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The Egyptian tax system reforms, investment and tax evasion (2004-2008)

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Abstract

Purpose – This study aims to evaluate effects of tax system reforms on tax obstacles to investment in Egypt and tax evasion. It also aims to analyze differences in burden of tax obstacles and extent of tax evasion among different types of enterprises after applying tax reforms.

Design/methodology/approach – The study uses data from Productivity and Investment Climate Surveys 2004 and 2008. A number of indices are constructed to measure incidence and severity of tax obstacles. Two indicators are constructed to estimate incidence and extent of tax evasion. The study adopts a descriptive analytical comparative approach to evaluate changes and differences in severity of tax obstacles, and their effects.

Findings – The results obtained show that tax reforms have resulted in a significant decrease in severity of tax obstacles. However, they are still major obstacles. The overall decrease hides differences in the burden of these obstacles. Reforms were not enough to address needs of small enterprises. The extent of tax evasion decreased. However, it is still a problem as tax obstacles are still major obstacles.

Research limitations/implications – There is a need for more detailed data about problems enterprises face in each phase of interaction with tax administrators and managers' suggested solutions.

Originality/value – The study evaluates the actual effects of a major economic reform, on the microeconomic level during an important period rather than exploring enterprises' expectations. The results show that there is a need for more reforms targeting small enterprises.

Keywords Taxes, Tax obstacles, Tax reform, Investments, Tax evasion, The Egyptian economy, Eygpt

Paper type Research paper

1. Introduction

Realizing the significant negative impact of both high tax rates and the problems of tax administration, different developing countries adopted major tax reforms.

The main purpose of these tax reforms is to improve the investment climate and to reduce tax evasion, as taxes are a major source of public revenues, especially in developing countries. Egypt is no exception.

The Egyptian government anticipated a major reform step by issuing in July 2005, Law 91 of 2005. This law represents a tax reform package, adopted to tackle problems in both sides; tax rates and tax administration; including a significant reduction in tax rates by 50 percent, and moving to a self-assessment tax regime, which is an important step away from arbitrary estimation, which is one of the most influential problems in the tax system in Egypt.

This study evaluates the effects of these major reforms in the tax system in Egypt. It has three main objectives:

(1) Evaluating the effect of tax reforms on tax obstacles to investment. The study compares the burden and severity of both tax rates and tax administration as

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obstacles to investment in Egypt before applying tax reforms in 2005 and after three years of applying these reforms.

(2) Analyzing the characteristics of enterprises that still suffer most from tax obstacles. The study compares the burden and severity of the previous two constraints among different types of enterprises after applying tax reforms.

(3) Evaluating the effect of these tax reforms on the extent of tax evasion and evaluating differences in the extent of tax evasion among different types of enterprises.

2. Data and methodology

To achieve its objectives, the study uses data from Productivity and Investment Climate Surveys 2004 and 2008.

These surveys provide data on different types of business enterprises of different sizes; working in Egypt. They are detailed enterprise level surveys.

Using data of these two surveys, different indices are constructed, to identify enterprises that consider tax rates and tax administration major obstacles. Three indices are constructed to measure the incidence of tax obstacles as follows:

(1) T_1 is the percentage of enterprises that consider tax rates as a major or a very severe obstacle to operation and growth.

(2) T_2 is the percentage of enterprises that consider tax administration as a major or a very severe obstacle to operation and growth.

(3) T_3 is the percentage of enterprises that consider either tax rates or tax administration or both as a major or a very severe obstacle to operation and growth.

The severity of the obstacle i (S_i) is calculated as a weighted average of the degree of severity as follows (for more information about this formula see WB, 1994):

$S_i =$ (percentage of respondents by no obstacle $\times$ 0 + percentage of respondents by minor obstacle $\times$ 1 + percentage of respondents by moderate obstacle $\times$ 2 + percentage of respondents by major obstacle $\times$ 3 + percentage of respondents by very severe obstacle $\times$ 4) $\div$ 4.

The study compares the severity and effects of these two obstacles between 2004 and 2008 and also among different enterprises.

In addition, the effect of these two constraints on investment future plans is evaluated. To evaluate the difference in investment incentives between enterprises considering tax rates or tax administration a major or very severe obstacle and those enterprises that do not consider these two obstacles a major or a very severe obstacle, a dichotomous variable (E) is used. E equals one if the enterprise intends to expand capacity over the next two years and E equals zero otherwise.

Two indicators are constructed to estimate the incidence and extent of tax evasion and how it changed between 2004 and 2008; before and after applying tax reforms.

V_1 is a dichotomous variable, it equals zero if 100 percent of total sales are reported for tax purposes, and it equals one otherwise, indicating the existence of tax evasion.

V_2 measures the extent of tax evasion, it is constructed as follows:

$$V_2 = 100\% - \text{percentage of total sales reported for tax purposes}$$

3. Literature review

Tax obstacles do not only negatively affect investment incentives, but they also result in more corruption and more widespread tax evasion which in turn implies lower tax revenues.

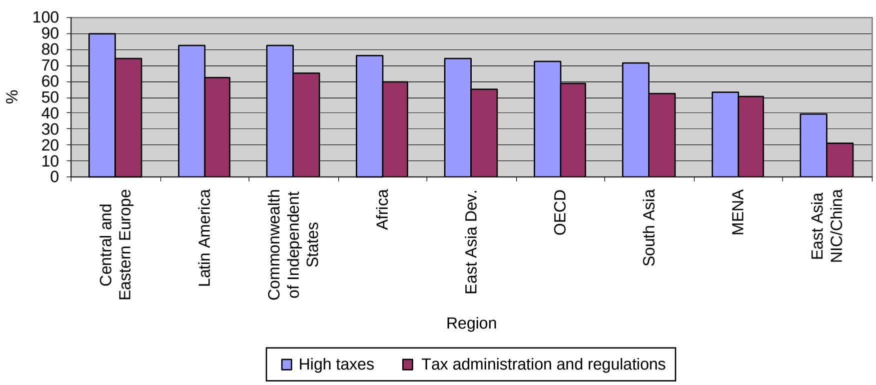
3.1 Tax obstacles and investment incentives

The value of taxes paid by an enterprise is an important cost that negatively affects its profitability and hence the incentive to invest. In addition to these direct costs, there are also indirect costs. The transaction costs constitute a very heavy burden on enterprises.

There is a general agreement in the literature on the negative effect of tax obstacles on investment. This has also been demonstrated by different surveys and empirical studies of the effect of taxes on the incentive to invest in both developing and developed economies.

The World Bank's World Business Environment Survey (WBES) (1998-2000) covered 80 countries throughout the world, plus the West Bank and Gaza. According to the responses of the sample of 10,032 enterprises (Kaufmann *et al.*, 2003, pp. 14-15), taxes and regulations is the top constraint on the activity of firms. Among tax and regulatory constraints, high taxes led in every region. Besides, tax regulations and administration led the remaining list of regulatory constraints. The majority of firms across all regions, considered high taxes and tax administration major or moderate constraints (Figure 1). Other things equal, the average growth rate of sales of firms in countries with poor conditions in four categories – financing, corruption, high taxes and business consultation – is ten percentage points less than the correspondent value in countries with positive ratings in these categories. The average growth rate of investment in the first group is more than ten percentage points less than the average growth rate of investment in the second group. Where tax policies are more constraining, firms tend more to operate unofficially.

In Doing Business reports, the aggregate ranking on the ease of doing business is based on indicator sets that measure and benchmark regulations affecting nine areas in the life cycle of a business. One of these nine main areas is paying taxes (WB, 2010a). Companies in 90 percent of surveyed countries rank tax administration among the top



Source: Constructed by the author using data from Batra *et al*. (2003, p.39)

Figure 1.
Firms considering high taxes and tax administration major or moderate constraints

five obstacles to doing business. The main factors contributing to this are: the large number of business taxes to pay; lengthy and complex tax administration; complex tax legislation; and high tax rates (WB, 2006, p. 5). Recent firm surveys in 123 economies show that companies consider tax rates to be among the top four constraints to their business (WB, 2011, p. 7).

The Paying Taxes Survey is carried out as part of the World Bank's Doing Business report which compares business regulations in more than 180 countries. It was originally launched in the 2006 report. According to the results of this survey, it is found that the design of the tax system can have significant economic impacts and can influence multinationals in deciding where to invest. Tax regimes with relatively high marginal rates and which include a number of exemptions and allowances tend to be less economically efficient in relation to encouraging investment. Such regimes generally also impose higher tax compliance and administration costs. On contrary, the simpler tax systems promote investment. One study shows a cut of one percentage point in corporate tax rates is associated with up to a 3.7 percent increase in the number of firms and up to 1.1 percent higher employment. Both business and government benefit when taxes are simple and fair (WB, 2006, pp. 5, 16).

Different empirical studies confirm the previously mentioned negative effect of higher tax rates on investment incentives.

It is found that tax environment and tax burden are significant factors when deciding about investment allocation (Szarowska, 2009, p. 8). Using data on corporate income tax rates in 85 countries in 2004 from a survey of all taxes imposed, the results show adverse impact on aggregate investment, FDI and entrepreneurial activity. A ten percentage point increase in the effective corporate tax rate reduces the aggregate investment to GDP ratio by two percentage points (Djankov *et al.*, 2010, p. 33)

The burden and severity of these obstacles are greater in developing countries. Companies in high-income economies have it easiest. Among developing countries, firms in Middle East and North African countries, businesses must comply with only 22 payments a year on average, the second lowest among regions. Yet there is great variation among countries in this region (WB, 2011, p. 11).

3.2 Tax obstacles and tax evasion behavior

Taxes are essential. In most economies, the tax system is the primary source of funding for a wide range of social and economic programs. Taxes are essential to finance public services and fulfill the state's basic functions (WB, 2011, 2006; Szarowska, 2009). This is more important among developing countries. Taxes constitute 63 percent of government revenues in low- and middle-income economies compared with 59 and 52 percent in high income economies and Euro area economies (calculated using data from WB, 2010b).

However, high tax rates and tax compliance costs usually result in tax evasion and lower tax revenues. Tax revenue depends not only on tax rates but also on firm's willingness to comply. Overly complicated tax systems risk high evasion. Businesses ranking in the bottom 30 countries on ease of paying taxes are twice as likely as those in the top 30 to report that informal payments are a problem. Russia's large tax cuts in 2001 encouraged tax compliance. Corporate tax rates fell from 35 to 24 percent, and a simplified tax scheme lowered rates for small business. Yet tax revenue increased by an annual average of 14 percent over the next three years due to increased compliance. Georgia which introduced major reductions in tax rates and simplifications to the tax system in 2004 has seen a drastic fall in perceived corruption of tax officials. In 2005, only 11 percent of surveyed businesses reported that bribery was frequent, down from 44 percent in 2002. That was the sharpest drop in perceived corruption among the 27 transition economies (WB, 2006, pp. 13, 14; 2011, p. 8).

Allingham and Sandmo (1972), Srinivasan (1973) and Yitzhaki (1974) propose the seminal theoretical models aiming to identify the determinants of tax evasion behavior. They explain tax evasion behavior based on the probability of being audited, the amount of the penalty imposed and the level of risk aversion. The relationship between tax evasion and income or marginal tax rate is ambiguous according to these models. The empirical results tend to confirm the influence of the variables as expected in the theoretical models. However, it seems also to exit a positive relationship between tax rate and tax evasion, in contrast with the ambiguous predictions of the model (Molero and Pujo, 2005, p. 1). Results of other empirical studies show that corporate tax rates are found to be positively correlated with the size of the informal economy (Djankov *et al.*, 2010). In addition, based on data for 45 countries, the results of the OLS regression show that non-economic determinants have the strongest impact on tax evasion. Complexity is the most important determinant of tax evasion. The regression results indicate that the lower the level of complexity, the lower is the level of tax evasion across countries (Richardson, 2006, p. 150). The results of a study on some East Asian economies show that tax reforms that would replace tax holidays by a reduced corporate income tax rate or a low tax on gross receipts would result in stronger incentives to invest, while government revenue increases (Botman *et al.*, 2008).

3.3 Tax reform

Tax reform is still high on government agendas around the world (WB, 2011, p. 4). However, it is more important for developing economies. This is not only because taxes as a source of public revenues are much more important in developing economies. It is worth mentioning that tax reform is needed more in developing economies also because distortions within tax systems are more severe in these economies.

Paying taxes is easiest for business in high-income economies. They have the lowest tax cost and the lowest administrative burden. In contrast, poorer countries try to levy the highest amount of tax on businesses. This pushes businesses into the informal economy. As a result, the tax base shrinks and less revenue is collected. Keeping tax rates at a reasonable level can be important for encouraging the development of the private sector and the formalization of businesses. This is particularly relevant for small- and medium-sized enterprises (SMEs), which contribute to job creation and growth but do not add significantly to tax revenue (WB, 2006, p. 13; 2011, pp. 4, 7).

Between 1982 and 1999 the average corporate income tax rate worldwide fell from 46 to 33 percent, while corporate income tax collection rose from 2.1 to 2.4 percent of national income. This outcome was achieved because more businesses entered the formal economy and because tax exemptions and other tax incentives were reduced or eliminated (WB, 2006, p. 13). Between June 2009 and May 2010 governments in 117 economies implemented 216 business regulation reforms. More than half those policy changes eased start-up, trade and the payment of taxes (WB, 2010a, p. 1).

According to the Paying Taxes Report 2011 (WB, 2011, p. 4), in the past six years, more than 60 percent of the economies covered by Doing Business have carried out tax reform that made paying taxes easier and lowered the tax burden for local enterprises. For the economies which are included in both the 2006 and 2011 studies, the tax cost has fallen on average by 5 percent, the time needed to comply by a week, and the number of payments by almost four.

Tax reforms are classified into two main reforms; reducing tax rates and reforming tax administration to make compliance easier.

However, reducing profit tax rates is still the most popular reform. According to Doing Business 2011 (WB, 2010a), tax reforms are the second most popular reforms applied. Keeping rates moderate encourages tax compliance. However, easing the compliance burden is equally important for business. Lower rates work best when their administration is simple. Economies with well-designed tax systems are able to help the growth of overall investment.

4. Tax reform in Egypt

Tax revenues have two main sources: direct taxes and indirect taxes (Figure 2).

Direct taxes are levied on:

(A) *Incomes*: Up till July 2005, personal income and corporate income taxes were levied by virtue of Law No. 157 of 1981, and its amendments (Law No. 187 of 1993). In July 2005, Law No. 91 of 2005 replaced Law No. 157. The People's Assembly passed Law No. 91 of 2005 on June 2005.

(A-1) The tax on the income of natural persons:

This tax is levied on the total net income of natural persons domiciled in Egypt and on those domiciled outside Egypt concerning their incomes that are derived from permanent establishments in Egypt. This income is derived from the following sources:

(1) Salaries and wages.

(2) Commercial and industrial activities of individuals.

(3) Professional and non-commercial activity.

(4) Immovable property.

(A-2) The tax on the income of juristic persons:

This tax is imposed on the net yearly profits of the juristic persons that are domiciled in Egypt from all their profits, whether from Egypt or abroad, and on the profits derived from a permanent establishment in Egypt in relation to juristic persons that are not domiciled in Egypt. The definition of "juristic persons" includes all types of companies, as well as foreign banks and foreign establishments, even if their head offices are situated outside Egypt and their branches are in Egypt.

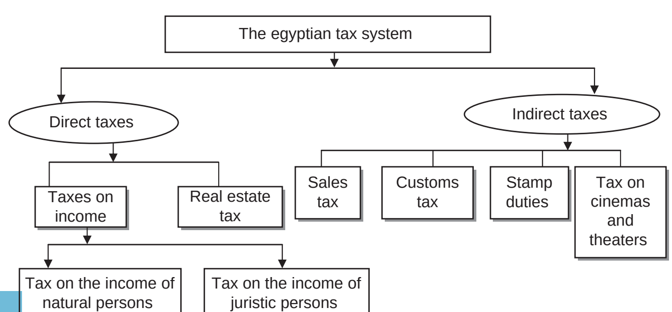


Figure 2.
The Egyptian tax system

The taxable profit of those juristic persons consists of the total revenue after deducting, the costs and expenses that are necessary for obtaining the profit.

(B) *Real estate tax*: Real estate tax is payable on the estimated annual rental value of agricultural land and built-up property. The tax rates range between 10 and 40 percent, with Cairo and Alexandria's rates having two percentage points above other cities. Tax on agricultural land is levied by virtue of Law No.113 of 1939 and its amendments. The government assesses the rental value of property every ten years. Tax on built-up property is levied by virtue of Law No. 56 of 1954.

The new Real Estate Tax Law No. 196 of 2008, replaced Law No. 56 of 1954. It is due by the owner of any real estate or any person having a usufruct right thereon, whether such person is a natural or juristic person, regardless of the real estate's size, nature and use. The taxable base of the real estate tax is the annual leasing value of the estate; the assessment of the latter has sparked some controversy concerning the accuracy of such assessment, which is carried out by a nebulous council set up in each governorate and is renewed every five years. The law provides for procedures to challenge such assessment. Property which is valued at under LE500,000 EGP, as well as property with an annual rental income of less than LE6,000 is tax exempt. Property valued above that figure will be taxed based on an assessment of its annual rental value. The law sets a 30 percent tax cut for real estate used for residential purposes and a 32 percent tax cut for real estate used for non-residential purposes. The rate of the tax is 10 percent of the annual leasing value based on the capital value of each unit. The capital value is approximately 40 percent less than the market value of the unit, as determined by the abovementioned council. The tax return in relation to said tax is paid annually on the first of January of each year.

Indirect taxes include:

(A) *Sales tax*: The sales tax was levied by Law No. 11 of 1991 on May 3, 1991. The sales tax replaced the consumption tax. The sales tax is imposed on the sale of goods or rendering of services. It is imposed on all non-exempted domestic and imported goods and services. The tax rate ranges from 5 to 42 percent according mainly to the necessity of the good. Tax rates on services ranges from 5 to 10 percent. In 2001, the second and third phases of the sales tax were implemented by virtue of Law No. 17. According to this law, all producers and importers should be registered with the Sales Tax Authority.

(B) *Customs tax*: Customs tax is imposed on imported goods. Up till September 2004, the customs tariff ranges from 1 to 55 percent and it reaches 100 and 135 percent for vehicles. In September 2004, a decree was issued to modify customs tariffs and procedures. The main objectives of this modification were (Ministry of Foreign Trade and Industry, 2005, pp. 115-16):

- To simplify customs procedures, through reducing the number of tariff bands from 27 to six only. Most national tariff lines and exemptions were eliminated.
- To reduce the burden of customs taxes. The average tariff ratio was cut from 14.6 to 9.1 percent on nearly 6,500 imported items. Besides, the decree cancelled all imports customs services fees.

Customs Law No. 66 of the year 1963 was amended by Law No. 95 of the year 2005.

(C) *Stamp duties*: According to Law No. 111 of 1980 and its amendments, stamp duties are imposed on a wide range of transactions including the execution of documents, banking transactions, etc. The value paid of stamp duties varies widely according to the transactions on which they are imposed.

(D) *Tax on cinemas and theaters*: According to Law No. 24 of 1999, this tax is imposed on tickets of cinemas, theaters and other entertainment places. The tax rate ranges from 5 to 30 percent.

As in most economies, the tax system in Egypt is the primary source of public revenues. In 2009/2010, tax revenues constituted nearly two-thirds (63.6 percent) of total revenues. Moreover, this contribution is expected to increase in 2010/2011 to 70.1 percent. Taxes are responsible for the majority of the increase in the total revenues during the period (2006/2007-2009/2010). The increase in tax revenues constituted 63.9 percent of the increase in total revenues during this period (Table I).

Before tax reform in 2005, several surveys were conducted to investigate the investment climate and the main obstacles to investment in Egypt. Taxes have been a major obstacle to investment in Egypt in all these surveys.

According to a survey conducted in 1994 on 233 firms of all sizes, covering all sectors of activity – to identify the main constraints on the private sector development in Egypt (WB, 1994), tax rates and tax administration were on the top of the list. Firms complained that tax rates were high. Besides, dealing with the tax administration was costly and time consuming, especially because the tax administration adapted "the full coverage policy."

Another two surveys were conducted by the United Nations Conference on Trade Development (UNCTAD) in 1997 and 1998 focussing on foreign investors to assess the main economic and political obstacles to investment in Egypt. The first one was in 1997 and focussed on foreign investors in Egypt using a sample of 88 TNCs, the other conducted in 1998 focused on the potential foreign investors among TNCs. The tax regime was the fourth major obstacle, coming after political stability, availability of business information and predictability of macroeconomic conditions. The major difficulties cited, in terms of the tax regime were both tax rates which were considered to be very high and the way the tax administration was operating which was considered time consuming and so costly (UNCTAD, 1999).

The Egyptian Center for Economic Studies conducted a survey in 1998 on 154 private firms, to investigate business environment in Egypt. Tax administration was on the top of the list of the major constraints limiting the operation and growth of the private sector in Egypt. Small and local firms suffer more than large and foreign firms. The main problems cited by firms concerning tax administration were lack of trust between tax collectors and taxpayers, inefficiency of the dispute system and arbitrary estimation of taxable profits (Fawzy, 1998, p. 21).

		Tax revenues (%)		
Year	Total taxes/total public revenues (%)	Direct taxes	Indirect taxes	Total taxes
2006/2007*	63.4	52.8	47.2	100
2007/2008*	62	50.4	49.6	100
2008/2009*	57.7	50.9	49.1	100
2009/2010*	63.6	50.1	49.9	100
2010/2011**	70.1	50.4	49.6	100

Notes: *Actual; **public budget
Source: Calculated using data from Ministry of Finance (2011)

Table I.
Total government revenues and tax revenues in Egypt

Among 92 developing and developed countries (WB, 2004), Egypt had the highest marginal tax rate on corporate (40 percent), except for two countries (Democratic Republic of Congo, 40 percent and Pakistan, 45 percent). In addition, among 140 countries for which the investment climate is investigated in 2005, Egypt ranked 87 according to paying taxes indicators. Comparing Egypt with MENA and OECD countries (Table II) revealed that the complicated tax administration was a more significant obstacle to investment in Egypt rather than tax rates.

The World Economic Forum, to identify key obstacles to economic growth, conducts the Executive Opinion Survey (EOS) annually. The EOS 2005 indicated eight main constraints to doing business in Egypt. Tax regulations and tax rates are the second most significant constraints in this list. The tax rate and tax regulations rank higher on the list of year 2005, compared to year 2004. Businessmen are discouraged by a high corporate tax rate and a burdening tax administration (Egyptian National Competitiveness Council, 2004, 2005).

A study conducted in 2006 using data of the Investment Climate Survey in 2004 (Abdel Mowla, 2006); before tax reforms; concluded that tax rates were the most severe obstacle to operation and growth of enterprises while tax administration was the fourth major obstacle. Based on enterprises' expectations, tax reforms were expected to have positive effects.

Realizing the significant negative impact of both high tax rates and the problems of the tax administration, the government anticipated a major reform step by issuing in July 2005, Law No. 91 of 2005 to replace Law No. 157 of 1981 and its amendments. The law has been applied to July monthly salaries. It was applied to individuals and corporations for the tax period ending December 31, 2005 or any fiscal year that started after June 10, 2005.

The new law represented a tax reform package, as other tax reform programs applied in the world, it constituted from two main reforms; reducing tax rates and reforming tax administration to make compliance easier.

Concerning tax rates, the major reforms were:

- A significant reduction in tax rates by 50 percent, to a maximum rate of 20 percent. Table III illustrates differences in corporate income tax rates before and after reforms.

Indicator	Egypt	Region (MENA)	OECD
Payments (number)	39	27.3	16.3
Time (hours)	504	241.9	197.2
Total tax payable (percentage gross profit)	32.1	35.1	45.4

Source: WB – International Finance Corporation – Doing Business (2005)

Table II. Paying taxes (2005) – Egypt

Before reform	(%)	After reform	(%)
Standard corporate income	40	Standard corporate income	20
Industrial and export companies	32	Suez canal profits, Egyptian Petroleum Authority and Central Bank of Egypt	40
Oil exploration and production companies	40.55	Oil exploration and production companies	40.55

Table III. Corporate income tax rates before and after tax reforms

- Income tax brackets are streamlined into three categories only, at rates of 10, 15 and 20 percent.
- The law exempts the first LE5,000 of gross income comparing to the previous tax exemption ranging from LE2,000 for the single to LE2,500 for the married without children to support and LE3,000 for the married with children to support. The tax exemption increases to LE9,000 in the case of income from salaries and wages.
- Ensured equality between men and women in terms of tax exemptions. This in turn guarantees a higher income for the Egyptian family.

Concerning tax administration, the major reforms were:

- Moving to a self-assessment tax regime. This is an important step away from arbitrary estimation, which is one of the most influential problems in the tax system in Egypt. Tax liability is based on information provided by taxpayers. Thus, tax disputes are expected to decrease dramatically.
- Moving away from the system of comprehensive annual audits that makes the process of tax assessment time consuming.
- The new tax law grants general amnesty for past tax evasion or other offences. This encourages firms operating in the informal sector to move to the formal sector. Thus the tax base is expected to broaden.
- Introducing high deterrent penalties against tax fraud. A self-assessment tax regime needs to be supported by effective penalties for tax fraud. The Egyptian penalty structure under Law No. 157 failed to provide a significant incentive for reporting accurate figures of sales and profits. Penalties increased to include huge fines and even jail time.
- Improving the dispute system. The appeal committee used to consist of three members who are tax authority employees. This makes the tax authority an adversary and a judge in the same time. Under the new law, the Minister of Finance instead of the tax authority appoints the committee. The committee structure is now more balanced. It consists of five members; three of them are non-tax authority employees.
- Simplifying the tax system and abolishing the tax exemptions provided in Law No. 8 of 1997 in relation to establishments that are incorporated after entry into force of the law.

5. Tax reform and investment incentives

Tax reform in Egypt, tackling the two main problems, high tax rates and problems of tax administration was expected to improve investment climate in Egypt and hence positively affect investment incentives.

5.1 Tax reform and taxes as obstacles to investment (2004-2008)

Tax reforms have resulted in a significant decrease in the incidence of tax obstacles (Table IV).

The percentage of enterprises that consider tax rates a major or a very severe obstacle (T_1) have decreased significantly in 2008 after three years of tax reform to

Incidence of tax obstacles		2004	2008
T_1*	0	21.24	53.79
	1	78.76	46.21
T_2**	0	40.37	70.06
	1	59.63	29.94
T_3***	0	19.46	48.97
	1	80.54	51.03

Notes: *Pearson $\chi^2(1) = 241.8$, Pr = 0.000; **Pearson $\chi^2(1) = 192.1$, Pr = 0.000; ***Pearson $\chi^2(1) = 206.0$, Pr = 0.000
Source: Author's calculations

Table IV.
Incidence of tax obstacles (2004-2008) (%)

only 0.59 of the percentage in 2004 before tax reform. This is the result of the sharp decrease in corporate tax rates by 50 percent (Table III).

The same result applies to tax administration as an obstacle to investment. The percentage of enterprises that consider tax administration a major or a very severe obstacle (T_2) have also decreased significantly in 2008 to only 0.50 of the percentage in 2004.

As a result, only slightly more than half of all enterprises in 2008 consider tax rates or tax administration or both a major obstacle to their growth and operation (T_3), compared with the majority of enterprises in 2004 (80.5 percent). It is worth mentioning that the incidence of the first tax obstacle; tax rates, is higher than the incidence of the second tax obstacle; tax administration, in both 2004 and 2008.

Not only had the incidence of these two obstacles decreased significantly after tax reform, but also the severity of these two obstacles (Table V).

The severity of both tax rates and tax administration as obstacles to investment decreases significantly by more than one-third; 37 percent for the severity of tax rates and 43 percent for the severity of tax administration. The severity of tax rates as an obstacle to investment is higher than the severity of tax administration.

It is worth mentioning that reforms in tax administration, especially moving away from the system of comprehensive annual audits and also away from arbitrary estimation to a self-assessment tax regime, had a more pronounced positive effect than decreasing tax rates by 50 percent.

Comparing the rank of tax obstacles among investment obstacles, it is found that in 2004, before tax reform, tax rates were the most severe obstacle to investment and tax administration was the fourth major obstacle. After tax reforms were applied, tax rates

Severity of tax obstacles	S_1*	S_2**
2004	0.787	0.621
2008	0.492	0.353
Gap (2008/2004)	0.63	0.57

Notes: *S_1 is the severity of tax obstacle 1; tax rates, as an obstacle to growth and operation of enterprises; $t(2155) = 17.4$, $p < 0.01$. **S_2 is the severity of tax obstacle 2; tax administration, as an obstacle to growth and operation of enterprises; $t(2150) = 15.4$, $p < 0.01$
Source: Author's calculations

Table V.
Severity of tax obstacles (2004-2008)

and tax administration have become less important as investment obstacles. Tax rates and tax administration have been the sixth and the ninth major obstacle in 2008 (Figure 3).

Hence, we may conclude that tax reforms have been successful in reducing both the incidence and severity of tax obstacles. However, tax obstacles are still among the ten major investment obstacles and are considered a major obstacle by almost half of all enterprises.

5.2 Tax obstacles and investment incentives

As tax rates and tax administration are still among the ten major obstacles, tax obstacles are expected to negatively affect investment incentives.

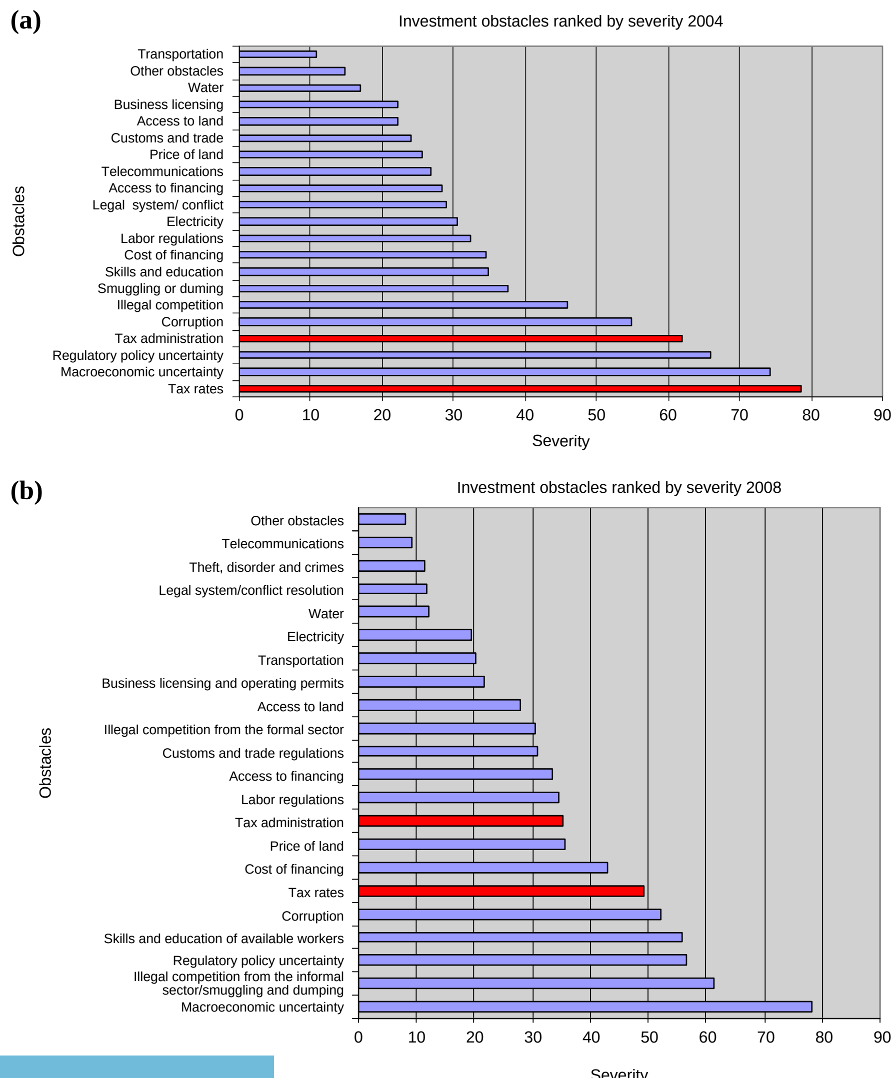


Figure 3.
Investment obstacles ranked by severity (2004-2008)

Analyzing differences in investment plans between enterprises that consider tax obstacles major obstacles to their growth and operation and enterprises that do not consider it a major obstacle, significant differences emerge (Table VI).

Investment incentives are significantly negatively affected by tax obstacles. Enterprises that consider tax obstacles major obstacles are significantly less likely to plan to expand capacity. They are more likely to reduce capacity or maintain existing capacity. They are also more likely not to have future plans.

5.3 Differences in the burden of tax obstacles among different types of enterprises

The overall incidence and severity of tax obstacles have decreased significantly in Egypt after tax reforms, however this hides differences in the burden of these obstacles among different types of enterprises. It is important to identify enterprises that suffer most from these obstacles, to identify next tax reforms needed and enterprises that should be targeted by these reforms so as to lessen the burden of tax obstacles.

5.3.1 Differences in the burden of tax obstacles by region. Table VII compares the severity of both tax rates and tax administration as obstacles to operation and growth of enterprises in urban governorates, Lower Egypt governorates and Upper Egypt governorates.

The severity of tax obstacles is highest among enterprises working in Upper Egypt governorates. The severity of both tax rates and tax administration is higher than the

	T_1**		T_2***		T_3****	
Investment future plans*	0	1	0	1	0	1
Expand capacity	44.11	34.56	43.11	31.94	46.07	33.51
Maintain existing capacity	39.30	41.51	38.65	43.88	36.75	43.68
Reduce capacity	2.16	2.9	2.04	3.58	2.01	2.98
Do not know	14.43	21.04	16.2	20.6	15.17	19.82

Notes: *Over the next two years; **Pearson $\chi^2(3) = 14.3$, Pr = 0.002; ***Pearson $\chi^2(3) = 13.8$, Pr = 0.003; ****Pearson $\chi^2(3) = 18.9$, Pr = 0.000
Source: Author's calculations

Table VI.
Investment future plans and tax obstacles (2008) (%)

Region	S_1**: tax rates	S_2**: tax administration
Urban governorates	0.484	0.314
Lower Egypt	0.458	0.349
Upper Egypt	0.556	0.412
Egypt	0.492	0.353
The relative gap*	1.21	1.31

Notes: *A relative gap measure is used to compare severity of tax obstacles. The relative gap measure used here is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio = I_x/I_r; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate); **differences significant at 0.01
Source: Author's calculations

Table VII.
Severity of tax obstacles by region 2008

average severity of both obstacles in Egypt only in Upper Egypt governorates. The gap is wider concerning obstacles of the tax administration.

The majority of enterprises working in Upper Egypt governorates are SMEs; 70.3 percent of manufacturing enterprises surveyed in Upper Egypt *vis-à-vis* 63.4 percent of all manufacturing enterprises surveyed in Egypt. In addition, poverty is highest in these governorates; the ultra poverty rate is 2.1 times higher than the average rate in Egypt (calculated using data from UNDP and INP, 2010), and educational levels are lowest. Access to many public services is relatively lower in these governorates. Thus, enterprises are less likely to be prepared to deal with tax administration and are more likely to complain about tax rates.

5.3.2 Differences in the burden of tax obstacles by the legal status of the enterprise. Table VIII illustrates differences in the severity of tax obstacles as obstacles to operation and growth of enterprises, by the legal status of the enterprise.

The severity of tax obstacles is lower than average severity in Egypt among stock companies, limited liability companies and public sector companies. It is lowest among public sector companies. The majority of these companies are large companies; they are more able to hire accountants and lawyers needed to deal with the tax system.

On contrary, the severity of both tax rates and tax administration as obstacles to operation and growth is obviously higher than average among individual, partnership and limited partnership companies. It is highest among individual companies. The majority of individual companies are small companies; 85.5 percent of individual companies compared with 11.5, 5.3 and 53.46 percent of stock companies, public sector companies and all manufacturing enterprises surveyed in Egypt. The average value of annual sales of public companies and stock companies is 8.4 and eight times higher than that of individual companies. In addition, individual companies are more likely to be owned and run by individuals and family members; 99.4 percent of individual companies compared with 67.1 percent of stock companies and 85.45 percent of all companies. Thus, they lack access to both financial resources and qualified human

Table VIII.
Severity of tax obstacles by the legal status of the enterprise 2008

The legal status of the enterprise	S_1**: tax rates	S_2**: tax administration
Individual ownership	0.61	0.449
Partnership	0.501	0.342
Limited partnership	0.509	0.35
Stock partnership	0.5	0.35
Stock company	0.393	0.297
Limited liability company	0.304	0.179
Public sector company	0.105	0.066
Other	0.25	0.167
Egypt	0.492	0.353
The relative gap*	5.8	6.8

Notes: *The relative gap measure is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio $= I_x/I_r$; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate); **differences significant at 0.01
Source: Author's calculations

resources (lawyers and accountants) needed to deal with the tax system and fulfill its requirements. The relative gap in the severity of tax administration is wider than the gap in the severity of tax rates; the severity of tax administration among individual companies is almost seven times higher than the severity of this obstacle among public sector companies.

It is worth mentioning that individual, partnership and limited partnership companies constitute more than two-thirds of enterprises (66.8 percent) while stock companies, limited liability companies and public sector companies constitute less than of one-third of all enterprises (30.2 percent).

5.3.3 Differences in the burden of tax obstacles by the ownership of the enterprise. There are significant differences in the severity of tax rates and tax administration as obstacles to growth and operation among private domestic, private foreign, private Arab and government-owned enterprises as shown in Table IX.

The severity of tax rates as obstacles to operation and growth is highest among private domestic firms, while it is lower than average severity rate in Egypt among public and private Arab and foreign enterprises. Small enterprises are more represented among private domestic enterprises than among private foreign or public companies (56.7 percent *vis-à-vis* 21.3 and 3 percent). However, it is worth mentioning that private domestic enterprises constitute the majority of enterprises (92.1 percent).

However, concerning tax administration as an obstacle to investment, the severity of this obstacle is higher among all non-government enterprises whether they are domestic or not. Public companies usually have specialized departments to deal with tax administration. Moreover, tax inspectors are less likely to doubt that a public company holds records for tax purposes different from the real ones, especially considering that these companies are subject to being audited by the Governmental Central Auditing Agency (CAA).

5.3.4 Differences in the burden of tax obstacles among exporters and non-exporters. Differences in the severity of tax rates and tax administration as obstacles to growth and operation of enterprises among exporters and non-exporters are illustrated in Table X.

The severity of both tax rates and tax administration is lower among exporters than among non-exporters. On one hand, the majority of non-exporters are small

Ownership	S_1**: tax rates	S_2**: tax administration
Private domestic	0.505	0.36
Private Arab and foreign	0.428	0.40
Government	0.227	0.12
Other	0.25	0.23
Egypt	0.492	0.353
The relative gap*	2.2	3.3

Notes: *The relative gap measure is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio $= I_x/I_r$; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate); **differences significant at 0.01
Source: Author's calculations

Table IX. Severity of tax obstacles by the ownership of the enterprise 2008

Table X.
Severity of tax obstacles among exporters and non-exporters

	S_1**: tax rates	S_2**: tax administration
Non-exporters	0.539	0.384
Exporters	0.385	0.281
Egypt	0.492	0.353
The relative gap*	1.4	1.37

Notes: *The relative gap measure is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio = I_x/I_r; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate); **differences significant at 0.01
Source: Author's calculations

enterprises; 70.2 percent compared with 17.6 percent of non-exporters are small enterprises. The average value of annual sales of among exporters is 4.3 times higher than the average value of annual sales among exporters.

The new tax Law No. 91 of 2005 have eliminated the difference in tax rates between exporters and non-exporters; as in the old tax Law No. 157 of 1981 amended by Law No. 187 of 1993, the corporate tax rate was 40 percent while it was only 32 percent on export operations' profits. However, both exporters and exporters benefited from lower tax rates according to the new law. In addition, exporters still enjoy many tax exemptions according to other laws as the Egyptian government is working on developing policies and procedures that would help increase the volume of Egyptian exports. These exemptions include:

- Concerning the General Sales Tax, goods and services exported are subject to a zero rate.
- In addition, goods that are exported are not liable to customs duty except for a number of specified goods that are subject to an export tax.
- According Article 102(17) of Customs Law No. 66 of the tear 1963 as amended by Law No. 95 of the year 2005, the customs taxes and fees as well as the service fees charged to the foreign materials that had been used in the making of local exported products shall be refunded provided that they should have been transferred to a free zone, have been re-exported or have been sold to bodies enjoying complete exemption from such taxes and fees, within a period not to exceed two years from the release date. Such period may be extended for other period(s) up to two years maximum by a decree of the Minister of Finance or whoever is delegated thereby.

Again, non-exporters constitute a higher percentage of enterprises in Egypt; more than two-thirds of enterprises (67.9 percent).

5.3.5 Differences in the burden of tax obstacles by the size of the enterprise. Table XI shows differences in the severity of tax rates and tax administration as obstacles to growth and operation of enterprises among small, medium and large enterprises.

Small enterprises suffer most from tax obstacles. Only among small enterprises, the severity of both tax rates and tax administration are higher than the average severity of both obstacles in Egypt.

Size*	S_1**: tax rates	S_2**: tax administration
Small (<50 employees)	0.558	0.405
Medium (50-99 employees)	0.425	0.294
Large (100 + employees)	0.410	0.292
Egypt	0.492	0.353
The relative gap***	1.4	1.4

Notes: *According to official statistics in Egypt, small firms are firms employing <50 workers; medium firms are firms employing 50-99 workers (ARE-Ministry of Foreign Trade Industry, 2005 and ARE-Ministry of Finance, 2005). According to Law No. 141/2004 promulgating the small establishments' development, a small enterprise shall mean every company or sole proprietorship in which the number of employees shall not be more than 50 employees. It is worth mentioning that the term "small" are some times used in literature to refer to enterprises normally classified as micro, small and medium; **differences significant at 0.01; ***the relative gap measure is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio = I_x/I_r; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate)
Source: Author's calculations

Table XI. Severity of tax obstacles by the size of the enterprise

The positive effect of tax reforms adopted in Law No. 91 of year 2005 was more pronounced for large enterprises than for small ones. These reforms did not benefit small enterprises which still consider tax obstacles major and very severe obstacles.

Small enterprises find it very difficult to fulfill the requirements of the tax system and deal with the tax administration. They lack both financial and human resources required to do so.

Concerning financial resources, the average value of annual sales of these enterprises is 29.1 and 13.8 percent of the average value of annual sales of all enterprises and of large enterprises, respectively.

On the other hand, smaller enterprises are less able to hire higher-educated workers and to pay for accountants and lawyers. On average, 45 percent of workers in small enterprises have less than secondary education. In addition while only 2.1 percent of managers of small enterprises have less than secondary education, the percentage is 6.3 times higher in small enterprises. The average years of experience of large enterprises' managers is 1.4 higher than that of small enterprises' managers. Small enterprises are less able to attract higher educated and more experienced workers. The average monthly before tax profit of a small enterprise is LE1,088, where.

Before tax profit = total revenues − total costs (excluding taxes) = total sales − total purchases of raw materials and intermediate goods including finished goods for resale − total cost of labor including wages, salaries and bonuses − rent on land and buildings − rent on machinery, equipment and vehicles − interest charges − all other costs including energy, transport, overhead expenses, etc.

If this enterprise has to hire an accountant and a lawyer to deal with the tax administration and keep accurate and reliable records to comply with the law, they eventually will go bankrupt.

According to Article No. 18 of the new Tax Law No. 91 of year 2005, the tax accounting rules and the principles and procedures for collecting the tax on profits of small enterprises shall be issued by a minister's decree. This shall be consistent with their nature and facilitate their tax treatment. However, this decree has not been issued until 2009, after the data of the survey (2008) were collected. Since 2009, rules and basics of tax accounting for SMEs were set by the Ministerial Decree 414/2009 issued by the Minister of Finance. However, these rules did not benefit the majority of small and medium-sized enterprises.

In addition, there is an unjustified discrimination in providing tax incentives to small enterprises. In the new tax law, tax exempted include profits from new projects set up by funding from the Social Fund for Development (SFD) to the extent of such funding for a period of five years from the date of starting the activity or starting production, as applicable. This exemption will only apply to those whose names were signed in the loans of the Fund. However, analyzing the main sources of finance for small enterprises, it is found that the main source of finance is internal funds and family savings; these sources finance 91.52 percent of new investments in small enterprises. On contrary, the role of government financing schemes among small enterprises is still negligible (0.23 percent).

In addition, the sales tax law imposes a severe burden on small enterprises. All and every manufacturer whose total value of sales of locally manufactured taxable and exempt goods during the 12 months preceding date of enactment of this Law reached or exceeded LE54,000. This is actually a very low benchmark, not suitable for small enterprises. This is simply because complying with this law entails regular costs that require financial resources that are unavailable to small enterprises. Theses costs include for instance, the cost of tax invoices and the cost of keeping accurate and reliable records.

It is worth mentioning that in Egypt, SMEs make up 99.86 percent of private enterprises. The SME sector in Egypt is dominated by micro enterprises (less than five workers) (91.9 percent) (calculated using data from CAPMAS, 2006).

5.3.6 Differences in the burden of tax obstacles and human resources. Quality of human resources differs between enterprises and the severity of tax obstacles differs significantly among enterprises according to the availability and quality of human resources.

Three main indicators are constructed to measure the quality of human resources available to the enterprise:

(1) H_1 is a dichotomous variable, it equals one if at least 50 percent of workers in the enterprise have a secondary education and above, and it equals zero otherwise.

(2) H_2 is a dichotomous variable, if the manager has at least secondary education, and zero otherwise.

(3) H_3 is a dichotomous variable, it equals one if the average years of experience of the manager is at least five years, and zero otherwise.

Table XII shows differences in the severity of tax obstacles according to these three indicators.

Enterprises that less than 50 percent of their workers who do not have a secondary education and those that have a manager with experience less than five years are more likely to consider tax obstacles a major and very severe obstacles to their growth and operation. Qualified human resources are needed badly to deal with the tax system.

5.3.7 Differences in the burden of tax obstacles by firm age. Table XIII shows differences in the severity of tax rates and tax administration by firm age. Enterprises

		S_1**: tax rates	S_2**: tax administration
H_1	0	0.555	0.420
	1	0.464	0.326
	The relative gap*	1.2	1.3
H_2***	0	0.552	0.394
	1	0.487	0.35
	The relative gap*	1.13	1.13
H_3	0	0.554	0.385****
	1	0.462	0.339****
	The relative gap*	1.2	1.14
Egypt		0.492	0.353

Notes: *The relative gap measure is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio $= I_x/I_r$; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate); **differences significant at 0.01; ***differences not significant at 0.1; ****differences significant at 0.1
Source: Author's calculations

Table XII. Severity of tax obstacles and quality of human resources

	S_1**: tax rates	S_2**: tax administration
Less than five years in Egypt	0.592	0.504
At least five years operating in Egypt	0.485	0.343
Egypt	0.492	0.353
The relative gap*	1.2	1.5

Notes: *The relative gap measure is the indicator ratio; it is the ratio between severity measures in the groups compared. Ratios closer to 1 indicate lower gap. Indicator ratio $= I_x/I_r$; where: I_x is the value of the severity measure for group x (the group with the highest severity rate), I_r is the value of the severity measure for the reference group r (group with the lowest severity rate); **differences significant at 0.01
Source: Author's calculations

Table XIII. Severity of tax obstacles by firm age

are divided into two groups: enterprises that have been operating in Egypt for less than five years; and the other group of enterprises has been operating in Egypt for at least five years.

The severity of both tax rates and tax administration is higher among new enterprises that have been operating for less than five years in Egypt. More than two-thirds of these enterprises are small ones (68.8 percent). It is worth mentioning that the gap is obviously wider in the severity of tax administration. The new enterprises lack experience in dealing with the tax system. Hence, the monetary and time cost of dealing with the tax system is usually higher for these enterprises.

6. Tax reform and tax evasion

6.1 Tax reform and overall incidence and extent of tax evasion

Before tax reform, tax rates were the most severe obstacle to operation and growth of enterprises while tax administration was the fourth major obstacle. Hence, many enterprises used informal methods to lessen the burden of taxes. Tax evasion was one of the most important problems facing the tax system in Egypt that the new tax law tried to overcome, through working in two dimensions:

(1) Reducing incentives for tax evasion by lowering both tax rates and tax compliance costs by moving toward a self-assessment tax regime, where firms are not threatened by arbitrary assessment. These reforms as previously mentioned have resulted in lower severity of both tax rates and tax administration as obstacles to operation and growth of enterprises. In addition, the new law granted general amnesty for past tax evasion.

(2) The amount of the penalty imposed has increased. The new tax law applied more deterrent penalties against tax fraud, including huge fines and jail time.

This raises the question about the effect of these changes on the incidence and extent of tax evasion. Table XIV shows significant decrease in both the incidence and extent of tax evasion between 2004 before applying the new tax law and 2008 after three years of applying it.

The incidence of tax evasion measured by the percentage of enterprises that may under report the value of sales so as to lessen the value of profits subject to taxes decreased significantly from 35.4 percent in 2004 to 30.8 percent in 2008, by 4.6 percentage points.

The extent of tax evasion measured by the percentage of hidden sales also has decreased from 16.7 percent in 2004 to 13.8 percent in 2008 by 2.9 percentage points.

In spite of this significant decrease, it is obvious that as tax obstacles are still among the most severe ten obstacles, tax evasion is still a problem. A little less than one-third of enterprises may under report the value of sales so as to lessen the value of profits subject to taxes. The high incidence and extent of tax evasion is related mainly to the fact that tax obstacles are still affecting more than one-half of enterprises and considered among the most severe ten obstacles. Both the incidence and extent of tax evasion is significantly higher among enterprises considering tax rates and tax obstacles major obstacles (Table XV).

Table XV shows that enterprises considering tax obstacles, especially tax administration, a major obstacle to their growth and operation are more likely to under report their sales for tax purposes and to under report a higher percentage of these sales so as to lessen the value of profits subject to taxes. Tax administration obstacles seem to be far more influential in providing the incentive for tax evasion than high tax rates.

6.2 Differences in tax evasion among different types of enterprises

As the severity of tax obstacles differs significantly among different types of enterprises, the incidence and extent of tax evasion are expected to differ also among different types of enterprises.

	V_1*: incidence of tax evasion	V_2*: extent of tax evasion
2004	35.4	16.7
2008	30.8	13.8
Gap (2008/2004)	0.87	0.83

Note: *Differences significant at 0.05
Source: Author's calculations

Table XIV. Incidence and extent of tax evasion (%)

		V_1*: incidence of tax evasion	V_2*: extent of tax evasion
T_1	0	25.8	9.9
	1	35.7	17
	The relative gap	1.4	1.7
T_2	0	25.4	11.6
	1	41.5	16.9
	The relative gap	1.6	1.5
T_3	0	22.8	9.9
	1	37.5	16.3
	The relative gap	1.6	1.6

Note: *Differences significant at 0.05
Source: Author's calculations

Table XV.
Severity of tax obstacles and incidence and extent of tax evasion 2008 (%)

6.2.1 Incidence and extent of tax evasion by region. Although the severity of tax obstacles is highest among enterprises working in Upper Egypt governorates, the incidence of tax evasion in Upper Egypt is lower than average. However, the extent of tax evasion in both Upper Egypt governorates and urban governorates is higher than the average extent of tax evasion (Table XVI).

6.2.2 Incidence and extent of tax evasion by the legal status of the enterprise. Incidence and extent of tax evasion are significantly higher than the average incidence and extent of tax evasion among individual ownership and partnership companies. These enterprises have the highest severity rates of tax obstacles, especially among individual ownership companies which as previously shown suffer most from tax obstacles (Table XVII).

On contrary, incidence and extent of tax evasion are lower among stock and limited liability companies than the average incidence and extent of tax evasion. These companies have the lowest severity rates of tax obstacles. It is worth mentioning that as expected, among public companies that have the lowest severity rates, there is no tax evasion. While profits are the main goal of private enterprises, they are important but not the most important goal to those responsible for public sector enterprises. They have no tax evasion incentives. In addition, they are subject to being audited by the Governmental CAA.

6.2.3 Incidence and extent of tax evasion by the ownership of the enterprise. Again, enterprises that suffer most from tax obstacles have the highest incidence and extent of tax evasion. Incidence and extent of tax evasion are highest among private domestic enterprises (Table XVIII). The highest severity rates of tax obstacles are highest

	V_1*: incidence of tax evasion	V_2*: extent of tax evasion
Urban governorates	23.2	16.6
Lower Egypt	38.5	10.1
Upper Egypt	29.2	15.8
Egypt	30.8	13.8

Note: *Differences significant at 0.01
Source: Author's calculations

Table XVI.
Incidence and extent of tax evasion by region 2008 (%)

Table XVII.
Incidence and extent of tax evasion by the legal status of the enterprise 2008 (%)

	V_1*: incidence of tax evasion	V_2*: extent of tax evasion
Individual ownership	40.2	21.4
Partnership	34.9	12.3
Limited partnership	28.9	10
Stock partnership	10	0.5
Stock company	23.6	10.7
Limited liability company	18.8	12.8
Public sector company	0	0
Other	8.3	8.3
Egypt	30.8	13.8

Note: *Differences significant at 0.01
Source: Author's calculations

Table XVIII.
Incidence and extent of tax evasion by the ownership of the enterprise 2008 (%)

	V_1*: incidence of tax evasion	V_2**: extent of tax evasion
Private domestic	32	14.3
Private Arab and foreign	25.5	11.2
Government	6.1	3
Egypt	30.8	13.8

Notes: *Differences significant at 0.01; **differences significant at 0.1
Source: Author's calculations

among private domestic enterprises that constitute the majority of enterprises operating in Egypt.

6.2.4 Incidence and extent of tax evasion among exporters and non-exporters. Non-exporters suffer more than exporters from tax obstacles and they also have higher incidence and extent of tax evasion (Table XIX).

6.2.5 Incidence and extent of tax evasion by the size of the enterprise. Small enterprises bear the biggest burden of tax obstacles and find it very difficult to deal with the tax administration and fulfill the tax system requirements even after tax reforms. Hence, they have the highest incidence and extent of tax evasion (Table XX).

6.2.6 Incidence and extent of tax evasion and human resources. Severity of tax obstacles were more related to the educational level of workers and experience of the manager as qualified human resources are needed badly to deal with the tax system.

Table XIX.
Incidence and extent of tax evasion among exporters and non-exporters 2008 (%)

	V_1*: incidence of tax evasion	V_2**: extent of tax evasion
Non-exporters	33.9	15
Exporters	23.7	11.4
Egypt	30.8	13.8

Notes: *Differences significant at 0.01; **differences significant at 0.1
Source: Author's calculations

However, using informal methods to lessen the burden of taxes does not depend on the educational level of human resources and it can not be the decision of those workers who have no tax evasion incentives as this eventually will not affect their returns. Hence, there is no significant difference in tax evasion between enterprises which the majority of its workers have at least secondary education and those enterprises which the majority of its workers have less than secondary education.

However, enterprises whose managers are less educated are more likely to use informal methods to lessen the burden of tax obstacles (Table XXI). They have less awareness and find it more difficult to deal with the tax system. More experienced managers are also more aware of these methods and are more likely to use it.

6.2.7 Incidence and extent of tax evasion by firm age. There is no significant difference in the incidence and extent of tax evasion by firm age (Table XXII).

	V_1*: incidence of tax evasion	V_2**: extent of tax evasion
Small	36.4	17.6
Medium	31	12.4
Large	22.6	8.7
Egypt	30.8	13.8

Notes: *Differences significant at 0.01; **differences significant at 0.1
Source: Author's calculations

Table XX. Incidence and extent of tax evasion by the size of the enterprise 2008 (%)

		V_1: incidence of tax evasion	V_2: extent of tax evasion
H_1	0	32.6***	13.1***
	1	30.2***	14.3***
H_2	0	49.5*	26.6*
	1	29.2*	12.7*
H_3	0	25.2*	11.3**
	1	33.7*	15.1**
Egypt		30.8	13.8

Notes: *Differences significant at 0.01; **differences significant at 0.05; ***differences not significant at 0.1
Source: Author's calculations

Table XXI. Incidence and extent of tax evasion and quality of human resources 2008 (%)

	V_1*: incidence of tax evasion	V_2*: extent of tax evasion
Less than five years in Egypt	30.7	10.8
At least five years operating in Egypt	30.8	14
Egypt	30.8	13.8

Note: *Differences not significant at 0.1
Source: Author's calculations

Table XXII. Incidence and extent of tax evasion by firm age

Tax evasion is more related to other characteristic of enterprises, such as the size of the enterprise.

7. Conclusion

This study evaluates the effects of tax reforms in Egypt on tax obstacles to investment and tax evasion. Tax reform in Egypt, tackling the two main problems; high tax rates and problems of tax administration was expected to positively affect investment incentives and to reduce tax evasion.

It has been found that tax reforms have resulted in a significant overall decrease in the incidence of tax obstacles and also in the severity of these two obstacles. The severity of both tax rates and tax administration as obstacles to investment decreases significantly by more than one-third. Reforms in tax administration, especially moving away from the system of comprehensive annual audits and also away from arbitrary estimation to a self-assessment tax regime, had a more pronounced positive effect than decreasing tax rates by 50 percent.

In spite of the fact that tax reforms have been successful in reducing both the incidence and severity of tax obstacles, tax obstacles are still among the ten major investment obstacles and are considered a major obstacle by almost half of all enterprises operating in Egypt. This raises questions about which enterprises still suffer most from tax obstacles especially as it has been found that investment incentives are significantly negatively affected by tax obstacles. Enterprises that consider tax obstacles major obstacles are less likely to plan to expand capacity in the future; they are more likely to reduce capacity.

The overall decrease in the severity of tax obstacles hides differences in the burden of these obstacles among different types of enterprises. The severity of tax obstacles is highest among enterprises working in Upper Egypt governorates where poverty rates are highest. It is highest also among individual companies, non-exporters, private domestic enterprises, enterprises that less than 50 percent of their workers do not have a secondary education and those that have a manager with experience less than five years, enterprises that have been operating in Egypt for less than five years and small enterprises.

The positive effect of tax reforms was more pronounced for large enterprises than for small ones. These reforms did not benefit small enterprises which still consider tax obstacles major obstacles to their operation and growth. Small enterprises still find it very difficult to fulfill the requirements of the tax system and deal with the tax administration. They lack both financial and human resources required to do so. According to the new tax law, the tax accounting rules of small enterprises should be issued by a minister's decree, to be consistent with their nature and facilitate their tax treatment. However, this decree has not been issued until 2009. These rules were set by the Ministerial Decree 414/2009 issued by the Minister of Finance. However, these rules did not benefit the majority of SMEs. In addition, there is still an unjustified discrimination in providing tax incentives to small enterprises. Small enterprises find it difficult not only to fulfill the requirements of the corporate tax system but also the sales tax system. Small enterprises which suffer most from tax obstacles constitute the majority of enterprises operating in Egypt. Hence, it is not surprising that in spite of tax reforms, tax obstacles are still among the ten major investment obstacles and are considered a major obstacle by almost half of all enterprises.

Thus, tax reforms applied in Egypt since 2005 were necessary to reduce tax obstacles to investment. However, they still are not enough to address the needs of small enterprises which constitute the majority of enterprises.

As a result, the incidence and extent of tax evasion, which was one of the most important problems facing the tax system in Egypt, have decreased. However, as tax obstacles are still among the most severe ten obstacles, tax evasion is still a problem. A little less than one-third of enterprises may under report the value of sales so as to lessen the value of profits subject to taxes. The high incidence and extent of tax evasion is related mainly to the fact that tax obstacles are still affecting more than one-half of enterprises. Both the incidence and extent of tax evasion is significantly higher among enterprises considering tax rates and tax obstacles major obstacles. There is a need to review tax accounting rules of small enterprises so as to make tax reforms more effective in addressing tax obstacles and tax evasion.

References

Abdel Mowla, S. (2006), "Taxation and improving investment climate in Egypt", Working Papers Series No. 3, Social Research Center, The American University in Cairo, Cairo.

Allingham, M. and Sandmo, A. (1972), "Income tax evasion: a theoretical analysis", *Journal of Public Economics*, Vol. 1 Nos 3-4, pp. 323-38.

Botman, D., Klemm, A. and Baqir, R. (2008), "Investment incentives and effective tax rates in the Philippines: a comparison with neighboring countries", IMF Working Paper No. WP/08/07, International Monetary Fund, Washington, DC.

Central Agency for Public Mobilization Statistics (CAPMAS) (2006), *The Census 2006 of Establishment*, CAPMAS, Cairo.

Djankov, S., Ganser, T., Mcliesh, C., Ramalho, R. and Shleifer, A. (2010), "The effect of corporate taxes on investment and entrepreneurship", *American Economic Journal*, Vol. 3 No. 2, pp. 31-64.

Egyptian National Competitiveness Council (2004), *The Egyptian Competitiveness Report 2003-2004*, Egyptian National Competitiveness Council, Cairo.

Egyptian National Competitiveness Council (2005), *The Egyptian Competitiveness Report 2004-2005*, Egyptian National Competitiveness Council, Cairo.

Fawzy, S. (1998), "The business environment in Egypt", Working Paper Series No. 34, The Egyptian Center for Economic Studies, Cairo.

Kaufmann, D., Batra, G. and Stone, A. (2003), "The firms speak: what the World Business Environment Survey tells us about constraints on private sector development", available at: http://mpra.ub.uni-muenchen.de/8213/1/MPRA_paper_8213.pdf (accessed July 20, 2010).

Ministry of Finance (2005), *Profile of M/SMEs in Egypt – Update Report*, Ministry of Finance, Cairo.

Ministry of Finance (2011), "Monthly financial report – February", Ministry of Finance, Cairo.

Ministry of Foreign Trade Industry (2005), *Economic Digest (Quarterly January-March)*, Vol. XI No. 1, Cairo, pp. 1-261.

Molero, J.C. and Pujo, F. (2005), "On the determinants of tax evasion justification", available at: http://dialnet.unirioja.es/servlet/articulo?codigo=3138294 (accessed January 20, 2011).

Richardson, G. (2006), "Determinants of tax evasion: across country investigation", *Journal of International Accounting, Auditing and Taxation*, Vol. 15 No. 2, pp. 150-69.

Srinivasan, T.N. (1973), "Tax evasion: a model", *Journal of Public Economics*, Vol. 2 No 4, pp. 339-46.

Szarowska, I. (2009), "Tax burden and competition in the European Union – does it change?", available at: http://mpra.ub.uni-muenchen.de/19934/1/MPRA_paper_19934.pdf (accessed December 10, 2010).

United Nations Conference on Trade Development (UNCTAD) (1999), *Investment Policy Review – Egypt*, UNCTAD, Geneva.

United Nations Development Program (UNDP) and the Institute of National Planning (INP) (2010), *Egypt Human Development Report 2010*, UNDP and INP, Cairo.

World Bank (WB) (1994), *Private Sector Development in Egypt – The Status and The Challenges*, The World Bank, Washington, DC.

WB (2004), *World Development Indicators 2004*, The World Bank, Washington, DC.

WB (2006), *Paying Taxes – The Global Picture*, The World Bank, Washington, DC.

WB (2010a), *Doing Business 2011 – Making a Difference for Entrepreneurs*, The World Bank, Washington, DC.

WB (2010b), *World Development Indicators 2010*, The World Bank, Washington, DC.

WB (2011), *Paying Taxes 2011 – The Global Picture*, The World Bank, Washington, DC.

WB – International Finance Corporation – Doing Business (2005), "Paying taxes", available at: www.doingbusiness.org/exploretopics/payingtaxes (accessed November 1, 2005).

Yitzhaki, S. (1974), "A note on income tax evasion: a theoretical analysis", *Journal of Public Economics*, Vol. 3 No. 2, pp. 201-2.

Further reading

Batra, G., Kaufmann, D. and Stone, A. (2003), *Investment Climate around the World – Voices of the Firms from the World Business Environment Surveys*, The World Bank, Washington, DC.

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