the shadow economy may be overly simplistic.

Developed Economies

While the evidence suggests that there is a significant shadow economy even in developed countries—estimates range from eight to thirty percent of GDP (see Table 3 below)—the magnitude of the shadow economy is generally less than in transitioning or developing countries. Perhaps most surprising, however, is the fact that these estimates suggest that even in developed economies, the size of the shadow economy may be noteworthy.

Table 3

Estimates of the size of the shadow economy in various developed economies

Country	Size of shadow economy in percent of GDP, average over 1990-93
Greece, Italy, Spain, Portugal and Belgium	24-30%
Sweden, Norway, Denmark, Ireland, France, The Netherlands, Germany and Great Britain	13-23%
Japan, United States, Austria and Switzerland	8-10%

Source: Schneider and Enste (forthcoming).

[59] Central Intelligence Agency, "Major Coca and Opium Producing Nations: Cultivation and Production Estimates, 1994-98," mimeo, 1999, at http://www.odci.gov/cia/di/products/coca_opium/index.html.

[60] Graham Farrell, "A Global Empirical Review of Drug Crop Eradication and United Nations Crop Substitution and Alternative Development Programmes," *Journal of Drug Issues*, p. 28.

Copyright © 2000. All rights reserved.

The countries of southern Europe lead the pack, most likely due to what at least anecdotally appears to be the presence of large irregular sectors.[61] Scandinavian countries tend to have high tax rates, so it may be the intense regulatory and fiscal burden that drives individuals to the shadow economy.[62] Generally, it seems plausible that informal sector activity is of lesser importance in developed economies. This perhaps explains, in part, smaller shadow economy estimates than those for transition/developing countries.

Conclusions and Thoughts for Future Research

The shadow economy is an active component of the majority, if not all, of the world's economies, though its size appears to vary considerably between countries. Shadow economic activity should be included in national accounts statistics, to the extent possible, given the obviously incomplete picture generated by ignoring such activity. But it seems unlikely that robust estimators can be developed without a clear understanding of both: 1) the underlying economic theory describing how shadow economies come about; and 2) what drives the level of activity in each component sector.

It may be time to disaggregate the shadow economy into its component parts, and to focus research efforts on these sectors independently. For instance, household production is clearly a valid component of the shadow economy, but the underlying economic behavior is radically different than that associated with the criminal sector behavior of the illicit drug trade. Further, it appears that there is a natural split in the literature between the informal sector (specifically unregulated production) and the criminal sector (including drug trade, money laundering and tax evasion). Research describing the economic behaviors that drive these activities would provide an important framework for the future investigation of the magnitude and consequences of their effects. Only by studying individual components will we gain a

---

[61] See, for example, Bruno Contini, "The Second Economy of Italy," in Vito Tanzi, ed., *The Underground Economy in the United States and Abroad* (Lexington, MA: D.C. Heath and Company, 1982) pp.199-208.

[62] Schneider and Enste, p. 8; Ingemar Hansson, "The Underground Economy in a High Tax Country: The Case of Sweden," in Vito Tanzi, ed., *The Underground Economy in the United States and Abroad* (Lexington, MA: D.C. Heath and Company, 1982) p. 241.

Copyright © 2000. All rights reserved.

better understanding of them. Among the questions to be addressed are the following: How might we accurately measure the size of each of the sectors in specific countries? Can we find methods which employ accurate, obtainable data? Can we find methods which allow for the comparison of findings between countries? What are the impacts of such sector activity on development and real GDP growth? How might we reduce the level of activity in those sectors which are undesirable? And what is the country-specific distribution of shadow economic activity between the component sectors, and do the sectors have an impact on each other? In short, while the extent and the significance of the shadow economy are being increasingly recognized, knowledge is limited, and our portfolio of appropriate responses is in its infancy. ♚

Copyright © 2000. All rights reserved.