



Tax Administration and Transaction Costs in Egypt

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Working Paper No. 33

November 1998

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An earlier version of this paper was presented at the Mediterranean Development Forum (MDF) 1998 in Marrakech. The author is grateful to Ahmed Galal and Samiha Fawzi for their comments on earlier drafts of this paper that significantly improved this version. She would also like to express her appreciation to those who participated in the 'Role of the State' Conference which was held in Beirut in February 1998 and the MDF Cairo meeting which was held in June 1998 for their useful comments and suggestions. The author would also like to thank Marwa Kassem for diligent research assistance.

Abstract

This paper analyzes two problems with tax administration in Egypt: tax evasion and taxpayers' high transaction costs in tax payment. The paper evaluates the magnitude of each problem in a comparative cross-country context. Empirical analysis suggests that tax evasion in Egypt is consistent, to a great extent, with the country's economic and institutional conditions. Correspondingly, tax obstacles to private business, again similar to other countries, are ranked as the primary obstacle to doing business in Egypt. The paper then examines the tax payment 'contract,' or relationship between taxpayers and the tax authority in Egypt, and discusses three weaknesses in this relationship: the importance of private information, moral hazard and adverse selection. A critical element in tax administration reform in Egypt must focus on eliminating these weaknesses.

ملخص

تتناول هذه الورقة بالدراسة والتحليل مشكلتين مرتبطتين بإدارة الضرائب في مصر: التهرب الضريبي من ناحية، وارتفاع تكلفة تعامل الممولين مع الجهاز الضريبي من ناحية أخرى. كما تقدم أيضاً تقييماً لحجم هاتين المشكلتين في مصر مقارنة ببعض من الدول المتقدمة والنامية. وقد أفصحت الدراسة العملية عن أن مشكلة التهرب الضريبي في مصر تتناسب إلى حد كبير مع الأوضاع الاقتصادية والمؤسسية السائدة. كما أوضحت أيضاً أن نظام تحصيل الضرائب يأتي على قمة المعوقات المؤسسية التي يعاني منها القطاع الخاص المصري وهو ما يتفق إلى حد كبير مع نتائج الدراسات التطبيقية التي تمت في عدد من الدول المتقدمة والنامية. كذلك تلقى الدراسة الضوء على ثلاث من مواطن الضعف الأساسية في العلاقة بين الممولين ومصلحة الضرائب المصرية وهي العلاقة التي اصطلح على تسميتها عقد الوفاء بالضرائب (tax payment contract). وتتمثل نقاط الضعف في: أهمية البيانات الخاصة (importance of private information)، مشكلة المخاطرة الأدبية (moral hazard) والاختيار العكسي (adverse selection). وتنتهي الدراسة إلى أن محاولة إصلاح نظام الإدارة الضريبية في مصر يجب أن يبدأ بمعالجة مواطن الضعف المشار إليها

I. Introduction

As Egypt becomes a more private sector-led economy, the need to study the principles underlying tax collection becomes apparent. Tax collection methods that were suitable for an economy dominated by public sector firms are inadequate for the current and future stages of economic development. Further evidence of the need to modify Egypt's tax collection process is the general perception that taxpayers are increasingly evading accurate and prompt tax payment. The need for reform is also apparent in the 250,000 tax cases pending in Egyptian courts and the need for the recent Reconciliation Law that allows taxpayers and the tax authority yet one more avenue to settle their disputes. Meanwhile, over 70 percent of documented taxpayers do not file taxes by the deadline.

Two issues raise heated debate on tax administration in Egypt: tax evasion and the difficulty taxpayers face in dealing with the tax authority. Depending on whom is being asked, one of the two issues will be declared as the primary weakness behind the poor performance in tax collection. Each side when pressed, however, will acknowledge the other party's complaints.¹

The purpose of this paper is to analyze problems of tax administration from a contracting perspective. This analysis argues that both extensive tax evasion and the discretionary nature of the tax authority's interaction with the business community are symptoms of a relationship, or 'contract', that does not clearly define the rules, roles and consequences of different parties' types of behavior. This results in uncertainty, discretion, disputes, and negotiations. This negative relationship raises the transaction costs of tax collection/payment. Using the contracting literature on tax administration, reform must focus on aligning incentives of various parties instead of 'policing' parties every step of the way.

At the beginning, it is necessary to define the concepts: 'contract' and 'transaction costs'. Contract, in economics, refers to an agreement that parties enter into to change their behavior in ways that are mutually beneficial. These agreements may encompass the sort of actions each is to take, payments from one party to another, the rules and procedures they will use to decide matters in the future, and the

¹ There are third parties that are involved in that transaction. For instance, public and private entities required to implement the system of additions and deductions bear the cost of keeping records and withholding and submitting these funds. This paper does not examine these issues, in part, because the system of additions and deductions itself is under reconsideration.

behavior that each can expect from the other (Milgrom and Roberts 1992, p.127). A contract does not have to be a formal legal document; it can be represented by tradition, a verbal agreement or even norms that define the rights and responsibilities of the parties involved. Hence, a contracting perspective on analyzing tax administration in Egypt looks at the terms of the relationship between the tax authority and taxpayers. It identifies the legal incentives to behave in a specific manner and this contracting perspective evaluates whether the incentives are compatible with the efficiency and effectiveness of the government's tax collection function.

Second, the textbook definition of transaction costs, describes this as the costs that relate to the time, effort and other resources needed to search out, negotiate and consummate an exchange. This definition, however, neglects the rich interaction between the concept of transaction costs and the contract literature. Variations in organizational structure and institutions represent different contracts which in turn have an impact on the efficiency of any economic transaction. Although the origin of transaction costs has been related to examining economic efficiency in the zero-transaction costs state (Coase 1960), a growing argument of the empirical literature in this area focuses on the real world of positive transaction costs. This recent literature examines organizational structure within a public or private body or institutional structure outside an organization including political institutions, laws, customs, and norms, and how various structures are associated with different levels of positive transaction costs.² Coase (1972, 1984, 1992) argues that this approach focuses legitimate attention on the study of feasible organizational alternatives. This paper takes this comparative approach.

Based on this perspective, this paper poses four specific questions to analyze tax evasion and the business sector's complaints of high transaction costs in tax payment:

1. How does tax evasion in Egypt compare to other countries?
2. Are taxpayers' transaction costs higher in Egypt than in other countries?

Answers to these two questions give a sense of the magnitude of these two problems, as perceived by both taxpayers and the tax authority in Egypt. The discussion then addresses the following two questions:

² See for example, Klein, Crawford, and Alchian (1978); Klein (1988); Masten (1984); Williamson (1976); Monteverde and Teece (1982); Klein and Leffler (1981); Leffler and Rucker (1991).

3. What are the main sources of transaction costs in tax administration?
4. How can transaction costs in tax administration be reduced?

These questions help to identify possible weaknesses in the tax payment-collection relationship and to explore remedies for the current system.

This paper is organized as follows: Section 2 estimates the magnitude of the tax evasion problem in Egypt. Section 3 discusses the business community's perspective on tax administration issues as a major institutional obstacle to private sector activity in Egypt. Section 4 uses the literature on contracting to give insights into the main sources of transaction costs in tax administration, both for the business community and the tax authority, and identifies various 'contractual' weaknesses in Egypt's tax administration system. Section 5 considers policy recommendations to reduce transaction costs in Egypt's tax administration. Section 6 summarizes the discussion.

II. How Does Tax Evasion in Egypt Compare to Other Countries?

Estimates of tax evasion abound in the media, government circles and the business community. These estimates vary widely; some sources indicate that tax evasion amounted to £E3.6 billion in 1988/89,³ others argue that it was £E8 billion,⁴ while still others estimate that it reached £E80 billion⁵ in 1996 (*Al-Ahram Al-Iktisadi* 26/5/97). It is difficult to judge the accuracy of these figures, therefore this paper's analysis evaluates the magnitude of tax evasion in Egypt by comparing it to tax evasion in other countries.⁶

Descriptive Statistics

To evaluate the extent of tax evasion in Egypt it is necessary to look first at the size of tax revenue. Limited tax revenue can be a preliminary sign of prevalent tax evasion. Tax revenue, however, must be relative to some measure of the country's size, usually GDP. Table 1 shows Egypt's tax revenue/GDP ratio in comparison with other countries.

³ Based on the estimated cost of underreporting taxable income only.

⁴ Documented unpaid taxes as of June 1996.

⁵ Applying a 42 percent income-tax rate to an estimated £E190 billion informal economy.

⁶ Other estimates of tax evasion in Egypt rely on the number of tax evasion cases detected. In 1995, there were 967 cases worth £E7.2 billion (*Al-Ahram* 1/1/96).

Table 1. Distribution of Tax Revenue: CrossCountry Comparison (as a percent of GDP)

Country	Year	Tax Revenue	Taxes on Income, Profits and Capital Gains of which:			Taxes on Goods and Services (Total)	Taxes on International Trade
			Total	Corporate	Individual		
Mediterranean Countries							
Egypt	1995/96	17.10	7.50	6.80	0.70	6.00	3.50
Cyprus	1995	26.50	6.30	1.80	4.10	9.20	2.60
Israel	1995	35.40	15.90	3.10	11.40	13.80	0.20
Lebanon	1995	15.00	2.50	N/A	N/A	2.20	8.80
Morocco	1995	22.00	5.80	1.90	2.80	10.90	4.30
Jordan	1995	16.50	3.30	2.00	1.30	7.10	6.10
Turkey	1995	14.20	5.70	1.40	4.30	7.20	0.70
Tunisia	1995	25.10	4.80	N/A	N/A	6.90	7.70
ASEAN Member Countries							
Korea	1995	17.70	6.40	2.50	3.90	6.50	1.30
Indonesia	1994/95	12.60	7.40	6.10	1.00	4.00	0.80
Malaysia	1995	20.30	9.40	6.50	2.90	6.60	3.00
Philippines	1994	16.00	5.40	2.30	2.20	4.90	4.60
Singapore	1995	16.20	6.60	4.60	2.00	5.70	0.70
Thailand	1995	17.70	6.00	3.90	2.10	7.60	3.20
Selected Latin American Countries							
Argentina	1995	12.90	1.30	0.90	0.40	4.70	0.67
Bolivia	1996	10.40	0.40	0.40	N/A	6.20	1.04
Brazil	1993	30.30	3.89	0.93	N/A	4.80	0.45
Chile	1996	22.40	4.14	N/A	N/A	10.34	2.10
Colombia	1993	14.60	5.47	N/A	N/A	6.11	1.24
Mexico	1995	15.70	4.25	N/A	N/A	8.52	0.63
Peru	1996	13.50	2.60	N/A	N/A	7.50	1.50
Uruguay	1996	37.30	5.30	2.80	2.35	13.10	1.40
Venezuela	1996	20.50	7.84	N/A	N/A	5.70	1.42
Selected Sub-Saharan African Countries							
Cameroon	1995	10.62	1.43	1.43	0.00	2.82	2.75
Cote d'Ivoire	1995	17.83	4.02	1.81	1.37	7.54	6.28
Ghana	1995	15.03	3.63	2.07	1.07	6.65	4.75
Nigeria	1995	7.00	1.40	0.00	1.40	5.60	N/A
Senegal	1995	13.59	3.09	0.85	1.97	3.44	6.41
South Africa	1995	24.86	13.67	3.42	10.24	9.61	1.26
Zaire	1995	4.06	0.97	0.32	0.31	0.96	1.20
Zambia	1995	15.50	4.90	1.09	3.81	5.46	4.63
Industrialized European Countries							
Austria	1995	32.73	6.94	1.31	5.63	8.34	0.14
Belgium	1992	41.96	14.38	1.78	12.60	10.69	N/A
Denmark	1995	35.24	14.72	1.81	12.91	16.43	0.02
Finland	1995	27.61	8.98	1.37	7.61	13.38	0.05
France	1995	38.00	7.12	1.63	5.50	11.44	0.00
Germany	1993	32.79	5.25	0.92	4.34	8.58	N/A
Greece	1994	19.94	5.24	1.99	3.25	13.29	0.01
Ireland	1994	36.04	15.18	3.39	11.79	12.18	1.82
Italy	1992	38.85	14.63	2.07	12.57	11.89	0.00
Netherlands	1995	44.88	12.10	3.43	8.67	10.96	N/A
Sweden	1995	36.42	4.90	3.31	1.59	13.04	0.29
United Kingdom	1995	33.53	13.05	3.35	9.70	11.84	0.02
Pacific Countries							
Japan	1993	17.99	7.75	2.67	5.08	3.09	0.27
Australia	1995	22.37	15.53	3.88	11.65	5.26	0.76
New Zealand	1991	33.26	19.79	2.41	17.38	9.67	0.72

Sources: *International Financial Statistics*, 1997 (Selected Latin American Countries); *Government Finance Statistics*, 1997 (Selected Latin American Countries); International Monetary Fund WP/97/107, 1997 (Selected Sub-Saharan Countries); Abdel-Rahman, A.M., 1997 (Mediterranean Countries and ASEAN member countries).

In Egypt, tax revenue was 17 percent of GDP in 1995, while it ranged from 4 percent for Zaire to 45 percent for Israel. Member states of the Association of Southeast Asian Nations (ASEAN), to whom Egypt is often compared, exhibit a narrower range for tax revenue/GDP ratio (from 13 percent for Indonesia to 20 percent in Malaysia, with a median of 16 percent). These preliminary figures suggest that Egypt's tax revenue relative to GDP is comparable to similar countries. If this evidence were enough, it could be concluded that Egypt does not have a tax evasion problem, but that is not the case. A country's tax revenue is not only a function of how many people evade taxes; tax revenue is also a function of a country's level of development and its economic structure—among other factors. Therefore, in order to determine whether Egypt has a tax evasion problem or not and its extent, it is necessary to exclude the effect of these other variables. The following section includes a measurement that does this.

Tax Effort Index

The literature on tax evasion indicates that a country's ability to collect taxes can be limited by its general level of development and the structure of its tax base. GDP per capita may be a proxy for a country's level of development. The shares of various economic sectors in GDP are usually used as proxies for the structure of the tax base. Some sectors of the economy are easier to tax than others. Mining, for example, is assumed to be a highly-concentrated sector, with import and export links that provide checks and balances on tax payment. Similarly, the relationship between the share of imports and exports in GDP is assumed to be positive. Therefore, if there are two countries with the same level of income, but one has a larger international sector (imports and exports), the country with the larger international sector will have a larger capacity to raise tax revenues relative to GDP. By contrast, agriculture in developing countries usually has a large subsistence component and is fairly small scale, hence the potential for extensive tax evasion. Based on these relationships, it is possible to produce a predicted tax revenue/GDP ratio that can be used to construct the tax effort index.

$$\text{Tax Effort Index} = \frac{\text{actual tax revenue/ GDP}}{\text{predicted tax revenue/ GDP}}$$

A tax effort index less than one indicates that the country's actual collected tax revenue is lower than its potential tax revenue. By contrast, a country with a tax effort index greater than or equal to 1 is controlling tax evasion better than comparable countries. The results of earlier research using this method are summarized in Table 2.

This paper's analysis, however, adds two sets of variables to economic structure and GDP per capita: institutional variables that can impact effectiveness of any tax administration system and statutory corporate and income tax rates.⁷ Institutional differences play a role in taxpayers' willingness to voluntarily pay taxes and the ability of tax authorities to enforce prompt and accurate tax payment. For example, if corruption is perceived as a prevalent phenomenon, a country's tax revenue/GDP ratio falls. Inadequate law enforcement or slow justice can also limit a country's ability to collect taxes even when the structure of the economy is conducive to effective tax collection. Statutory income and corporate tax rates are also variables that influence the tax revenue/GDP ratio. If two countries have similar levels of tax evasion, but one has higher statutory income and corporate tax rates, that country should have a higher tax revenue/GDP ratio.⁸ Therefore, the relationship between each of the tax variables and the tax revenue/GDP ratio is expected to be positive (*Table 6*).

Table 2. Results of Previous Empirical Studies

<i>Variables</i>	<i>Previous Studies:</i> Chelliah, Baas, and Kelly (1975)	Tait, Gratz, and Eichengreen (1979)	Tanzi (1992)	Leuthold (1991)	Stotsky and Woldemariam (1997)
<i>Agricultural Share</i>	-	Insignificant	-	-	-
<i>Mining share</i>	+	+			-
<i>Manufacturing Share</i>					
<i>Export Share</i>					+
<i>Import Share</i>			+		
<i>Per Capita Income</i>					Insignificant
<i>Non-mineral Export Share</i>	Insignificant	+			
<i>Non-export Income per Capita</i>					
<i>Foreign Debt Share</i>			+		
<i>Foreign Trade Share</i>				+	
<i>Sample Size</i>	47 LDCs	47 LDCs	83 LDCs	8 Sub-Saharan Countries	30 Sub-Saharan Countries
<i>Period</i>	1969-71	1972-76	1978-88	1973-81	1990-95
<i>Analysis Type</i>	(averages)	(averages)	(panel)	(panel)	(panel)

Notes: (-) Negative, significant; (+) Positive, significant; LDCs: Less Developed Countries

⁷ A variable that captures variations in marginal effective tax rates could be more useful than statutory rates because it takes into consideration all the relevant tax holidays, exemptions and so forth.

⁸ This argument ignores possible Laffer Curve effects in which the tax rate elasticity of tax revenue may be greater than 1 thus resulting in higher tax rates and reducing total tax revenue. Accounting for that possibility in the context of a cross-country analysis is difficult.

The empirical analysis uses panel data from 60 countries for the period between 1990 and 1995, which translates into 301 observations, to estimate the predicted tax revenue/GDP ratio.⁹ As usual in cross-country analysis, variables unaccounted for can be significant. Therefore, both fixed- and random-effect regression analyses are used to reduce the influence of the exogenous variables—not included in the model—on the dependent variable.¹⁰ Economic explanatory variables are: constant \$1,990 GDP per capita; the shares of agriculture, manufacturing and mining in GDP; as well as an openness index that relates the share of imports and exports to GDP. The relationship is expected to be positive for GDP per capita, manufacturing, mining, and openness and negative for agriculture.

For institutional variables three indices are used from *International Country Risk Data* (1995) produced by Political Risk Services' for the period between 1982 and 1995. These variables are: bureaucratic quality, rule of law and corruption. The bureaucratic quality index reflects the degree of bureaucracy's autonomy from political pressure and its strength and expertise to govern without drastic changes in policy or government services (0 to 6, with 6 representing the most independent). Similarly, the rule of law index reflects citizens' willingness to accept established institutions that make and implement laws and adjudicate disputes (0 to 6, with 6 representing the greatest acceptance). Finally, the corruption index reflects the pervasiveness of unofficial payment (0 to 6, with 0 representing the highest possible level of corruption and 6 representing virtually no corruption). The expected relationship between the tax revenue/GDP ratio and all three indices is positive.¹¹ As expected, the correlation between the three institutional variables is high, therefore, regressions were run for each of these variables together with economic variables. Only the regressions with corruption are reported. Regressions with rule of law and quality of bureaucracy produced similar but weaker results. Results of regressions that do not include tax rates are reported in Table 3; these utilize the larger sample. Adding statutory income and corporate tax rates reduce the sample to 28 countries and 134 observations. Those results appear in Table 4.

⁹ The original sample used to estimate the effect of economic variables consists of 388 observations from 70 countries. Results of this analysis are available upon request.

¹⁰ For a presentation of the fixed- and random-effects estimation model, see Greene (1993).

¹¹ The way the corruption index is defined, with higher values corresponding to low corruption, translates into the expected positive relationship: the higher the index value, the higher the tax revenue/GDP ratio.

Table 3: Fixed and Random Effects, including openness index(t-statistics are in parentheses)

Variables	OLS, Including Fixed Effects	OLS, Including Random Effects
Constant		14.473** (5.069)
Openness/GDP	0.0007 (0.03)	0.0570** (2.947)
Corruption	0.6600** (2.53)	0.9851** (4.055)
GDP per capita	0.0002** (2.28)	0.0004** (5.316)
Agriculture sector/GDP	-0.0090 (-0.12)	0.1456** (-2.382)
Mining sector/GDP	0.1300** (2.09)	0.0288 (0.526)
Manufacturing sector/GDP	-0.0060 (-0.08)	-0.0125 (-0.189)
Adjusted R-squared	0.97	0.590
Hausman test	34.81**	
Number of observations	238	238

Table 4: Regression Results, including corporate and income tax rates (t-statistics in parentheses)

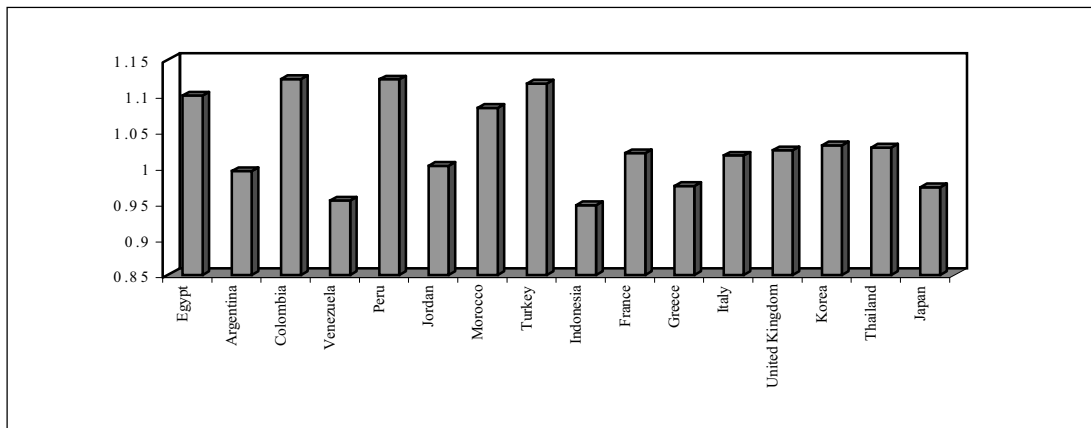
Variables	AR(1)
Constant	14.7441** (2.479)
Openness	0.0832** (4.080)
Corruption index	-0.5078 (-1.072)
GDP per capita	0.0001 (1.165)
Agriculture sector/GDP	-0.0462 (-0.430)
Mining sector/GDP	-0.0866 (-0.755)
Manufacturing sector/GDP	-0.1127 (-1.388)
Corporate tax	0.1128 (1.471)
Income tax	0.2970** (4.591)
Rho	0.8590** (19.354)
Likelihood ratio test	
χ^2	58**
Number of observations	134

Note: OLS= ordinary least squares, ** indicates significant at 5% level.

Results of both regressions—with and without tax variables—are presented with the usual trade-off between using a small sample to test a more complete model and vice versa. For the bigger sample, in both the fixed- and random- effect specifications, corruption and GDP per capita are significant and have the expected positive sign. Openness and the income tax variable are significant for the Ordinary Least Square, First Order Autoregressive Model, OLS[AR(1)]. The share of agriculture in GDP and the openness index are significant and have the expected sign in the random-effects specification but not in the fixed-effects model.

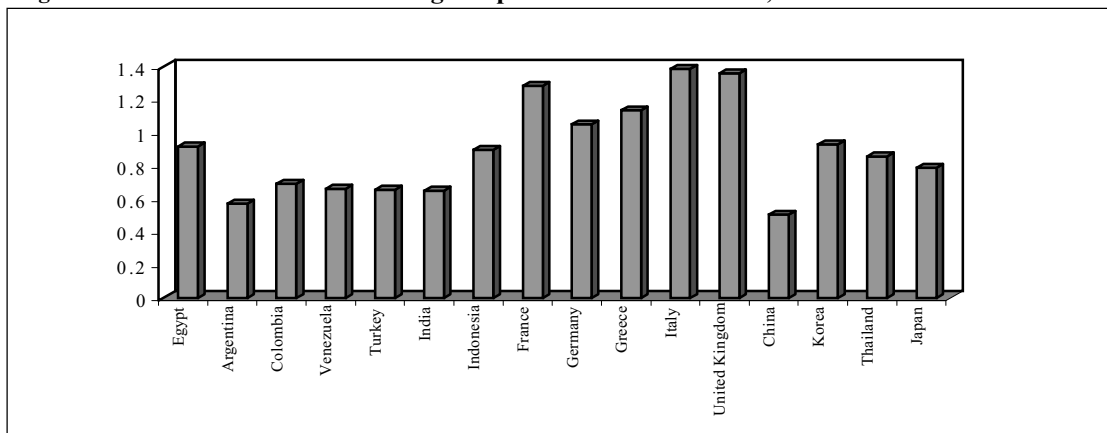
The Hausman statistic and R^2 indicate that the fixed-effects model has a better fit. Thus, fixed-effect results were used to calculate the tax effort index for the bigger sample analysis (*Figure 1*). Figure 2 shows tax effort index for the OLS[AR(1)] model with the two tax variables.

Figure 1. Tax Effort Index: Economic and Institutional Variables, Selected Countries



Source: Author's calculations.

Figure 2. Tax Effort Index: Including Corporate and Income Tax, Selected Countries



Source: Author's calculations.

This analysis indicates that when high tax rates are not accounted for, Egypt's tax revenue to GDP is consistent with its level of institutional and economic conditions. Egypt's statutory corporate and income tax rates, however, are higher than many developing and developed countries. Therefore, when Egypt's tax rates are accounted for, the picture changes: Egypt's tax effort index in 1994 was 0.92, indicating a not-so-substantial tax evasion problem. High tax rates and tax evasion combine to produce a situation in which government tax revenue is consistent with revenue predicted but only by maintaining high income and corporate tax rates.

Comparing Egypt to other developing countries, however, shows that its level of tax evasion, as estimated by the model, is similar to that of other developing countries such as Thailand, Korea and Indonesia, and generally lower than the level of tax evasion prevailing in Latin American countries (Egypt's tax effort index is higher).

III. Are Taxpayers' Transaction Costs Higher in Egypt Compared to other Countries?

While Section 2 suggests that Egypt's tax administration does not adversely affect collected tax revenue, complaints from the private sector indicate that the government's methods of raising tax revenue have an adverse effect on the business environment in Egypt.¹² This paper relies on two business surveys to evaluate the private sector's transaction costs in tax administration; the first covers 154 businesses in Egypt, and the second covers 3,685 businesses in 69 countries.¹³ Both surveys identify the institutions that hinder business the most. While the results do not produce a dollar-value estimate or index, they help in identifying the relative rank of the tax issue (both rates and administration) as an obstacle to private business, and in clarifying how the situation in Egypt is similar to, or different from, other countries.

For developing countries as a group, tax regulations and rates represent the most binding constraint to business with a severity of close to 80 percent (*Figure 3*).¹⁴ Corruption is the second greatest constraint, and in many developing countries corruption in taxation and customs represents a significant proportion of the graft perceived in the economy as a whole (*Figure 4*). Surprisingly, tax regulations and

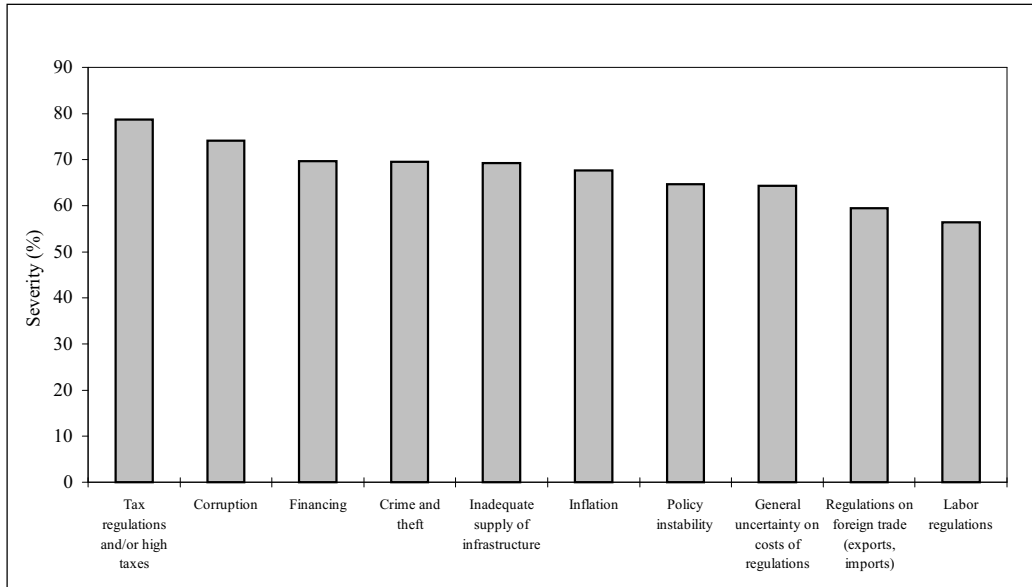
¹² Quantitative analysis of these two areas, especially in a cross-country context, can be extremely difficult if not impossible because it is largely subjective.

¹³ For details about methodology, coverage and other results, see Fawzy and Galal (1997) and Brunetti, Kisunko and Weder (1997).

¹⁴ The survey questionnaire combines tax rates and tax regulations as a single constraint. Therefore, concentrating on transaction costs separately is not possible.

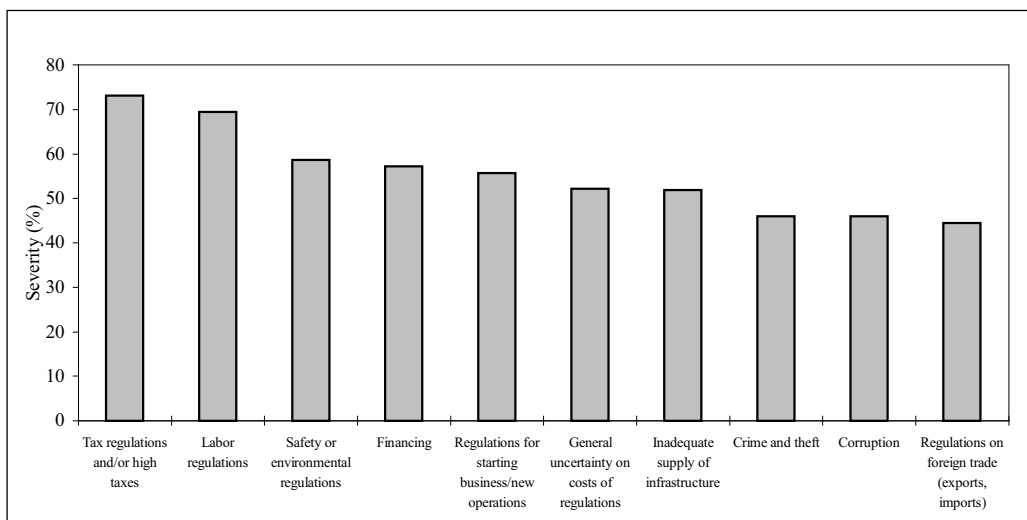
rates were ranked as the primary obstacles to business activity in developed countries as well as in developing countries, but to a slightly lesser degree. Even in terms of taxpayers' evaluation of the severity of the problem, the range is small as well with the magnitude of Egypt's problem appearing to be lower than that in developed and other developing countries (*Figure 5*).

Figure 3: Ranking of Constraints to Business, Developing Countries

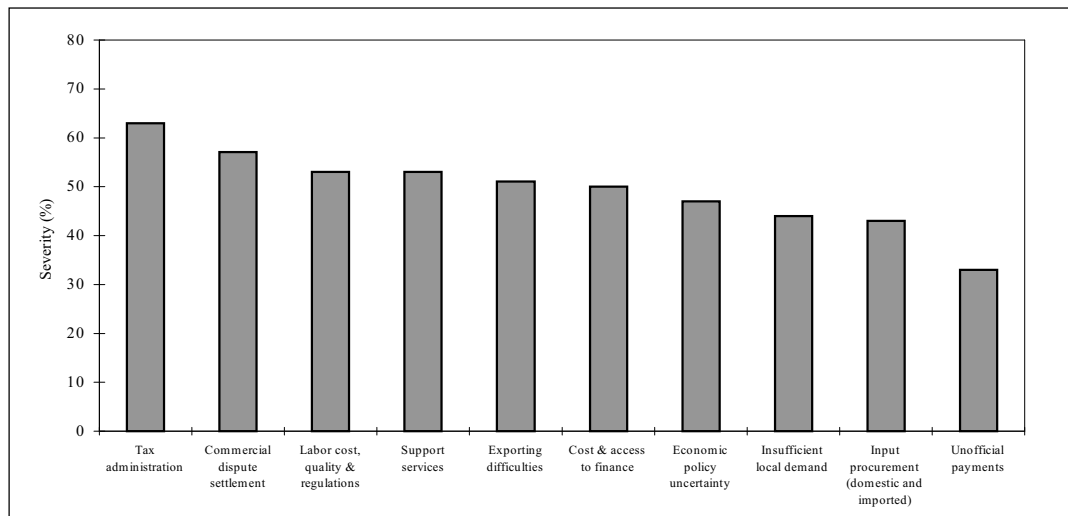


Source: Brunetti, Kinsunko and Beatrice Weder (1997), "Institutional Obstacles to Doing Business: Region by Region Results from a Worldwide Survey of the Private Sector," Policy Research Working Paper No. 1759, World Bank, Washington, D.C., April.

Figure 4. Ranking of Constraints to Business, Developed Countries



Source: Brunetti, Kinsunko and Beatrice Weder (1997), "Institutional Obstacles to Doing Business: Region by Region Results from a Worldwide Survey of the Private Sector," Policy Research Working Paper No. 1759, World Bank, Washington, D.C., April.

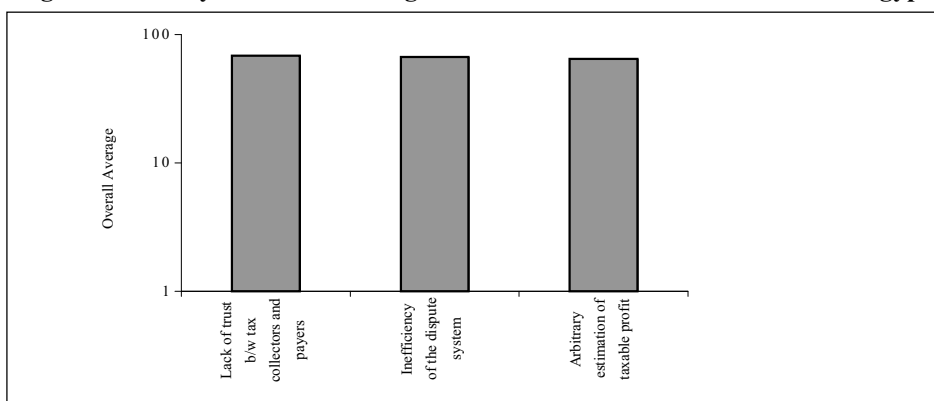
Figure 5. Ranking of Constraintsto Business in Egypt

Source: Fawzy, Samiha and Ahmed Galal (1997), *Firms' Competitiveness and the National Diamond*, ECES, Cairo.

For a number of reasons, it is necessary to use caution when comparing the results of the Egyptian survey with the results of the international survey. First, in the Egyptian survey, taxpayers were not specifically asked how they perceive tax rates as an obstacle to private sector participation. The focus was on issues that relate to the transaction between the taxpayer and the authority rather than the applicable tax rate. Second, in the Egyptian survey and the international survey, the severity of various constraints is necessarily a function of the scale of severity provided by the questionnaire. Therefore, ranking the severity of constraints from 0 to 4 in the Egyptian survey and 0 to 6 in the international survey produces degrees of severity that are not directly comparable. Finally, both surveys are ordinal in nature. Thus, while it is adequate to rank obstacles across countries, this rank should not be taken as a proxy for comparing the magnitude of a problem across countries. Although this paper considers severity values across regions, this can be misleading. For example, a businessperson in a developed country who spends two weeks on an audit with the tax authority may perceive that cost as a severe constraint to business and would rank tax issues as severe. His counterpart in a developing country may not consider spending two weeks on an audit an excessive loss and thus would not rank tax regulations and rates as a severe obstacle to business.

This discussion brings us to the Egyptian survey and its treatment of various issues related to the tax authority. Two results bring the ‘contract’, or relationship, between taxpayers and the tax authority to the forefront of the tax evasion/transaction-costs debate in Egypt. When asked to rank lack of trust, arbitrary estimates and inefficiency of the dispute-settlement system, respondents cited these three aspects of the tax payment/collection relationship as fairly severe obstacles to business activity in Egypt (*Figure 6*). Section 4 analyzes weaknesses in the Egyptian tax payment/collection relationship which may be responsible for these three specific problems.

Figure 6. Survey Results: Ranking of Tax Administration Constraints in Egypt



Source: Fawzy, Samiha and Ahmed Galal (1997), *Firm's Competitiveness and the National Diamond*, ECES, Cairo.

IV. The Main Sources of Transaction Costs in Egypt's Tax Administration

If the relationship between taxpayers and the tax authority is analyzed as a voluntary contract between two parties, it is clear that this relationship can suffer from high transaction costs because of the importance of private information, moral hazard and adverse selection. These three problems result in higher transaction costs for both the tax authority and taxpayers. Therefore, the goal of tax administration reform must be to streamline incentives of both taxpayers and the tax authority and discourage tax evasion through reducing or eliminating these weaknesses. At the same time, reform should minimize the enforcement costs for the tax authority and the voluntary compliance costs for taxpayers.

Potential Weaknesses in a Contract

The Importance of Private Information

Parties to a contract may have private information that they conceal when entering into the contract (precontractual opportunism) or they may change their position in the middle of a long-term relationship thus holding the other party ‘hostage’ (postcontractual opportunism). Taxpayers’ private information comes from intimate knowledge of their costs, revenues, records, and so forth. The tax authority’s private information comes from any discretionary power it has in interpreting and implementing various clauses of the law. The greater the discretionary power, the more room for postcontractual opportunism on the part of the tax authority. As for taxpayers, they only have the potential for precontractual opportunism (i.e., taxpayers enter that relationship with the intent to hide relevant activity and profit information). They cannot exercise postcontractual opportunism, however, because the authority’s right to penalize taxpayers protects it from their opportunistic behavior. Bonuses and incentives to tax collectors are private information that influences the tax collector’s behavior in maximizing the tax revenue collected. This information is not accessible to taxpayers, yet it affects tax collectors’ estimates of their tax liability.

Moral Hazard

The problem of moral hazard arises when a change in the law or regulation causes people to change their behavior in a way that is not economically efficient or consistent with the law. The critical element in this case is that trying to verify that people actually changed their behavior is generally costly or impossible. Thus it is impossible to include penalties or other enforcement mechanisms in the new law or regulation.¹⁵

In the tax payment relationship, taxpayers can behave in a way that creates a moral hazard problem. When tax collectors systematically revise records upward, taxpayers come to expect this type of behavior and under-report their profits or the size of their economic activity, thus hindering the efficient collection of taxes. If tax collectors have the discretionary power to disregard taxpayers’ records, some tax collectors will have a tendency to manipulate the system to extract unofficial payments. Another

¹⁵ The classic example of moral hazard is a government requiring car owners to buy car insurance. Once a car owner buys coverage, and the more comprehensive the coverage is, the more likely it is that he will drive recklessly knowing that any damages to the car will be fully or partially paid by the insurance company.

example of moral hazard is when taxpayers are not penalized for taking cases to trial unnecessarily. If taxpayers do not pay interest and legal expenses on contested funds, they will tend to delay cases especially when they are using the tax dues as working capital for several years.

Adverse Selection

Adverse selection occurs when the law governing a specific economic activity discourages particular groups that would otherwise participate in that activity, while encouraging the participation of other groups who reduce the efficiency of the whole sector.¹⁶

Adverse selection arises in tax administration, for example, when taxpayers are discouraged from engaging in business because the law is not perceived as providing equal and transparent treatment to all taxpayers. It has been repeatedly mentioned, for example, that ambiguity in tax payment, the perception of corruption and lengthy dispute settlement discourage foreign investors from investing in Egypt. These factors also encourage small domestic investors to revert to the informal sector. Another example of adverse selection, though harder to document, is that tax collectors more prone to accepting illegal payments compete to locate themselves in industrial areas and prosperous regions that may offer more opportunities for side payments. Because of this competition, dishonest tax collectors will ‘crowd out’ honest tax collectors in the areas where this phenomenon produces the most significant damage.

The Tax Payment Contract

Given the weaknesses of the contract discussed in the previous section, the analysis now considers how the importance of private information, moral hazard and adverse selection can influence taxpayers’ incentives in their interaction with the tax authority.¹⁷ To simplify, the discussion relies on the LeBaube and Vehorn (1992) classification of taxpayers. While the authors do not link each group of taxpayers to the contract weaknesses discussed here, the correspondence between weaknesses and

¹⁶ A classic example of adverse selection comes from the used-car market. Because it is hard to determine the quality of a used car, a buyer will only be willing to pay for the ‘expected’ quality of the car. Even if the car appears to be in good shape, the buyer will discount the quality by the possibility that there is an undetectable problem in the car. This creates a situation in which only owners of low-quality cars will be willing to utilize that market, and owners of high-quality cars will be less willing to rely on that market to sell their cars.

¹⁷ This paper focuses on the contract between the tax authority and taxpayers. Other contracts that affect the efficiency of tax payment/collection are the relationships between the authority and tax collectors, the taxpayer and accountants, the tax authority and other government bodies, and the tax authority and the judiciary. These contracts are discussed here only to the extent that they directly affect the contract between the tax authority and taxpayers. A more thorough analysis of these other contracts is beyond the scope of this paper.

each taxpayer group is apparent. According to LeBaube and Vehorn, there are four types of actual and potential taxpayers:

- Group 1: Those who understand and comply willingly with the law (no contractual weakness).
- Group 2: Those who want to comply but do not understand the law (private information problem).
- Group 3: Those who understand the law but choose not to comply fully (moral hazard, private information).
- Group 4: Those who deliberately do not comply (adverse selection problem).

Dividing the taxpayer population into these groups, helps in devising the right ‘incentive-compatible contract’ for each group, thus increasing the probability of compliance. The goal is to maximize the number of taxpayers in Group 1; discourage members in Group 1 from moving to Groups 2, 3 and 4, and encourage members of Groups 2, 3 and 4 to move to Group 1. Moving taxpayers from Group 2 to Group 1, which entails understanding and complying with the tax laws, involves educating taxpayers, simplifying the law and computerizing the system to reduce the cost of compliance to taxpayers and tax collectors, thus eliminating high transaction costs in tax payment. Many countries have focused on this aspect of reforming tax administration. Table 5 lists countries with various types of taxpayer information programs.

The analysis assumes, therefore, that with a simpler system and assistance from the tax authority transaction costs will be diminished for a subset of taxpayers by reducing information-collection costs, and that taxpayers will move from Group 2 to Group 1. The issue is more complicated for Groups 3 and 4. A taxpayer in one of these latter groups decides whether to pay or not to pay taxes depending on the outcome of an objective function that has the following general format:

The tax burden if the taxpayer decides to pay:

$$C^p = t * R + TC^p,$$

where C^p is the cost to the firm of paying taxes; t is the tax rate; R is the taxable income; and TC^p is the transaction cost of filing and auditing if the taxpayer decides to comply.

The tax burden if the taxpayer decides not to file:

$$C^e = p_d * (penalty + t * R) + TC^e,$$

where C^e is the expected cost to the taxpayer of not paying taxes (expected cost of evasion); p_d is the probability of detection; t and R are the tax rate and taxable income, as previously defined; and TC^e is the transaction costs of filing and auditing in the case of detected tax evasion. In order to achieve full compliance, then C^e must always be larger than C^p , or:

$$p_d * (\text{penalty} + t * R) + TC^e > t * R + TC^p .$$

Table 5: Taxpayer Information Programs in Selected Countries

	Argentina	Canada	Chile	Colombia	Jamaica	Mexico	Trinidad	USA
Publications								
Tax guides (instructions)	x	x	x	x	x	x	x	x
Pamphlets and bulletins	x	x		x	x	x	x	x
Technical publications		x		x	x	x	x	x
Audio cassettes for the visually impaired		x						
Newspaper supplements			x	x	x	x	x	x
Reminders in the press			x					
Media								
Radio or television commercials	x	x	x	x	x	x	x	x
Special television programs		x		x	x		x	x
Video cassettes		x				x		x
Press conferences			x			x		x
Telephone contact								
Telephone assistance	x	x	x	x	x	x	x	x
Tele-refund		x				x		x
Tele-info		x						x
Personal contacts								
Walk-in service	x	x	x	x	x	x	x	x
Correspondence								
Individually drafted letters		x	x		x		x	x
Standardized letters		x	x		x		x	x
Other programs								
Volunteers		x					x	x
High school program	x	x	x		x	x	x	x
Rural tax scene kits		x						x
Native outreach		x						x
Training for new businesses							x	x
Seminars and conferences		x		x		x		x

Source: Le Baube and Vehorn (1992).

One way to guarantee this inequality is to have p_d equal to 1. In that case, each taxpayer has an incentive to pay taxes for any positive penalty level as long as the transaction costs of detected tax evasion are not less than the transaction costs of paying taxes voluntarily. This policy, however, can be extremely costly to the government. In all countries, the probability of detecting tax evasion never equals 1. Therefore, a more realistic scenario must be considered in which p_d is less than 1. In this case, to guarantee that each taxpayer pays taxes, the following inequality must hold:

$$penalty > \frac{(1 - p_d) * t * R - (TC^e - TC^p)}{p_d} .$$

If $TC^e = TC^p$, which means that filing costs and auditing will not be higher in the case of evasion than filing costs and auditing in the case of compliance, the inequality condition reduces to:

$$penalty > \frac{(1 - p_d)}{p_d} t * R , \text{ or}$$

$$penalty > \left[\frac{1}{p_d} - 1 \right] t * R .$$

The higher the tax rate (t), or the taxable income (R), the larger the penalty needed to persuade taxpayers to pay taxes, given a fixed probability of detection (p_d). If the penalty is not a fixed dollar value but rather a function of the tax due, the relationship becomes:

$$k(t * R) > \left[\frac{1}{p_d} - 1 \right] t * R ,$$

where k is a constant greater than 1 that is sometimes determined on a progressive basis: the larger the tax due, the larger the constant that is used to determine the penalty.

In many cases, detecting tax evasion entails a process of auditing and scrutiny that is more detailed than the original filing. In other words, detecting tax evasion involves an additional penalty that taxpayers would want to avoid. In this case, $TC^e > TC^p$ and the penalty has to satisfy the following condition:

$$penalty > \frac{(1 - p_d) * t * R - (TC^e - TC^p)}{p_d} .$$

While the goal of the tax authority should be to reduce transaction costs for taxpayers in both the tax compliance and tax evasion scenarios, reducing the difference between transaction costs in the two scenarios has the added benefit of reducing incentives for tax evasion. To control tax evasion, tax administration has to guarantee the direction of the inequality. The magnitude of the following parameters in the tax payment contract can increase compliance:

- The size of the penalty, whether it is a function of the tax due or not (penalty and k), and whether there is a progressive schedule.
- The difference between transaction costs and auditing in compliance and tax evasion scenarios.
- The probability of detection and whether it increases with a history of evasion.
- The tax rate (t) and the comprehensiveness of the tax base (R).

The following section analyzes how these parameters affect the tax payment contract in Egypt and discusses the resulting weaknesses in the relationship. Section 5 draws on other countries' experiences to provide remedies for deficiencies in the tax payment contract.

The Tax Payment Contract in Egypt

The Size of Penalty

Two types of penalties are used to induce taxpayers to comply voluntarily: criminal penalty and financial penalty.¹⁸ This section examines each of these penalties in the case of Egypt. Failure to comply with various tax obligations (registering, filing, keeping records, withholding) can result in a financial penalty of 10 percent of the tax due with a maximum of £E1,000. Repeated offences within three years result in an increased penalty. Also, the law allows the tax authority to demand compensation that ranges from 25 percent to 300 percent of the amount of unpaid taxes. Failure to submit a tax return on time results in a 20 percent penalty of the tax due which may be reduced to 10 percent if the taxpayer reconciles with the authority. From discussions with tax authority personnel, it is not clear when any of these financial penalties are actually imposed, and the information available for taxpayers about their enforcement is quite little. This clearly diminishes the effectiveness of the financial penalty as a measure to curtail tax evasion.

¹⁸ In the Egyptian Unified Income Tax Law 157/1981, financial penalties come under Chapter 10 (Penalties), and various penalties in the course of regular tax payment procedures come under Chapter 6 (General Rules) and Chapter 7 (Appeals). The discussion of the appeals mechanism is vague in the law, and many of the actual procedures are governed by internal rules established by the tax authority and not generally known to the taxpayer.

In the Egyptian Unified Income Tax Law 157/1981, many references to criminal penalty are vague citing “punishment by imprisonment” as a possible penalty for failing to register with the tax authority (clause 133) or to withhold and pay third-party taxes, and submitting inaccurate records to hide taxable income.¹⁹ These infractions, entails either imprisonment of up to six months or a financial penalty. The common practice in tax cases, however, is to make a distinction between tax evasion and tax fraud. The latter are cases in which there is evidence to the tax authority that the taxpayer intentionally fabricated records, failed to acknowledge a significant line of activity or altered invoices. In these cases, the taxpayers’ records for the five years prior to detection are examined. Only under those specific cases does the tax authority invoke possible criminal penalties.

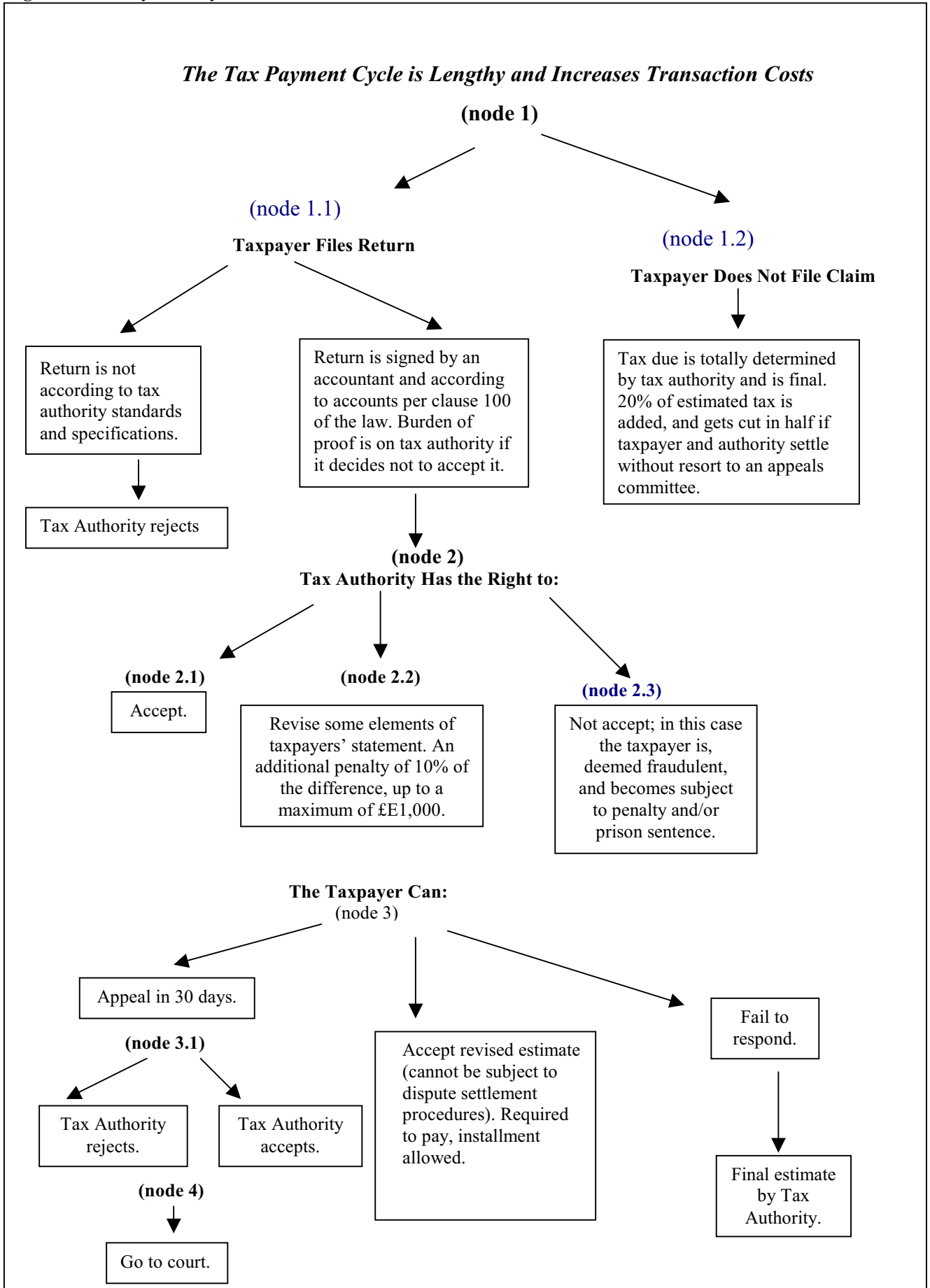
The experiences of other countries suggest that high criminal penalties tend not to be used frequently, especially when it is widely believed that evasion is prevalent, whether or not that is actually the case. Therefore, countries tend to use other means to censure evasion, including financial penalties, before they turn to increasing criminal penalties. In Egypt, there has been a trend recently towards financial penalties rather than criminal penalties in tax evasion cases. Confusion about which penalties apply in which cases and doubts about enforcement increase transaction costs for taxpayers that are willing to comply. Combined with uncertainty about the tax collectors’ role in determining the penalty, the present system increases transaction costs for both taxpayers and the tax authority simultaneously.

The Difference between Transaction Costs in Compliance and Non-compliance

Figure 7 is a flowchart that shows the steps for paying income tax and how these differ if the taxpayer decides to file a tax return, file on time and according to required specifications, or not file at all. The first junction (node 1.1) at which the taxpayer’s decision may result in moral hazard is if the taxpayer decides to spend time and effort preparing a tax return while there is a high probability that the tax authority will reject it (node 2) as an underestimation of the taxable income. Comprehensive auditing and minimal penalties combined with a high probability that the return is rejected, create a situation in which the taxpayer can ‘delegate’ the job of completing a tax return to tax collectors. This is a burden on the tax authority that compromises its other tax administration functions.

¹⁹ Those include mainly salary withholdings and funds withheld under the additions and deductions system.

Figure 7. Tax Payment Cycle



Source: Law 157/1981 modified by 187/1993.

At node 2.2, if the taxpayer decides to file an incomplete return, which is not a fraudulent return, any arbitrariness in the tax authority's revision takes the dispute to an appeals committee. If, on the other hand, the return is considered fraudulent, the taxpayer is subject to fines or a prison sentence (node 2.3), which is usually suspended. If the tax authority does not settle the nonfraudulent record (node 3.1), the next step is to go to court. Arbitrariness in the tax collection process brings closer the payoff for a taxpayer if he decides not to file (node 1.2) and if he goes to court (node 4). There is room for the taxpayer and the tax collector to manipulate this system. At node 3, neither the tax authority nor the taxpayer have an incentive not to go to court given the advantageous delays in deciding tax cases.

The Probability of Detection

In a comprehensive audit system, each taxpayer's records are audited. Assuming the tax authority has unlimited resources, the government wastes a lot of resources making sure that each taxpayer pays accurately and promptly. Governments, however, never have unlimited resources to spend on tax collection and the budget for tax collection can be either used to perform quick and rough audits for all taxpayers or to target a sample of taxpayers through selective but detailed audits. In selective audit programs, the sample can be random, so each taxpayer has an equal probability of being audited. Or audited taxpayers can be selected according to some formula or selection criterion not known to taxpayers. In both of these approaches, tax collectors do not resort to arbitrary estimates. Taxpayers realize that if they get audited they will be subject to extensive examination, and therefore they will be meticulous in filing their records. The tax payment relationship will be characterized by fewer disputes without necessarily increasing its tax collection budget. Thus, increasing the 'true' probability of detection reduces transaction costs for the tax authority without necessarily increasing them for taxpayers—a net welfare improvement in the system.

Tax Rates and Tax Base

When comparing Egypt's statutory corporate and income rates to countries in Latin America, the Middle East and North Africa, and Southeast Asia, Egypt's corporate rate is higher than most countries (*Table 6*). Except for India and other Middle Eastern countries, the norm appears to be 30 percent, and many countries have even lower tax

Table 6: Individual and Corporate Tax Rate

Country	Highest Marginal Tax Rate		\$ GDP per Capita 1995 (b)	Ratio (a):(b)	Highest Marginal Tax Rate	
	Rate %, 1996	Individual On Income Exceeding \$, 1996 (a)			Corporate Rate %, 1996	1996
Latin America						
Brazil	20	N/A	4,601.01			25
Argentina	30	120,060	8,054.93	14.90		30
Colombia	35	48,360	2,303.68	21.00		35
Uruguay	0	N/A	5,594.67			30
Chile	45	6,523	4,739.37	1.38		15
Ecuador	25	64,519	1,565.36	41.23		25
El Salvador	30	22,857	1,656.67	13.80		25
Nicaragua	30	25,310	419.38	60.40		30
Paraguay	0	N/A	1,859.63			30
Venezuela	34	N/A	2,718.80			34
Peru	30	54,495	2,501.66	21.79		30
Middle East & North Africa						
Egypt	48*	4,705	1,020.97	4.61		40
Bahrain	N/A	N/A	N/A			N/A
Iran	54	17,3851	1,566.20	111.00		10
Israel	50	57,256	1,5674.19	3.65		36
Jordan	N/A	N/A	599.34			N/A
Kuwait	0	N/A	1,404.20			55
Lebanon	N/A	N/A	N/A			N/A
Morocco	44	6,697	1,195.92	5.60		35
Oman	0	N/A	5,385.90			50
Syria	N/A	N/A	N/A			N/A
Tunisia	N/A	N/A	2,262.99			N/A
Turkey	55	24,7895	2,141.40	115.78		25
United Arab Emirates	N/A	N/A	N/A			N/A
Yemen	N/A	N/A	N/A			N/A
ASEAN Countries						
India	40	3,824	362.63	10.56		40
Indonesia	30	22,727	1,038.36	21.89		30
Malaysia	30	58,594	3,674.64	15.95		30
Singapore	30	273,841	28,463.48	9.62		27
Sri Lanka	35	2,101	703.80	2.99		35
Industrialized European Countries						
Austria	50	63,091	22,102.3	2.85		34
Belgium	55	76,011	20,856.8	3.64		39
Denmark	65	N/A	30,100.6			38
Finland	39	61.140	22,269.1	2.75		28
France	N/A	N/A	23,758.8			33
Germany	53	77,506	20,699.3	3.74		30
Greece	45	62,474	5,426.4	11.51		40
Ireland	48	14,246	5,937.4	2.40		40
Italy	51	184,078	19,134.0	9.62		37
Netherlands	60	53,468	22,879.7	2.34		37
Romania	60	6,875	37.9	181.40		38
Sweden	30	28,024	21634.9	1.30		28
United Kingdom	40	39,844	6348.4	6.28		33
Pacific Countries						
Japan	50	300,782	38458.7	7.82		38
Australia	47	38,841	32348.9	1.20		36
New Zealand	33	19,837	36329.8	0.55		33
Papua New Guinea	35	16,969	1076.0	15.77		25

Note: * Reduced to 40% as of January 1998.

Source: World Development Indicators, 1997 (Tax Rate), IFS, May 1997 (GDP per Capita) and Global Competitiveness Report, 1996 and 1997.

rates. In addition to a high corporate tax rate, individual income taxes, which are usually progressive for different income brackets, can represent a significant burden on the self-employed if the highest tax rate applies at a low threshold. Taking the ratio of the threshold to which the highest marginal tax rate on individual income applies relative to GDP per capita, this reveals that Middle Eastern countries in general have higher ratios than the Latin American group (with the exception of Chile) and ASEAN member countries. For Egypt, the income level at which the highest rate applies is only 4.61 times GDP per capita. That ratio is as high as one hundred times GDP per capita in some countries. Only Egypt and Morocco have a combination of high personal tax rates, a low threshold and a high corporate tax rate. Chile's individual income is heavily taxed, but its corporate rate is the second lowest rate after Iran.

V. Reducing Transaction Costs in Tax Administration

Manipulating Parameters in the Egyptian Tax Contract

The first parameter that works against prompt compliance with the Egyptian tax system is the difference between transaction costs in evasion and transaction costs in compliance ($TC^e - TC^p$). The analysis in previous sections suggests that dealing with the tax administration does not reward taxpayers who comply in terms of low transaction costs. While the tax reform system must focus on reducing transaction costs in both evasion and compliance scenarios to minimize delays in collecting tax revenue and implementing penalties, focusing on reducing transaction costs in compliance has the added benefit of reducing tax evasion incentives.

To encourage voluntary compliance through the probability of detection, and at the same time free resources for extensive audits, a tax system can concentrate on tax returns for the current year and block previous years from review. If any significant violation is detected, then the preceding periods not barred by a statute of limitations could be investigated. This system works better with incentives for future compliance as opposed to periodic tax amnesties that reward tax evaders and reduce the cost of tax evasion. Similar systems have been implemented in Argentina, Chile and Mexico and have been found to produce reasonable results (Silvani 1992). Because of the large number of cases in Egypt that need to be audited, there is little expectation that audits will be thorough or complete. Even though the probability of an audit is officially equal to 1, the probability of a thorough audit is significantly less than 1.

The system can also manipulate tax rates and base to reduce tax evasion. A high rate (t), combined with limited personal exemptions (producing a large R), such as £E3,000 per annum for a married person with children, £E2,500 for a married person with no children, and £E2,000 for a single person, creates a greater incentive for tax evasion. While reducing the tax rate may increase compliance, this policy may not be feasible now because it will reduce government revenues. Reducing the tax rate can be postponed until other policies are implemented addressing the probability of detection, enforcement of penalties and reduction of transaction costs. An approach taken by many countries is to focus on the inequality for larger taxpayers (large R), by increasing the probability of detection for large taxpayers, extensive audits and so forth. This policy is discussed in detail later.

Rely on Third Parties

Many countries rely on a third party for specific aspects of tax administration. There are two theories behind including third parties in the process of tax payment. The first is to provide checks and balances on taxpayers and reduce the information disadvantage that the tax authority has in estimating each taxpayer's true profits. The system of additions and deductions in Egypt is an example of this. Law 77/1969 first introduced the system of additions and discounts requiring government agencies and public sector entities to deduct 10 to 15 percent of any payment to noncommercial professionals. The funds are submitted to the tax authority toward payment of the professional's tax liability. Law 157/1981 and later Law 187/1993 generalized these requirements to include joint-venture companies, trade associations, hospitals, educational institutions, and a host of other establishments. Furthermore, these entities are required to add to the price of any good or service a similar percentage that is delivered to the tax authority on a regular basis.

The benefit of this system is that it gives the tax authority an estimate of taxpayers' activity. The tax authority is guaranteed at least the percentage withheld by the third party required to perform the collection job. This system has numerous administrative problems, which have been discussed extensively in the Egyptian press recently, including the burden on firms, especially small and medium-sized firms; loopholes manipulated by third parties to avoid prompt payment; and the inability of the government to collect tax funds withheld by investment companies during their tax-exempt status. These, however, are not the focus of this discussion.

It is important instead to consider how the system of additions and deductions interacts with the contractual setting that underlies the whole relationship between taxpayers and the tax administration. If the government provides the right incentives for taxpayers to file taxes and minimizes the probability of evasion, then the system of addition and deductions becomes redundant. If, however, the government does not succeed in addressing voluntary compliance, then the usefulness of the system of additions and deductions continues to be limited. Revenue from additions and deductions accounted for 7.5 percent of total tax revenue in 1994/95 (*Al-Ahram* 1/24/1998). Any system of selective audits and self-assessment will compound the probability of tax evasion on the part of third parties. Thus, the government, again, will face an incentive problem with third parties as well as with the taxpayers.

Extensive reliance on the discretion of tax collectors can be viewed as a kind of reliance on third parties. This system, however, uses the bureaucracy to implement government policies. Principal-agent problems, lack of incentives, contradictory or unclear objectives, and room for rent seeking are some of the usual problems encountered with this arrangement. To evaluate what kind of remuneration package can eliminate these problems in the bureaucracy, Van Rijckeghem and Weder (1997) estimate that eradicating corruption in the civil service by improving pay to public servants could require increasing the wages compared to manufacturing wages by 3 to 7 times. The results of this report are generally weak, but they indicate how expensive raising tax collectors' wages is as a means to overcome tax evasion. Delegating assessment to taxpayers rather than collectors can be equally effective with a system that 'recruits' taxpayers in addition to paid collectors. Relying on tax collectors adds one more link thus shifting accountability further up the chain.

The government can also rely on third parties that have a comparative advantage in specific tax administration jobs. Many Latin American countries leave printing forms, collecting payments and processing data to private sector banks or corporations. Colombia, for example, hires a private company to print and distribute tax forms through the mail. Private banks and other financial institutions are increasingly authorized to receive documents, process payments and assist the public during tax payment time. Banks also are authorized to receive tax payments, especially from large taxpayers. Payment for these services is usually in fees, but banks are sometimes allowed to use tax funds interest-free for a few months.

The question is: Can the government rely on incentives to tax accountants rather than taxpayers to get accurate profit or income records? The Mexican system utilizes this principle. This system of Expert Certification allows the taxpayer to utilize a public accountant. The tax authority considers the accountant's signature a 'guarantee' on the accuracy of the return; any mistakes are the sole responsibility of the accountant. That system is voluntary, so a taxpayer chooses whether or not to rely on the accountant's services. Also, if he decides to hire a public accountant, he has the freedom to choose the one that can guarantee confidentiality (Acuna 1992, p. 388).

From the experiences of other countries, it appears that the theory behind relying on a third party is relevant: if the reason is to utilize the comparative advantages of private parties, such as banks and accountants, the results are positive. If, however, the objective is to provide checks and balances, the intended results are rarely achieved unless combined with huge spending on other measures. Implementing other measures simultaneously, however, makes it difficult to evaluate the effectiveness of relying on third parties as providers of these checks and balances.

Distinguishing between Small and Large Taxpayers in the Probability of Auditing

In many countries, the tax authority has two different departments or programs to handle small and large taxpayers. Large taxpayers generally face a more extensive tax audit and/or a higher probability of being audited in a selective audit system (*Table 7*). Within that system, and over time, emphasis can be extended from the large taxpayers to small taxpayers. Publicizing this policy, however, can defeat the purpose of reducing tax evasion. While it guarantees compliance among larger taxpayers, it can cost the government extensive losses in terms of smaller taxpayers who reevaluate the probability of detection.

Other measures that distinguish between small and large taxpayers, exempt taxpayers under a specific income threshold from registration or filing. This policy reduces the tax administration authorities' paperwork, but makes detection of evaders moving in and out of that exempted level difficult. Requiring registration and filing, whether income is taxable or not, reduces the incentive to evade taxation in a specific year. The taxpayer knows that evading taxes in a specific year does not mean the tax authority does not have any record for tracing his activity.

Table 7: Countries with Special Systems to Monitor Large Taxpayers

Country	Collection Procedures	Auditing Procedures
Argentina	Yes	Yes
Australia	No	Yes
Austria	No	Yes
Belgium	No	Yes
Benin	Yes	Yes
Bolivia	Yes	Yes
Brazil	No	Yes
Burkina Faso	Yes	Yes
Canada	No	Yes
Colombia	Yes	Yes
Cote d'Ivoire	Yes	Yes
El Salvador	Yes	Yes
Spain	No	Yes
France	No	Yes
United Kingdom	Yes	Yes
Mali	Yes	Yes
Mauritania	Yes	Yes
Nicaragua	Yes	Yes
Niger	Yes	Yes
Paraguay	Yes	Yes
Peru	Yes	Yes
Senegal	Yes	Yes
Sri Lanka	Yes	Yes
Togo	Yes	Yes
United States	No	Yes
Uruguay	Yes	No

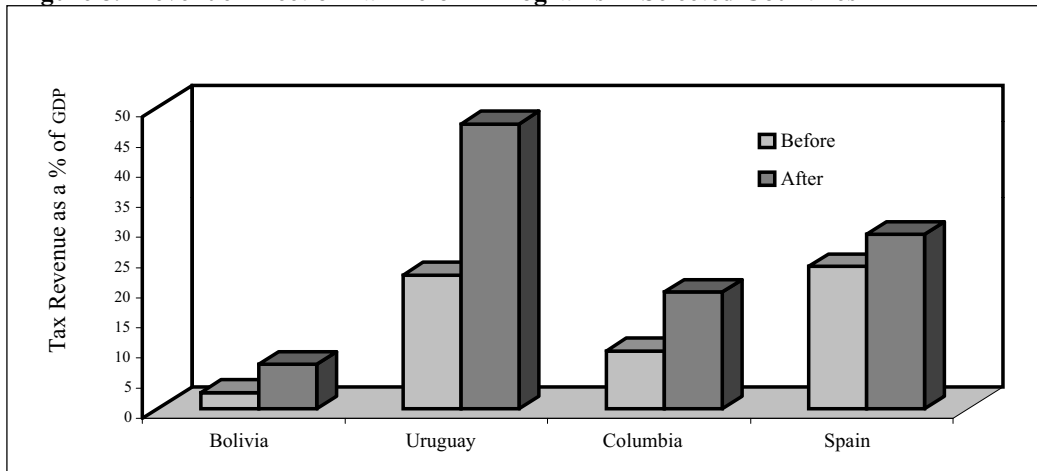
Source: Tanzi, Vito and Anthony Pellechio (1995), *The Reform of Tax Administration*, International Monetary Fund WP/95/22.

Computerization, National Registration and Tax Identification Numbers

Almost all countries embarking on tax reform introduce some measure to improve the technological capabilities of their tax collection agencies. Depending on the severity of the problem, the solution differs from one country to the other. Spain's tax reform in 1983 focused on computerization exclusively. Bolivia's tax revenue/GDP ratio was 1 percent before its reform program in 1985. That problem required drastic measures including hiring international consultants and establishing a Tax Collection Under Secretariat and the General Bureau of Internal Revenue. Uruguay implemented a more gradual approach to tax reform with a system that raised collected revenue from 11 percent of GDP in 1984 to 13 percent in 1990. Almost all countries introduced

a variation of these elements whether tax identification numbers, required registration, supplying tax returns through magnetic media for large taxpayers and so forth. Figure 8 presents the revenue effect of tax reforms on selected countries.

Figure 8. Revenue Effect of Tax Reform Programs in Selected Countries



Source: *Government Finance Statistics Yearbook* (tax revenue); *IFS* (GDP).

VI. Conclusion

This paper investigates two issues that dominate the debate on tax administration in Egypt: tax evasion and taxpayers' high transaction costs in tax administration. Empirical analysis evaluating Egypt's tax revenue relative to GDP in a cross-country analysis shows that tax evasion in Egypt is consistent, to a great extent, with its economic and institutional conditions. Adjusting for Egypt's high tax rates, the analysis indicates that tax evasion exists, though it is still not high in comparison to other countries. This combination of tax evasion and high tax rates highlights the importance of addressing tax evasion before any attempt is made to reduce corporate or income tax rates to maintain or increase tax revenue.

Evaluating of the level of transaction costs involved in tax administration, based on business sector surveys in both Egypt and 69 other countries, shows that tax issues are perceived as major obstacles to business both in developed and developing countries. The survey of Egypt shows that specific obstacles to business relate to the tax authorities' discretion and arbitrariness.

The literature on contracts and transaction costs provides tools to evaluate the tax system and incentives for both taxpayers and the tax authority. The analysis identifies contractual weaknesses that increase tax evasion and transaction costs for both taxpayers and the tax authority. Any effective attempt to reform tax administration in Egypt must address these weaknesses with an emphasis on developing a system which ensures that incentives to participants reinforce the system's efficiency instead of focusing on measures to 'police' the parties involved.

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