



Corruption's Reflection: Iraq's Shadow Economy

Strategic Insights, Volume IV, Issue 3 (March 2005)

by [Robert Looney](#)

[Strategic Insights](#) is a monthly electronic journal produced by the [Center for Contemporary Conflict](#) at the [Naval Postgraduate School](#) in Monterey, California. The views expressed here are those of the author(s) and do not necessarily represent the views of NPS, the Department of Defense, or the U.S. Government.

For a PDF version of this article, click [here](#).

Introduction

"There's a misleading tendency today to look at Iraq 's instability and violence and somehow think the country's economic problems are secondary and unrelated. But economic collapse, criminal activity, and political violence are intertwined. Unemployment feeds the insurgency which in turn throttles development, economic growth and job creation".

—Reinoud Leenders^[1]

Introduction

Accurate economic intelligence is critical in designing policies, strategies and investments for Iraq 's economic recovery. Unfortunately, very little is known about the country's economic progress over the last several decades,^[2] let alone the current situation. There are huge gaps in even the most routine data compiled by nearly every country. The International Monetary Fund, for instance, does not have any data on even the balance sheets of the central bank or the financial system since 1977, let alone national income accounts (missing since 1993), prices, interest rates, or the balance of payments.^[3] Today, the insurgency and persistent insecurity has made even the simplest data-gathering exercises almost impossible to conduct. The picture we have and are likely to have for some time will, by necessity, be derived from indirect indicators and inference.^[4]

The picture we have is an economy stagnating during the period from 1989 to 2003 with short periods of improvement coinciding with favorable developments in oil markets. It is safe to day that three successive wars and twelve years of economic sanctions resulted in a chronic long run deterioration of the economy, both in terms of its actual performance, and perhaps more importantly its ability to resume growth in the post-Saddam era. In addition, we also know that during the period of sanctions in the 1990s both industrial and agricultural production faltered for lack of inputs. Constraints on oil revenues caused even the government sector to contract during this period. As the government sector contracted in size and influence, large segments of the population were left to survive on their own wit and skill.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE MAR 2005		2. REPORT TYPE		3. DATES COVERED 00-00-2005 to 00-00-2005	
4. TITLE AND SUBTITLE Corruption's Reflection: Iraq's Shadow Economy				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School,Center for Contemporary Conflict,1 University Circle,Monterey,CA,93943				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 14	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

The rough picture we have of the present is one of an economy that probably contracted by about 35% in 2003, but began recovering somewhat in 2004—the final extent to which will be largely dependent on developments in the oil sector together with progress made towards democratization and overcoming the insurgency. At least 30% of the labor force is unemployed[5] with 60% depend on food rations to survive. A November 2004 survey[6] of 28,500 Iraqi families conducted by the government's Central Statistical Office (CSO) found the average monthly income of an Iraqi family was US\$127. Of those surveyed, only 15% had not completed elementary school, but just 9% had graduated from high school. Twenty percent of the respondents were illiterate.

Iraq's formal economy comprised of five main groups: (a) the oil sector, (b) government administrative/security ministries and agencies, (c) the unproductive, inefficient state-owned companies, (c) some privatized industrial/agricultural companies owned by former cronies of Saddam Hussein, (d) a group of large merchant/agricultural families who have somehow survived the old regime, and (e) the large foreign companies like Bechtel, Louis Berger, etc. and their workers under contract for reconstruction work. The rest of the economy is comprised largely of informal elements: (a) a looter class of entrepreneurs/smugglers—the so-called “Cats of the Embargo”[7] who sharpened their skills during the sanctions in the 1990s, and (b) a nebulous informal or “shadow” economy that exists in one form or another on the fringes of the more organized segments of the economy.

It is safe to say that the country's economic health will be a key determinant of its long run stability[8]. Factors such as the lack of commercial credit[9] together with uncertainty due to the security situation have largely brought investment in the formal segments of the economy to a halt[10]. Yet, from anecdotal accounts[11] there are indications that many areas of the shadow economy are prospering and, as during the period of sanctions, successfully adapting to the harsh environment.

By its very nature, however the informal or shadow economy's size in Iraq is hard to observe. Still there are indirect ways of measuring it. Keeping in mind the limited amount of economic data available even on the formal segments of the economy, the sections below provide an initial bit of economic intelligence on this potentially vital area of economic activity. In particular: (a) What are the main areas of activity comprising the shadow economy? (b) What factors are most important in effecting the overall size of this segment of the economy? and (c) As an initial step in estimating the current size of the country's current shadow economy, what was its extent toward the end of the Saddam Hussein era?

Definitional Issues

While definitions of the informal or shadow economy are somewhat arbitrary, most researchers[12] agree that it is largely comprised of small-scale producers and their employees, together with the self-employed producing goods as well as those engaged in commerce, transport and the provision of services. Street vendors are the most visible activities in the informal sector. However the output of small workshops and the self-employed who often work at home is likely more important in terms of the numbers involved.

The important characteristic of the sector is that its output has the potential to be sold either as intermediate goods and services to other producers or to final users. In this sense the activities of the sector are no different than those of the formal sector. That the shadow economy is not measured and included in the country's GDP figures stems largely from the fact that data on its activity is both difficult and expensive to collect. One important point to note concerning the informal sector is that in contrast to the criminal sector the goods and services being introduced are perfectly legal and that generally no laws are being broken in their production and distribution .

Conceptually, one can make a further delineation of shadow activities by distinguishing between purely legal activities and those which involve some illegality such as tax evasion, the avoidance of regulations (minimum wage, factory safety legislation, child labor laws, etc.) and social security fraud. The main characteristic of this group of activities is that while the goods and services that form the output are perfectly legal, the production and/or distribution of these goods and services involves some illegality. Size aside, these activities in particular represent difficult measurement problems since those involved in lawbreaking activities are unlikely to make this information available. Because of the difficulty in operationally delineating sub-components of Iraq 's shadow economy, this group of activities is simply defined to include all those purely non-criminal activities that, while generating income, are not included in the official national income accounts.

Operationally, there are several ways to contrast the shadow economy from its formal counterpart. The approach[[13](#)] taken by the International Labor Organization (ILO) stresses the nature of activities with the shadow economy characterized by:

- Ease of entry
- Reliance on indigenous resources
- Family ownership of enterprise
- Small Scale of operation
- Labor intensive methods of production and adapted technology
- Skills acquired outside the formal school system
- Unregulated and competitive markets

In contrast the formal sector is distinguished by:

- Difficult entry;
- Frequent reliance on overseas resources;
- Corporate ownership;
- Capital intensive and often imported technology;
- Formally acquired skills, often expatriate; and
- Protected markets (through tariffs quotas and trade licenses).

Instead of activities one could delineate the shadow and formal sectors based on individuals and whether or not they were wage earning (formal sector) or self employed (informal sector)[[14](#)]. On this basis formal income opportunities include:

- Public sector wages;
- Private sector wages; and
- Transfer payments – pensions, unemployment benefits.

While shadow income opportunities can be divided between legitimate activities...:

- Primary and secondary activities—farming, market gardening, building contractors and associated activities, self-employed employed artisans, shoe-makers, tailors;
- Tertiary enterprises with relatively large capital inputs—housing transport, utilities;
- Small-scale distribution—market operatives, petty traders, street vendors, food caterers, carriers;
- Other services—laundries, shoe shiners, barbers, photographers, vehicle repair and other maintenance workers, ritual services; and
- Private transfer payments—gifts and similar flows of money and goods between persons; borrowing; begging.

...and illegitimate activities:

- Hustlers, receivers of stolen goods; usury and pawn broking (at illegal interest rates) drug pushing, prostitution, smuggling, bribery, political corruption, protection rackets;
- Transfers—petty theft (e.g. pickpockets), larceny(burglary and armed robbery) embezzlement, gambling.

In sum, the formal sector includes government activity itself and those enterprises in the private sector that are officially recognized, nurtured and regulated by the state. Operations in the shadow economy are characterized by an absence of such benefits. Enterprises and individuals operate outside the system of benefits and regulations of government and thus without access to the formal credit institutions and sources of transfer of foreign technology.

In sum, many of the participants in this sector operate illegally, though pursuing economic activities similar to those in the formal sector. Illegality then is often not so much a consequence of the nature of the activity but instead derives from an avoidance of the government. Because of the difficulties involved in delineating the shadow economy from the informal economy, both terms will be used interchangeably in the analysis that follows.

Estimating the Size of the Informal Economy—The Saddam Era

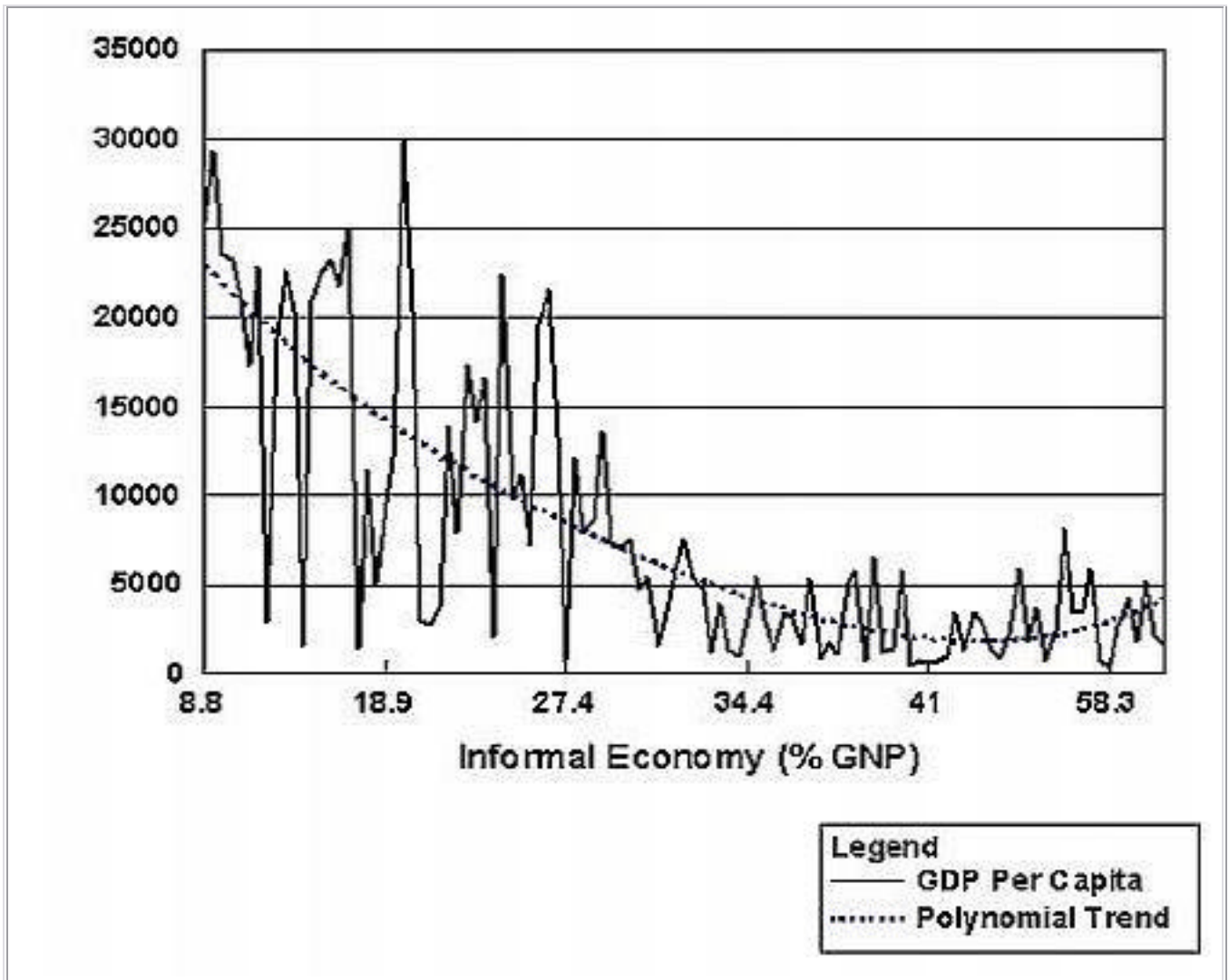
Conventional measures^[15] used to arrive at rough estimates of the share country's shadow economy in Gross National Product usually approach the problem by identifying either: (a) inconsistencies in the national income accounts and assuming these inconsistencies are caused by the informal economy^[16], (b) the difference between actual and expected holding of currency^[17], or (c) linkages with the use of physical inputs such as electricity^[18].

Data on the Shadow Economy

At the present time, the dearth of Iraqi data in each area rules out the use of these methods. In their place an alternative method, a statistical analysis of informal economies in a large sample of countries was undertaken. The attempt is to identify causal relationships between known institutional/economic variables and their associated shadow economies in various countries. Based on these relationships and the further assumption that despite its troubled history the Iraqi economy is roughly subject to the same forces as other economies around the world, the country's shadow economy is revealed.

A recent World Bank study^[19] and associated data set of the informal economy in 110 countries for the 1999/2000 period provided the input for this analysis. A preliminary examination (see [Figure 1](#)) of the data suggests there is a very rough association between the size of the informal economy and per capita income. In general, the pattern suggests the higher the per capita income the lower the informal economy as a share of GNP. However, the relationship is not linear. There is a fairly sharp decline in the informal economy moving from higher to lower per capita incomes. This pattern bottoms out at a per capita income of around \$5,000 with little increase in the informal economy at lower per capita incomes.

Figure 1: Per Capita Income and the Informal Economy



The non-linearity of the per-capita income/informal economy relationship suggests that the size of the shadow economy may be the result of a set of composite environmental factors such as the progress made towards a more open, equitable, transparent economy and/or governance institutions conducive to the spread of the formal economy. Fortunately, while there is a general dearth of economic data on the Iraqi economy, several widely used governance[20] and economic reform[21] data bases include a complete set of data for Iraq. The governance data set covers the period from 1996 to 2002, while the economic freedom data set spans the years from 1995-2003.

This data is highly relevant for identifying Iraq's shadow economy. The importance of institutions in affecting the pattern of national growth and development is increasingly recognized.[22] More importantly the impact that governance failures such as corruption have had on the development of a shadow economy have been extensively documented in the professional literature.[23]

In Iraq's case the break-down in governance under Saddam clearly contributed to the development of the shadow economy. This was particularly true during the period of sanctions in the 1990s. Several quotes from Braude vividly recreate the atmosphere of the time:

Iraq under Saddam and sanctions has produced a most bizarre Iraqi business culture. Effective business practices not only went unrewarded, they were effectively discouraged. For example advertising—when you advertise you show people—especially Saddam's gangs—that you are doing business. They will demand their cut from you and destroy you if you refuse. If you do not have someone to protect you, then you want no one to notice you.[\[24\]](#)

Legal and bureaucratic restrictions became increasingly irrelevant. You are supposed to incorporate, but if you don't know one will notice. I never registered my business. If you go to the Trade Office, everybody will know. So one way to keep a low profile is not to register your company. One year after opening my shop a government inspector came, and I just had to pay him a bribe.[\[25\]](#)

How widespread these types of government shakedowns were is anyone's guess. However if they did exist on a wide-scale level in other countries as well as Iraq, the data sets noted above have the potential for arriving at a rough estimate of the size of the shadow economy. Another advantage of the governance and economic freedom data sets stems from the fact that they can be extended to the present by making informed judgments concerning the progress made by Iraq first under the CPA and interim government.

Economic Freedom Data Set

The Heritage Index reflects the absence of government constraint or coercion on the production, distribution or consumption of goods and services. Stripped to its essentials, economic freedom is concerned with property rights and choice. To measure economic freedom the Heritage Foundation/Wall Street Journal Index takes ten different factors into account:

1. Trade policy;
2. Fiscal burden of government;
3. Government intervention in the economy;
4. Monetary policy;
5. Banking and finance;
6. Capital flows and foreign investment;
7. Wages and prices;
8. Property rights;
9. Regulation, and
10. Informal market

Implied in these measures is the notion that economic freedom also requires governments to refrain from many activities. They must refrain from actions that interfere with personal choice, voluntary exchange, and the freedom to enter and compete in labor and product markets. Economic freedom is reduced when taxes, government expenditures, and regulations are substituted for personal choice, voluntary exchange and market coordination. Restrictions that limit entry into occupations and business activities also retard economic freedom.

The index provides a framework for understanding many factors that likely contribute to the size of the shadow economy: (a) how open countries are to competition; (b) the degree of state intervention in the economy whether through taxation, spending or overregulation, and (c) the strength and independence of a country's judiciary to enforce rules and protect private property.

Over the 1995-1999 period Iraq scored very low on all aspects of economic freedom, averaging a score of 4.85 (with 5.0 the lowest possible score) for all ten measures noted above. The country averaged 5.0 in all areas except regulation where it scored 4.0, making it one of the least free countries of the world.

The Governance Data Set

While the ranking of countries on the basis of their relative progress in attaining improved governance is inherently subjective, the World Bank study noted above provides a set of rankings incorporating the full extent of our knowledge about this phenomenon. More precisely, the World Bank data set presents a set of estimates of six dimensions of governance covering 199 countries and territories for 1996, 1998, 2000 and 2002. Country scores are scaled from positive (above the norm) to negative (below the norm values).

Voice and Accountability. This variable measures various aspects of the political process, civil liberties and political rights. These indicators measure the extent to which the citizens of a country are able to participate in the selection of governments. Also included in this variable are indicators measuring the independence of the media. As might be imagined, Iraq scored very low in this area, averaging a score of -1.788 over the 1996-1998 period.

Political Stability and Absence of Violence. This governance cluster combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown. Again Iraq's score of -2.601 was one of the lowest.

Government Effectiveness. This variable combines aspects of the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies. Iraq's average score for the period was again quite low, -1.684.

Regulatory Quality. This aspect of governance is more focused on the policies themselves. It includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development. Iraq had one of the lowest scores in this area, -3.009.

Rule of Law. Included in this dimension of governance are several indicators which measure the extent to which the citizens of a country have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. Iraq's score in this area was -1.583.

Control of Corruption. This dimension of governance measures perceptions of corruption. By this measure corruption is defined as the exercise of public power for private gain. It is often a manifestation of a lack of respect of both the corrupter and the corrupted for the rules which govern their interactions, and hence represents a failure of governance. Rampant corruption in Iraq during this period earned the country a score of -1.315.

To put Iraq's performance in governance and economic freedom in context, it is instructive to examine how the country compares with the situation in other nations, especially with regard to those having relative large shadow economies. In this regard, a rough examination of several groupings of countries based on their mean averages on each one of the governance/economic freedom indices, suggested the greatest environmental differences occurred between countries when grouped above and below an informal economy share of GNP of 20% (See [Table 1](#)).

The gap between the high (greater than 20% of GNP) and low (less than 20% of GNP) informal economy countries is particularly evident in the main dimensions of governance (lower values in [Table 1](#) represent a worsening of governance). Differences are especially great in the areas of control of corruption, government effectiveness and political stability, with the high informal economies consistently scoring well below that of the low informal growth countries.

While the gaps between the high and low informal economy countries are not as great in the economic freedom area, they are still fairly consistent (higher values in [Table 1](#) for these variables signifies a worsening of economic freedom) with the higher informal economy countries attaining less progress in most of these areas, especially trade policy, monetary policy, banking and finance, property rights and of course the informal market.

Quantitative Estimate of Iraq's Shadow Economy

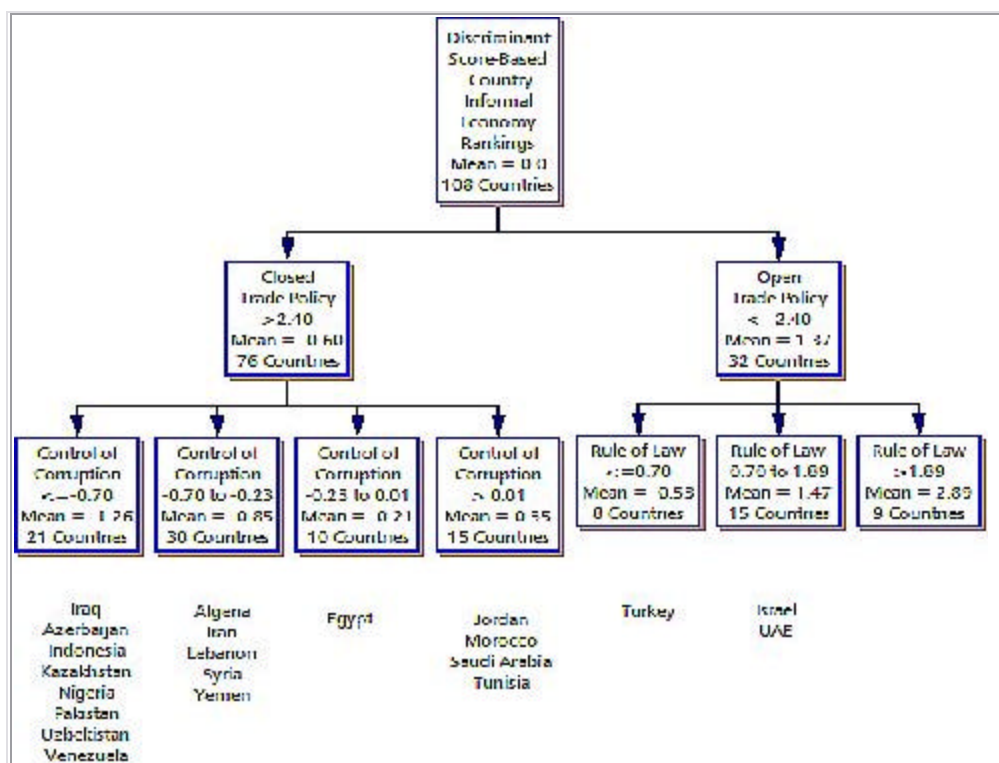
To determine which of the governance/economic freedom indices were statistically significant in defining the high and low informal economy environments, a Discriminant Analysis[26] (or profiling) of the high and low shadow economy groups was undertaken using all of the governance and economic freedom indices as discriminating (independent) variables. The results were highly significant with a clear delineation occurring between the two groups of countries. Somewhat surprisingly, three governance measures (in order of importance): (1) control of corruption, (2) voice and accountability, and (3) political stability were the only variables statistically significant in forming unique environments delineating the high shadow economies from those with a relatively small amount of activities performed by shadow firms/entrepreneurs.

Using the three governance variables to profile the two groups of shadow environments, 88.6% (70 of 79 countries) of the greater than 20% GNP countries were correctly classified in the high informal country group, while 75.0% (22 of 29 countries) of those countries with an informal economy less than 20% of GNP were correctly classified in the low informal country group.

Although no data on Iraq 's informal economy exists, on the basis of its governance and economic freedom scores, the country fits the profile of a high informal economy (99.7% chance of placement in this group) country. Given Iraq 's level of corruption, voice and accountability and political stability, the model predicts Iraq 's informal economy to have been around 35% of GNP toward the end of the 1990s.

A useful index (technically the first discriminant function) produced by the Discriminant Analysis ranks countries in terms of the relative attainment of the environment defined by the three governance measures: (1) control of corruption, (2) voice and accountability,[27] and (3) political stability. As one moves from lower to higher values for this variable, the chance increases of being classified as a low informal economy country. A classification analysis[28] of this governance based dimension provides a clear picture of the factors that statistically groups countries into clusters of similar environments as one progresses (left to right in [Figure 2](#)) from the highest probability of a large informal to the lowest probability.

Figure 2: Classification Analysis: Informal Economy Country Groupings Along the Governance Dimension (1998-99)



Using the governance and economic freedom data sets as independent variables, it is apparent that per capita income does not play a direct role in accounting for the size of the informal economy. Instead, the country groupings are defined in terms of the progress made in opening up to the world economy. Those countries that are relatively closed and inward oriented (like Iraq at this time) tend to have large informal economies (proxied by the mean score in the various boxes), while those countries open to the pressures of globalization have much smaller informal economies.

For the countries with high informal economies, those who have gained more control over corruption have significantly lower informal economies. Note that the relationship is progressive as one moves from little control of corruption (negative index) to higher control of corruption, there is a steady improvement in the index related to a reduction in the size of the shadow economy.

On the other hand, the relatively open countries have lowered their informal economies through improved rule of law. Again, a steady progressive relationship exists whereby improved rule of law is associated with a steady reduction in the size of the shadow economy.

As might have been expected, Iraq fell in the lowest group of countries in terms of the highest probability of a large informal economy. The profile of these countries is an inward oriented trade regime with high levels of corruption (See [Figure 2](#)). Other countries in this group included oil-based rentier economies such as Nigeria, Venezuela, Indonesia and Azerbaijan.

Summing up, the analysis presented above suggests that the size of the shadow economy is largely controlled by factors related to governance. Corruption stands out as the key determinant of the informal segments of the economy, with countries having gained little control over corruption usually having the highest probability of possessing a large informal economy. In turn,

corruption appears to be more of a factor in those countries relatively closed to the globalization process.

This finding was confirmed with a regression analysis. Here the purpose was to determine which individual governance/economic freedom variables were statistically significant in affecting the size of the informal economy. A by-product of this analysis was to obtain a precise estimate of Iraq's informal economy around the year 2000.

In addition to per capita income the ten economic freedom variables and six governance indices, several dummy variables were added to test for particular structural differences across countries. These included a variable signifying whether a country was a member of the United States' Greater Middle East Initiative (GMEI), whether a country was an oil based rentier state, and, finally, whether or not it could be classified as a developed country. The estimated equation found three variables statistically significant in affecting the size of the informal economy: (a) control of corruption, (b) whether a country was a GMEI country, and (c) progress made in building a sound banking and finance sector. These variables explained over 50% of the observed variation in the size of the informal economy across countries.

Most importantly, the analysis confirmed that Iraq's informal economy was around 35% of GDP in the year 2000. Substituting Iraq's values for the three independent variables in the regression equation resulted in a prediction of 35.86% of GNP for the size of the country's shadow economy. The high standardized coefficient associated with control of corruption (0.842) as opposed to 0.193 and 0.206 for Greater Middle East member country and banking and finance development respectively suggests that this is the dominant element in explaining the relative size of the informal economy across countries.

Finally, Schneider and Enste^[29] have calculated the likely shadow labor force in a group of developing countries for 1998. They present values of the shadow economy labor force in absolute terms, and as a percentage of the official labor force under the assumption that the shadow economy in rural areas is at least as high as in the cities (where the original surveys were taken). While Iraq does not appear in their sample, there is a close relationship between the size of the shadow economy and its associated labor force. Using the 35 percent of GNP figure for Iraq's shadow economy derived above produces an estimate of a shadow labor force in Iraq at this time (1998) of 68.3 percent of the total labor force. This is equivalent to a shadow labor force of 32.2 percent of the total population.

Assessment

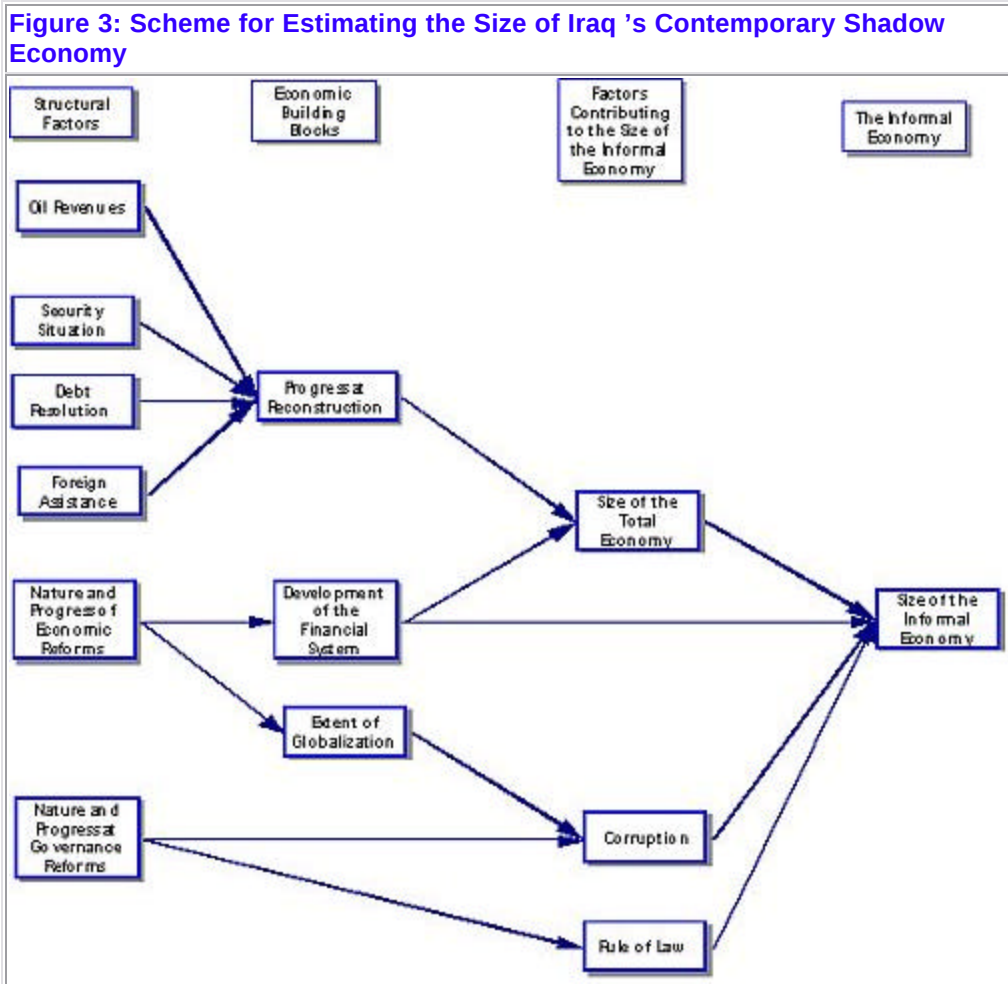
The findings noted above and the analysis that underlies them provide useful insights into the factors that need to be examined (summarized in [Figure 3](#)) in deriving a measure of the current state of the informal economy in Iraq. Clearly a great deal more needs to be known about relationships at the sectoral level—conditions in agriculture for example, the factors impeding small and medium sized (SME) businesses, the role of women in household production, the development of survival social networks and so on.

At this point, given the insurgency and uncertainty surrounding political developments it is safe to say that large segments of the population have reverted to the survival relationships characteristic of the period of sanctions in the 1990s. In one sense the situation is similar to that of the 1990s—a central government incapable of acquiring popular support and of exerting control over the economy^[30]. An eerie passage from Braude captures the mood of that time:

But despite the pervasiveness of Saddam's secret police and network of informants, the regime could never keep tabs on everyone in its sprawling cities. With the onset of sanctions, which made a good deal of legitimate business unprofitable and many standard goods unattainable in

the lawful market, a sprawling black market and a minor epidemic of organized crime evolved. ...The flipside of intimidation became lawlessness, as a muted anarchy came to underlie the thin veil of a highly surveilled society. Legal and bureaucratic restrictions became increasingly irrelevant.[31]

Daily news coming out of Iraq of economic mismanagement,[32] vast black markets in gasoline,[33] increased crime, and shortages of critical inputs[34] do not bode well and suggest that if anything the current size of the shadow economy is considerably larger than in the late 1990s. Another ominous sign[35] is a recently released index of corruption for 2004 (see [Table 2](#)). The prestigious Transparency International Corporation ranks Iraq as the most corrupt country in the Middle East . The country's current ranking is 129 th out of 145 nations worldwide.



For more insights into contemporary international security issues, see our [Strategic Insights](#) home page.

To have new issues of *Strategic Insights* delivered to your Inbox at the beginning of each month, email ccc@nps.edu with subject line "Subscribe". There is no charge, and your address will be used for no other purpose.

References

1. Quoted in "[Reconstructing Iraq: Report ICG](#)," *electroniciraq.net*, September 2, 2004.
2. Perhaps the best accounts available have been provided by Aabbas Alnasrawi. See his *Iraq's Burdens: Oil, Sanctions and Underdevelopment* (Westport, Conn: Greenwood Press, 2002), and *The Economy of Iraq: Oil, Wars, Destruction of Development and Prospects, 1950-2010* (Westport, Conn: Greenwood Press, 1994).
3. Steve Hanke and Matt Sekerke, "[Monetary Options for Postwar Iraq](#)," *CATO Institute Foreign Policy Briefing*, September 22, 2003.
4. A good survey of the standard methods is contained in Shu-Heng Chen and Paul Wang eds, *Computational Intelligence in Economics and Finance* (New York: Springer-Verlag, 2003).
5. "[Minister Puts Unemployment at 38%](#)," *EIU ViewsWire*, July 15, 2004.
6. Results summarized in [Economist Intelligence Unit, Iraq Country Report](#), December 2004, p.31-7.
7. Joseph Braude, *The New Iraq* (New York: Basic Books, 2003), p. 120.
8. Edward Wong, "[In Anger Ordinary Iraqis Are Joining the Insurgency](#)," *New York Times*, June 28, 2004, p. 9.
9. Cf. Robert Looney, "Building from Scratch: The Transformation of Post-War Iraq's Financial System," *Middle East Policy* (forthcoming 2005).
10. "[Unemployment Caused by Insecurity and Vice-Versa](#)," *IRINnews.org* (November 29, 2004).
11. For example: David Hecht, "[Why War Zones Love Monopolies](#)," *Fortune* 149:11 (May 31, 2004), p. 66; Jeffrey Fleishman, "[In the New Baghdad, Viagra a Hot Sell](#)," *Los Angeles Times*, June 17, 2004 ; Stanley Reed, "[The Kurds Embrace a New Cause: Rivals are Uniting Behind Economic Development in the Northern Iraqi Region](#)," *Business Week*, January 12, 2004 , p. 48.
12. The standard works in the area include: Friedrich Schneider and Dominik H. Enste, *The Shadow Economy: An International Survey* (Cambridge: Cambridge University Press, 2002); J.J. Thomas, *Informal Economic Activity* (Ann Arbor: The University of Michigan Press, 1992), and for the Middle East region, Richard Lobban Jr., *Middle East Women and the Informal Economy* (Gainesville, Florida: University Press of Florida, 1998).
13. *Towards Full Employment: A Program for Colombia* (Geneva: International Labor Organization, 1970), *Employment Incomes and Inequality: A Strategy for Increasing Productive Employment in Kenya* (Geneva: International Labor Organization, 1972).
14. J. Weeks, "Policies for Expanding Employment in the in the informal urban sector of Developing Economies," *International Labor Review* 111 (1975), pp. 1-13.
15. Cf. Brudo Frey and Hannelore Weck, "[Estimating the Shadow Economy: A 'Naïve' Approach](#)," *Oxford Economic Papers* 35:1 (March 1983), pp. 23-44.

16. K. MacAfee, "A Glimpse of the Hidden Economy in the National Accounts," *Economic Trends* 136:1 (1980), pp. 81-87.
17. Edgar L. Feige, "[Defining and Estimating Underground and Informal Economies: The New Institutional Economics Approach](#)," *World Development* 18:7 (1990), pp. 989-1002.
18. Daniel Kaufmann and Aleksander Kaliberda, "[Integrating the Unofficial Economy into Dynamics of Post Socialist Economies: A Framework of Analyses and Evidence](#)," *Policy Research Working Paper* (Washington: World Bank, 1996).
19. Friedrich Schneider, "[Size and Measurement of the Informal Economy in 110 Countries Around the World](#)," *Policy Research Working Paper* (Washington: World Bank, July 2002).
20. Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi, "[Governance Matters III: Governance Indicators for 1996-2002](#)," (Washington: World Bank, June 30, 2003).
21. [Index of Economic Freedom Rankings](#) (Washington: Heritage Foundation).
22. Dani Rodrik, "[Getting Institutions Right](#)," Kennedy School of Government (Cambridge, MA: Harvard University, April 2004).
23. E. Friedman, S. Johnson, D. Kaufmann and P. Zoido-Lobaton, "[Dodging the Grabbing Hand: the Determinants of Unofficial Activity in 69 Countries](#)," *Journal of Public Economics* 76 (2000), pp. 459-493; S. Johnson, P. Kaufman and P. Zoido-Lobaton, "[Regulatory Discretion and the Unofficial Economy](#)," *American Economic Review* 99:2 (May 1998), pp. 387-392.
24. Joseph Braude, *Op. Cit.*, p. 116.
25. Joseph Braude, *Op. Cit.*, p. 118.
26. For a description of this technique see [SPSS Base 10.0 User's Guide](#) (Chicago: SPSS Inc., 1999.)
27. It should be noted that the sign of this variable in the discriminant function is negative, suggesting that in the context of improved control over corruption and increased political stability, improved voice and accountability increases the size of the informal economy.
28. A description of this technique is provided in [Answer Tree 3.0 User's Guide](#) (Chicago: SPSS Inc., 2001).
29. Frederich Schneider and Dominik Enste, *Op. Cit.*, Chapter 5.
30. Early on, Oxford Analytica warned of retrogression back to the 1990s. See "[Saddam's 'Shadow State' Defies Democracy](#)," *Oxford Analytica*, May 15, 2003.
31. Braude, *Op. Cit.*, pp. 117-118.
32. Sabri Zire Al-Saadi, "[Iraq's Post-War Economy: A Critical Review](#)," *Middle East Economic Survey* XLVII:14 (April 5, 2004.)
33. "Iraq: Report of Continuing Fuel and Electricity Shortages," [Noozz.com](#) (January 23, 2005).

34. Dan Murphy, "[In Iraq, a Winter of Discontent](#)," *Christian Science Monitor*, January 10, 2005.

35. Also see Adam Davidson, "Still on the Take: The U.S. Has Not Ended Iraq's Culture of Corruption," *Los Angeles Times*, May 2, 2004, p. M.1.

[CCC Home](#)

[Naval Postgraduate School](#)

Rev. 03/04/2005 by [CCC](#)
[Webmaster](#)