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Corporate Tax and Investment Decisions in Egypt

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Abstract

It is widely acknowledged that Egypt's stabilization program has been highly successful. Stabilization, albeit necessary, is not sufficient to accelerate growth. Egypt needs to foster greater investment (including foreign direct investment) to achieve the envisaged high-growth scenario. While the tax burden is only a part of the investment climate, it plays a crucial role in determining investment decisions. Moreover, the recent trends of increased globalization place new and greater demands on the national tax regimes to secure a country's tax competitiveness. The paper argues that in spite of recent tax reforms, the Egyptian tax system still undermines the efficiency and growth consideration of a good tax system. Due to high and numerous tax rates applied to a narrow base, as well as tax holidays of different duration granted to certain activities and not to others, the tax structure can be accountable for: deterring the level of investment, creating serious distortions, and leading to a large erosion in government revenues. If corporate taxation is to be reformed for growth and competitiveness, the reform agenda should include lowering corporate tax rate uniformly, along with other tax base and tax law provision changes. In parallel, the upgrading of Egypt tax incentive policy in terms of efficiency and effectiveness is also a must.

ملخص

حققت الحكومة المصرية نجاحا مشهودا فى تنفيذ المرحلة الأولـــى من برنامج الإصلاح الإقتصادى، المعروفة بمرحلة التثبيت. ولكن التثبيت – رغم ضرورته – لا يمثل بذاته شرطا كافيا لتحقيق النمو الاقتصادى. فمازالت مصر تحتاج إلى مضاعفة الاستثمارات (بما فى ذلك الاستثمار الأجنبى المباشر) حتى تتمكن من رفع معدلات النمو الاقتصادى إلى المستوى المستهدف. وبينما لا يشكل العبء الضريبى إلا أحد عناصر البيئة الاستثمارية بمعناها الواسع إلا أنه يلعب دورا مؤثرا فى قرارات الاستثمار. ويضاعف من أهمية هذا الدور ما نشاهده من تسارع قوى العالمية وتدويل الأنشطة الاقتصادية والتنافس على جذب الاستثمارات الأجنبية. وتبين الدراسة أنه رغم التعديلات الضريبية المتتالية مازال نظامنا الضريبى يفتقر إلى مقومات الكفاءة والتنافسية، ويرجع ذلك لعدة أسباب من أهمها: ارتفاع وتفاوت أسعار الضرائب على أرباح الشركات، ضيق القاعدة الضريبية، التمييز بين الأنشطة الاقتصادية المختلفة من خلال سياسة الحوافز والإعفاءات. الأمر الذى يؤدى إلى عدم تشجيع الاستثمارات من ناحية، وخلق انحرافات هامة فى نمط تخصيص الموارد من ناحية أخرى. هذا فضلا عن ضياع قدر كبير من الإيرادات على خزانة الدولة. وتقترح الدراسة حزمة من الإجراءات الإصلاحية تشتمل على خفض وتوحيد السعر الضريبى، توسيع القاعدة، تعديل بعض مواد قانون الضرائب على دخل الشركات، ورفع كفاءة الإدارة الضريبية. هذا إلى جانب مراجعة سياسة الحوافز الضريبية لرفع درجة كفاءتها من جهة وفاعليتها من جهة أخرى

I. Introduction

The Egyptian economy is at a crossroads on the path to sustainable development. Having advanced significantly towards macroeconomic stability, substantial efforts are still required to deregulate, restructure and privatize the economy to achieve high growth that is export-oriented and private sector-led. Sustainable high growth is necessary for reducing unemployment, generating job opportunities for new entrants to the labor market and improving social welfare. Looking ahead, Egypt's growth performance will be determined by its overall investment effort, particularly in the private sector, and the significant efficiency gains that the reform program should bring about.

The focus of this paper is taxation, private investment and economic growth in Egypt. The tax burden, however, is only a part of the investment climate. That is to say it is not the decisive factor, especially in developing countries where the political climate, capital markets, reliability of fiscal commitments, skills of workforce, and legal and regulatory framework—all these factors—influence the decision to invest. Still, the tax structure plays a crucial role in determining the level and pattern of investment. Moreover, the recent trends towards openness and globalization in the world economy place new and greater demands on the tax system. Integrated capital markets make the allocation of capital more sensitive to differences in national tax regimes. Differences in tax regimes between countries can result in capital flows across borders affecting both the location of investment and the ownership of capital and other resources. This, in turn, affects the pace of economic growth in competing countries. An efficient, competitive tax system is, thus, a fundamental element to enhance a country's potential for growth in a highly competetive world.

This study focuses on the efficiency and growth considerations of the Egyptian tax system. Within this context, the focus is narrowed further to examine the incentive effects of corporate taxation with respect to investment decisions. Putting the efficiency and growth objectives at the forefront of the tax reform debate, the basic questions raised here are:

- What are the investment distortions induced by the current tax law and is the tax incentive system consistent with the priorities of Egypt's growth strategy in terms of the level, pattern and location of investment?

- Is the corporate tax burden too heavy in Egypt compared to other countries? In particular, do existing tax rules and regulations hurt the competitiveness of the Egyptian economy in promoting investment and attracting foreign direct investment (FDI)?
- If corporate taxation is to be reformed for growth and competitiveness, what are the main issues that should be on the reform agenda?

To address these questions, it is necessary after the introduction (Section 1) to begin with some general considerations regarding theory and empirical evidence of corporate taxation and investment (Section 2). Using the marginal effective tax rate (METR) as a summary measure that incorporates all of the features of a country's tax system that affect the profitability of investment projects, the analysis compares the overall tax burden on marginal investments in Egypt for different activities (with and without tax holiday), alternative sources of finance and alternative organizational forms. The discussion also documents the deficiencies in the corporate tax system by analyzing two types of investment distortions: the first is embedded in the current tax law and the second is attributable to the application of tax incentives (Section 3). Next, the paper assesses the competitive status of the Egyptian corporate tax system regionally and internationally and its implications for FDI (Section 4). Finally, the paper sets out a series of proposals for reforming the corporate tax system by removing the non-neutralities discussed in the previous section, which will encourage investment and enhance its productivity in Egypt (Section 5).

II. Corporate Taxation and Investment Decisions: Theory and Evidence

The corporate tax is arguably the most well-studied tax throughout the world. Yet, there are some critics who question the need for this tax. They argue that, in the interest of transparency, taxes should be imposed on individuals, not legal entities, for it is people not corporations that pay taxes. Even though a corporation has the legal right to hold property and contract with buyers and sellers, its activities benefit the owners who own the capital, consumers who purchase its products or services and employees who provide labor. Any tax paid by the corporation must be passed on through higher prices, lower wages or lower returns on capital. Therefore, if one is to 'pierce the veil' of the legal entity of the corporation, the tax ultimately falls on individuals. Thus, in the interest of determining the impact of the tax system on the

welfare of individuals in society, why not tax people directly rather than indirectly via the corporation?

When the corporate income tax was first imposed, economists contemplated the efficiency of this levy in economic terms. The corporate tax is not a tax on the income from capital in general or even a tax on the income from the capital assets of corporations. Rather, it is a tax on the income from corporate equity capital alone. Disregarding the distortions in a simple income tax, which by its nature discriminates against savings and favors current consumption, additional distortions would be introduced by any levy that struck the income from capital a second time in addition to what is paid under a general personal income tax. The distortion becomes worse if the base of this extra tax is reduced to cover only income from corporate assets rather than income from all capital. The distortion is further aggravated if the base is further cut, so that it covers only the income from corporate equity capital (Harberger 1990, p. 35).

Before discussing the incentive effects of the corporate income tax with respect to investment, it is useful to begin with a normative argument for this tax to understand its basic role in the economy. This will be followed by a conceptual analysis of the impact of corporate taxation on firms' behavior. The next subsection briefly reviews recent evidence on taxation and investment.

Why Is There a Corporate Income Tax?

Virtually, all countries levy direct taxes on corporations. Ultimately, these taxes will be born by households, so one might think that it would be best to tax households directly rather than indirectly through their ownership of corporations. The essential question to address here is: Why are corporate taxes needed at all, given the alternative of taxing households directly through personal taxation or indirectly through sales taxes on their consumption purchases? Posing the question this way makes it clear that the corporate income tax is essentially supplementary to the personal income tax. It owes its existence to the fact that, for various reasons, an ideal tax system cannot be achieved by personal taxation alone. It is useful to distinguish three main reasons for having a corporate tax alongside personal and commodity taxes:

- The corporate tax is a withholding tax that serves as a backstop for the personal tax.

- The corporate tax is a benefit tax to ensure that corporations pay for public goods and services that improve their profits.
- The corporate tax captures the rents earned by owners of fixed factors.

The first reason is perhaps the most important rationale for corporate taxation; it is discussed briefly below.

The Withholding Function of the Corporate Tax

One way to view the corporate income tax is as a device for withholding at the source the equity capital income generated in the corporate sector. This is the conventional function of the corporate tax, at least in developed countries. The need for withholding arises because most personal income systems are designed with the intention of taxing income on a comprehensive basis as much as possible.[1] The most difficult source of income to tax, however, is accrued capital gains. Thus almost all governments throughout the world tax capital gains on realization (when assets are sold), if at all.

As a result of taxing only realized capital gains, investors can shelter their income from taxation by letting a tax-free corporation hold their assets. Only when the investor needs cash from the corporation will personal tax be paid on dividends or capital gains arising from the sale or the repurchase of shares. Thus in principle, it is possible to deduct dividends from the corporate income tax base; there is no need to withhold taxes on such income at the corporate level because it is fully taxed at the personal level. Only withholding at the corporate level is needed for retained earnings of a corporation. Accordingly, the corporate tax base would be, in principle, the following:

$$Y = R - C - Dep - I - Div \qquad (1)$$

where R = accrued revenues;

C = current costs (salaries and material expenditures);

Dep = economic depreciation (and depletion) of assets;

I = interest paid for borrowed capital; and

Div = dividends paid out.

Note that for a comprehensive income tax, the corporate tax should permit companies to deduct the economic costs of depreciation, interest expense and other costs incurred

[1] Comprehensive income, as defined by Simons, is derived from labor earnings (wages, salaries and benefits) and capital income (dividends, interest and accrued capital gains). See Henry Simons (1950), *Personal Income Taxation*.

in the production process.[2] This requires indexing profits for inflation, as well as the correct market valuation of assets, to calculate economic depreciation. This issue will be addressed again later.

Although the discussion argues for a corporate tax on retentions, governments rarely allow dividends to be deducted from the corporate income tax. In large part, this is a result of historical and legal developments that led to the notion that corporate and individual taxpayers are the same and thus both should be taxed on net income (interest expenses are deductible but not distributed profits that are paid to the owner of a business). Without dividend deductibility, the corporate tax base becomes:

$$Y = R - C - Dep - I \quad (2)$$

(revenues net of current costs, depreciation and interest expenses).

Even though legal reasoning was important for the development of the corporate income tax base, there is however, an important economic motivation for not allowing dividends to be deducted from the tax base. For many countries, the deduction of dividends would result in an erosion of the amount of taxes collected from foreign direct investment. This concern suggests another reason for governments to impose the corporate income tax on equity income, that is, a desire to withhold income accruing to foreigners. The value of withholding income from foreigners is enhanced by international tax-crediting arrangements, which result in the crediting of corporate income taxes against the corporate income taxes of capital exporters. Thus, the corporate income tax of a capital importer becomes a revenue-sharing device with foreign countries (Mintz 1996, p.142).

Under the withholding function of the corporate tax, without the deduction of dividends from the tax base, the corporation pays a tax on income on behalf of the shareholders. To avoid double taxation of dividends and capital gains earned by individuals, some adjustment is then necessary under the personal tax.[3]

In sum, the corporate income tax base in most countries includes both distributed and undistributed profits. There is much variation in the type of tax base found in

[2] 'Economic depreciation' is a loss in the value of assets from one period to the next. It is equal to the cost of replacing capital net of real capital earned by holding the asset. Further elaboration follows.

[3] Three types of integration systems are possible: (i) a refund of the corporate tax when the corporation distributes income; (ii) a refund of the corporation tax to the shareholders (for example, a tax credit); and (iii) an exemption of dividends and capital gains on corporate shares from personal taxation. The method used for integration depends on several factors that vary from one country to another. For a detailed discussion of these factors, see Maclure, C. Jr. (1979).

many countries. Table 1 in the statistical appendix compares the corporate income tax for seven developed countries.

Taxation and the Firm's Behavior

Most of the existing research has concentrated on the impact of taxes on the investment behavior of firms. A typical analysis of the effect of taxation on capital stock (the corresponding flow is investment) is to consider a neoclassical firm that is perfectly competitive in product and input markets. Given that capital decisions affect profitability over many years, the firm must formulate expectations about future economic variables (input and output prices, for example) and tax regimes (corporate tax rates, depreciation rates, and so on). Specific tax incentives for capital may also be included, such as investment tax credits and allowances, accelerated depreciation and tax holidays.

The firm maximizes the value of its equity or, alternatively, the present value of cash flow which is equal to its value of equity and debt. The firm thus chooses the optimal path of investment, taking into account relevant economic and tax variables. The firm invests in capital until the value of marginal product (less adjustment cost) is equal to the user cost of capital (Jorgensen 1963, pp. 247-59). The user cost of capital can be thought of as the 'rental' or 'lease price' of capital, which is equal to depreciation, financing and risk costs adjusted for taxes. At this point, it is useful to explain, in some detail, the cost of depreciation and financing. Risk and cost of investment is briefly discussed in Appendix B.

The Cost of Depreciation. The cost of depreciation, in economic terms, is the reduction in the value of an asset over a given period. For example, suppose a firm purchases a machine for $q_\circ$, and over a period of time, the machine physically deteriorates by an amount δ, so that only $1-\delta$ units of the machine are left at the end of that period. The reduction in the value of the machine over the period is thus equal to:

$$q_\circ - (1-\delta)\, q_1 = (\delta - x)\, q_1$$

where $x = (q_1 - q_\circ)/q_1$

The term δ-x is the *economic depreciation rate*, which is equal to the rate of physical wear and tear less the rate of real capital gains accrued from holding an asset (evaluated at the cost of replacement).[4]

The Cost of Finance. The cost of finance is the imputed cost of borrowing money from financial markets. In the absence of risk, the cost of finance, denoted as r, is equal to the net-of corporate tax cost of issuing debt and equity. If p is the nominal opportunity cost of investing equity in the firm, before the payment of personal tax, and π is the rate of inflation, the real cost of equity finance is p-π. For example, if equity owners require a 10 percent nominal return on investment, prior to the payment of personal taxes, and inflation is 5 percent, then the real cost of equity finance is 5 percent.[5] If i is the nominal bond interest rate, which is deductible from corporate taxable income at the corporate tax rate, μ, then the real cost of debt finance is i(1-μ) - π. For example, if the payable interest rate on corporate bonds is 10 percent, the corporate tax rate is 40 percent and the inflation rate is 5 percent, then the real cost of debt finance to the firm is only 1 percent.

How actual financing costs of equity and bonds relate to each other depends on corporate financial policy and arbitrage in financial markets. Given that firms seek to use those sources of finance that minimize taxes for owners, and also the deductibility of interest—as an expense—under the corporate income tax, the tax system may be expected to encourage firms to finance investment with debt. Nevertheless, corporate financial decisions also depend on the other parts of the tax system that might influence financing, such as personal taxes on capital income (dividends, interest and capital gains) and other financial transaction taxes.[6] If the proportion of investment

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[4] Note that even land 'depreciates' in economic terms; even though physical depreciation may be zero (δ=0), there may be real capital gains or losses from the holding of land.

[5] The difference between new equity and retentions as sources of new equity finance for the firm is ignored at this point. The firm's opportunity cost of retentions and new equity may differ for both non-tax and tax reasons.

[6] To see the importance of financial decisions to investment decisions, as well as the role of both corporate and personal income taxes, consider a simple case in which the firm can issue either bonds or equity. Suppose that the firm earns a rate of return (risk-adjusted) of y on capital that is distributed as either equity or bond income. An investor pays corporate taxes at the rate μ and personal taxes at the rate θ with an after-tax income of y (1-μ) (1-θ). If instead the income is paid out as interest, which is not taxed at the corporate level given its deductibility as an expense, then the after-tax earnings of the investor are y (1-m). Assuming that the investor is indifferent to bonds versus equity, it is therefore necessary for after-tax returns on assets to be the same. This implies that the tax rate on interest income should be equal to the combined corporate and personal tax on equity income: m=μ + θ (1- μ). Otherwise, investors will prefer bonds if the tax rate on bonds is less than that on equity, or prefer equity if the opposite is true. Thus, in the above discussion, it is assumed that financial arbitrage requires the gross-of-tax rate of return (y) to be the same across the assets, and the net-of-tax rate of return [(y (1-m) = y (1 - μ) (1 - θ)] to be the same across the assets. The former case is referred to as 'firm-level arbitrage', and the latter as 'household arbitrage'. See Mintz, J. (1996).

financed by debt is ß (therefore 1- ß is the proportion financed by equity) the real cost of finance is equal to:

$$r = R - \pi = \beta i\ (1-\mu) + (1-\beta)\ p - \pi \qquad (3)$$

where R is the nominal cost of finance.

The User Cost of Capital

Taking into account these depreciation and financing costs, it is possible to derive the user cost of capital, which is the minimum return needed for investment to take place. Note first, that the cost of buying a capital good is £q per unit. If the government provides an investment tax credit which reduces the corporate income tax payments by an amount equal to a percentage of gross investment, φ, the cost of each purchased capital good is reduced to £q (1-φ). In addition, when a capital good is purchased, the government provides tax depreciation deductions that are of value to the firm. If £ Aq is the present value of tax depreciation allowances,[7] the effective cost of buying an asset is equal to £q (1- φ - μA).

Under the assumption that the firm optimally chooses its capital stock, the user cost of capital can easily be derived. The return earned on the last pound of investment equals net gross income net of the corporate taxes and is given by F (1 - μ).[8] The cost of holding capital is equal to the annual cost of depreciation and financing costs multiplied by the effective purchase price of capital, (r + δ - x) q (1 - φ - μA). For optimal investment decisions, the marginal return is equal to the marginal cost of holding capital. This implies:

$$(1 - \mu)\ F' = (\delta - x + r)\ q\ (1-\varphi - \mu A) \qquad (4)$$

Under steady-state conditions, the firm holds capital stock so that the return per pound of investment is constant over time. This can be obtained by rearranging the above expression to become:

$$P = \frac{F'}{q}\ \left(\frac{\delta - x + r}{1 - \mu}\right)\ (1-\varphi - \mu A) \qquad (5)$$

[7] There are a number of schemes permitted for tax depreciation. The most common ones are initial, or investment, allowances (with an immediate write-off of a percentage of the asset) and annual allowances usually provided on a declining balance or straight-line basis. The tax value of depreciation allowances is equal to the corporate tax rate, μ, multiplied by the depreciation deduction given in each period and discounted by the firm's nominal cost of finance (R in Equation 3).

[8] Adjustment costs can be included by subtracting them from the net revenues earned by the firm as current expenses or by adding them to depreciation costs if adjustment costs are capital in nature.

The right-hand side of the equation, multiplied by the price of capital, q, has been interpreted as the user cost of capital for a firm that invests in depreciable assets such as machinery, structures and land.[9] This formula suggests that the corporate tax system affects the user cost of capital in three ways.[10] First, the corporate tax reduces gross income, thereby increasing the user cost of capital. Second, the corporate tax reduces the effective purchase price of capital through depreciation allowances and investment tax credits. Third, the corporate tax reduces financing costs by allowing companies to write-off nominal interest expenses.

It is possible to show that the corporate tax would be neutral with respect to investment decisions of a firm under a rent or cash-flow tax, if investment is expended (A = 1), there is no investment tax credit ($\varphi = 0$) and interest is not deductible ($r = ßi + (1-ß)\ p-\pi$). Under these conditions, the user cost of capital, which becomes $q\ (r + \delta - x)$, is independent of the corporate tax.[11]

Governments, however, rarely try to achieve neutrality by taxing only rents. They purposely try to influence investment behavior by giving special exemptions or deductions, such as accelerated depreciation allowances for manufacturing investments, investment tax credits for machinery and lower corporate tax rates for specific industries. Governments may also provide tax holidays for firms. Tax holidays will be discussed in more detail later in the context of the Egyptian case. Table 1 provides a list of special concessions provided by the G7 countries under the corporate tax.

[9] Other formulas, more complicated than shown above, have been derived for inventories and natural resources. See Boadway, Bruce, Mckenzie, and Mintz (1987).

[10] The above discussion is based on a model that considers capital as a stock that yields a flow of income over time (point input and flow of output process). Some types of industries, however, require capital to be built from ongoing expenditures on current inputs to produce a stock (flow of input and point output process). This particularly applies to research and development and exploration and development by resource companies and construction projects.

[11] Similarly, if the real cost of equity and debt financing is deductible, $r = (\beta i + (1-\beta)\ p-\pi)\ (1-\mu)$, and depreciation deductions are equal to economic depreciation based on the replacements cost, the user cost will be independent of the corporate income tax. See, Boadway, R. and Bruce, N. (1984), pp. 39-66.

Table 1. Special Tax Incentives: The G7 Countries, Þ94

	Canada	*France*	*Germany*	*Italy*	*Japan*	*United Kingdom*	*United States*
Tax holidays	No, except for three provinces	Two- year exemption, then a three year 50% tax holiday	No	Ten-year tax holiday	No	No	No
Investment tax credit or allowance	ITC-slow growth region, R&D	Incremental training/R&D	Yes	No	ITA-incremental R&D, import incentive, energy	ITC/grants	Incremental R&D
Tax -free zones	No	No	Yes	No	No	Yes	Partial exemptions for US possessions
Reduced tax rates	Manufacture Small businesses	Yes	No	No	No	No	Exempt earnings for qualifying export activities
Accelerated depreciation	Yes	Yes	Yes	No	No	100% in zones	Pollution equipment

Source: Mintz, J. (1996), Table (4.2), p.156.

The Effective Tax Rate on Capital

To capture the effect of all the different provisions of the corporate tax system on capital investment, it has become popular to measure the 'effective corporate tax rate' on capital (Boadway and Mintz, 1984). The effective tax rate is the amount of tax paid as a percentage of the rate of return on capital held at the margin.

It is measured with the following formula:

$$T^c = \frac{r^g - r^n}{r^g} \qquad (6)$$

with r^g and r^n being the rate of return gross- and net-of taxes, respectively. For example, in the case of depreciable capital, the gross rate of return on capital is equal to the expression for the income net of economic depreciation [F'/q - (δ - *x*)]. The net rate of return on capital is the case when all tax terms are zero; r^n, is therefore equal to the weighted average cost of finance, βi + (1-β) p-π.

Governments are innovative in assessing all sorts of taxes, beside the corporation tax, on corporate investments. The question is how do these taxes affect firms' decisions? Also, personal taxation, in particular, may be an important element in measuring the cost of capital and the effective tax rate. Appendix A elaborates on this issue.

The next section furthers the discussion on the effective tax rate (ETR) and its limitations as a measure of the tax impact on investment when analyzing the incentive effects of the corporation tax in Egypt.

Do Taxes Affect Investment Decisions? The Empirical Evidence

In order to consider the impact of taxes on investment, two approaches are adopted. The first approach is to review examples of empirical work that relies primarily on time-series data. The second is to consider the evidence on taxation and investment for a large sample of countries to see whether or not can differences in investment rates across countries be attributed, at least partially, to variation in tax policy. The following discussion highlights the results of these two approaches in turn.

Evidence on Taxes and Investment Behavior Across Time

A number of models have been used to determine how taxes impact investment decisions. There are generally three approaches used in the literature.[12]

The Accelerator Model. The first approach, developed by Clark (1917), is to link investment simply to changes in aggregate demand. The accelerator model is based on an assumption that relative prices of labor and capital do not affect the demand for capital; only output affects investment. So the impact of taxes on investment would only be through the impact on aggregate demand. The model was extended to allow for lags by assuming that output of current and past periods affect current investment.

The Neoclassical Model. The neoclassical model (Jorgenson 1963) assumes that profit-maximizing firms will use capital and other inputs in production until the marginal product is equal to the price of the factor used in production. In terms of the microeconomic theory, the demand for capital will therefore depend on both output and the rental price of capital and other factors of production. A recent neoclassical approach is to use the investment demand function, derived from the firm's maximization decision (the Euler Equation), which depends on future investment, the difference between the current and future cost or price of capital and the return on capital (with the error term depending on both technological shocks and expectation errors). Taxes play an interesting role by affecting both current and future variables. Thus it is easier to accommodate anticipated shifts in tax policy.

[12] A comprehensive review of the literature is found in Chirinko (1992).

The Q Model. The Q model, developed by Brainard and Tobin (1968) but originally conceived by Keynes (1936), is based on the notion that firms will invest in capital if the market value of projects is at least as great as the cost of purchasing capital. Q is measured as the ratio of the market value of a firm's equity and debt liabilities (the present value of its future returns) to the replacement cost of capital. If Q is greater than 1, then the firm invests in capital; if Q is less than 1, the firm will divest. In principle, the market value of the firm embodies information used by investors to evaluate discounted earnings of the firm. The Q variable is corrected by reducing the replacement cost of capital by the present value of tax depreciation allowances, as well as correcting the market value of equity and debt by personal and corporate income taxes that influence the financing of capital.

Examples of empirical work using various approaches to modeling investment behavior are provided in Table 2. Estimates of the impact of taxes on investment are also provided in terms of price and, where appropriate, output effects. Older studies of investment behavior rely primarily on aggregate time-series data. Newer studies use firm-level data (therefore both cross-section and time-series) with much better results given better information.

The overall conclusion to be drawn from recent studies is that taxes undoubtedly affect investment decisions, although the size of the effect is less clear. The firm-level studies find somewhat larger effects, but there is still considerable controversy. For example, in Devereux, Keen and Schiantarelli (1994), the existence of tax losses in the United Kingdom did not affect the estimated impact of taxes on investment even though one would expect differences between tax paying and non-tax paying companies in terms of their reaction.

Taxes and Investment: A Cross-Country Analysis

An alternative empirical approach to judging whether tax policy exerts an influence on investment, is to draw on the experience of different countries. Countries have different philosophies about taxation and different methods of collecting their revenue. The advantage of using cross-country comparisons is to consider many countries with different tax structures and investment rates in order to test the correlation between tax policy and investment performance.

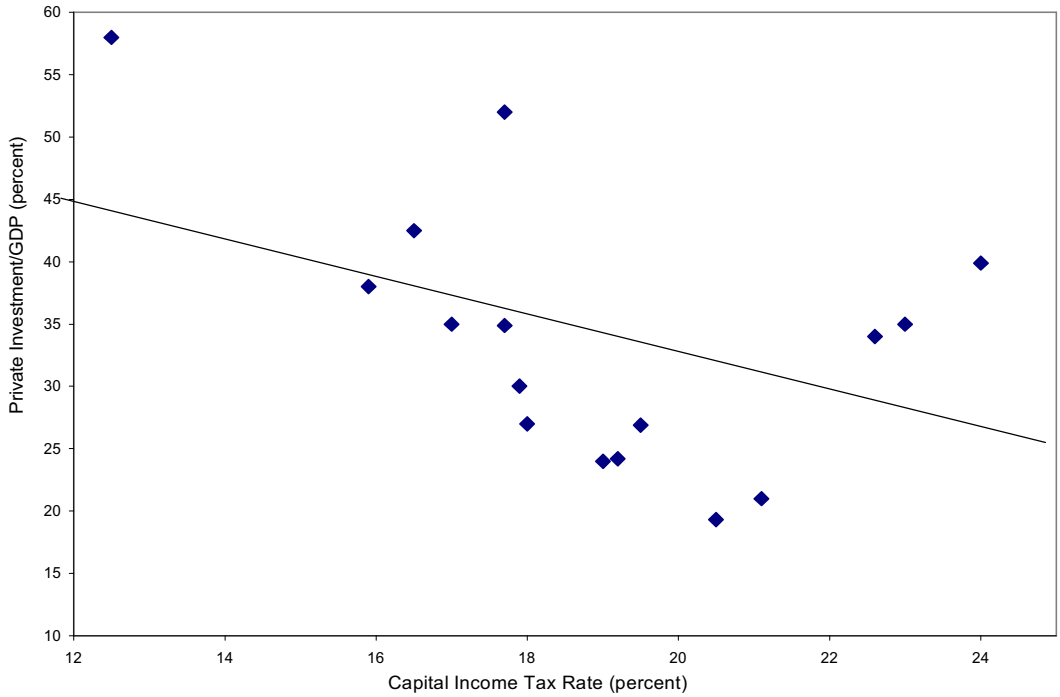
Table 2. Selected Investment Studies

Study	*Period Covered*	*Methodology*	*Results*
Hall and Jorgenson, 1967	1929-1963	Neoclassical; time series of U.S. manufacturing and non-manufacturing investments in structures and equipment.	Elasticity of capital to output varies from 0.04 to 0.13.
Summers, 1981	1931-1978	Q model with time-series investment.	Doubling investment tax credit raises investment 5.5% in the first year and 17.3% in the long run.
Feldstein, 1982	1953-1978	Time-series study based on return over cost, effective tax rate model.	Elasticity of investment to return on capital is 0.58 and to output is 0.62.
Poterba and Summers, 1983	1950-1980	Annual time series of U.K. firms using a Q model with personal and corporate tax rates.	Dividend taxes impact investment.
Chirinko, 1987	1951-1981	Similar to Feldstein study except that return on capital is lagged.	Elasticity of investment to return on capital is 0.17 and to output is 1.76.
Auerbach and Hassett, 1992	1953-1988	Use of both the Euler and Q model approaches and allowance for changes in tax rates.	Tax policy plays a significant, but not necessarily a stabilizing role in affecting investment.
Blundell, Bond, Devereux, and Schiantarelli, 1992	1975-1986	Pooled firm-level data using Q model	Increase of 10% in market value of equity increases investment by 2.5% in the short run.
Bernstein and Shah, 1994	1966-1984	Industry-level dataset for companies operating in Pakistan based on a model of the user cost of capital.	Short- and long-run impacts allowing for various policy changes. Elasticities are small but investment tax credits have the largest impact per dollar of revenue loss.
Devereux, Keen and Schiantarelli, 1994	1976-1986	Pooled firm-level data using neoclassical and Q models allowing for tax losses.	Allowing for tax losses does not improve measured impacts of tax system on investment.

Source: Mintz (1996), p.164.

In general, studies of taxation using cross-country data suggest that high tax rates have a negative impact on investment. Figure 1 shows data on the OECD countries comparing capital income taxes with investment rates. There is a moderate negative correlation between tax rates and investment rates. More detailed regression analysis suggests that a 10 percent point change in the tax rate on profits could affect investment rates by one to two percentage points at most (Engen and Skinner 1996, p. 29).

Figure 1. Capital Income Taxation andInvestment Rates, OECD Countries



Source: Mendoza, Milesi-Ferreti and Asea (1995).

It should be noted, however, that although empirical studies on taxation and investment suggest modest effects, even such small effects can have a large cumulative impact on economic growth, particularly over the long run, due to strong evidence of a positive, robust correlation between investment and growth.(Ibid, p. 29)

Aside from discouraging new investment, tax policy can distort investment decisions, thus leading to a net efficiency loss for the whole economy. Some of the most direct conceptual links between taxation and growth have traditionally been associated with the allocative impact of taxation (e.g., on the choice between leisure and labor, consumption and saving and the relative profitability of different industries). These links are based on the idea that the allocative decisions of private economic agents facing taxes are different from decisions that would be made in the absence of taxes. This tax-induced distortion in economic behavior results in a net efficiency loss to the whole economy—the so-called 'excess burden' of taxation.

A recent McKinsey (1996) study points to the potential importance of the intersectoral allocation of capital. The study notes that Japan and Germany both had much higher rates of investment, but because American investment appeared to be

allocated to more profitable sectors (i.e., higher productivity), the net increment to the effective capital stock, and hence to national income, was considerably greater in the United States despite the lower investment rate. Similarly, King and Fullerton (1984), in their study of tax systems in the United Kingdom, Sweden, West Germany, and the United States, found a strong negative correlation between economic growth and the intersectoral variability in investment tax rates.[13]

At this point, it should be noted that any empirical study must be treated with a degree of caution. A major shortcoming with almost all time-series and cross-country studies is the difficulty of appropriately measuring the marginal tax burden. The average tax rate does not reflect the marginal tax burdens hypothesized to affect economic decisions. Even statutory marginal tax rates may not adequately reflect the quite complex intertemporal incentive effects of a complex tax system.

Future investment studies should incorporate several issues. First, investment is modeled under the assumption that financing of capital is independent of investment. Yet, a simultaneity between financial and investment decisions would be expected for several reasons. Some firms may be constrained in terms of liquidity, so investment projects may be adopted only if sufficient internal sources of funds are available. Also, some types of capital, such as structure and land, may be more easily financed by debt that can use the capital as collateral.

Second, the expectations for the future have always plagued investment studies. The Q and Euler equation approaches, however, have achieved some success incorporating the expectations about future variables in the model.

Third, the analysis of taxation requires good data. The most common problem faced by researchers is that specific tax data on firms, such as the composition of depreciation allowances by type of asset, the use of tax loss carry-forward and carry-back provisions and information on more intricate aspects of tax law, probably result

[13] A simple numerical example can be used to illustrate the point that taxes do matter for a country's economic performance and that this performance can be adversely affected by non-uniform tax treatment of different investments. Suppose an economy has 100 units of capital each worth £E1. Suppose further that with either no capital taxation or uniform capital income taxation, each unit earns 8.5 percent, so that total capital income in this economy is £E8.5. Now, let the capital used on some activities be taxed at 50 percent, and those in other activities at 20 percent. Capital markets will adjust to this differential, or non-neutral taxation by shifting capital to the less-taxed sector until after-tax rates of return are equal in all activities. After this adjustment has occurred, the before-tax rate of return in the highly-taxed sector will rise to 10 percent, while returns in the less-taxed sector will have fallen to 6.25 percent; in this case, after tax, capital earns 5 percent no matter where it is used. Assume that 20 units of capital are shifted over to the less-taxed sector. In this situation, 30 units of capital will now earn 10 percent before tax, and 70 units will earn 6.25 percent before tax. Total capital income will now be 7.4 pounds (13 percent less than before). The important point is that this income loss will occur indefinitely as long as this pattern of tax differential persists. Seen in present value terms, the economic cost of such a tax-induced investment distortion is enormous. See Barents (1996), ch. 1, p. 24, and Engen and Skinner (1996), p.19.

in biased estimates of the coefficient (perhaps towards smaller values) for tax variable terms.

Finally, government decision-making is assumed to be exogenous in most investment models. But, in principle, governments react to changes in the economy, such as providing temporary investment tax credits during recessionary periods. If firms anticipate changes in government decisions, then it is necessary to model not only investment behavior but also government behavior to obtain a better understanding of investment and taxes.

To sum up this section, while the last word on taxation, investment and economic growth certainly has not been heard, Tanzi and Zee (1996) also conclude that from the perspective of the new endogenous growth theory, fiscal policy can play a fundamental role in affecting the long-run growth performance of countries. Thus, they maintain, economists should not hesitate to recommend changes in public finance instruments in the direction that theory has deemed important for enhancing growth, particularly policies to promote capital accumulation and improve the neutrality of taxation.

Meanwhile, Auerback (1995, p.158) emphasizes the importance of incorporating the effects of both tax and non-tax government policies in the analysis of investment behavior. He maintains that the methodology must be, in several respects, more general than calculations of tax wedges and effective tax rates. Its application in the context of developing countries, in particular, should throw light on the ability of policy to influence investment, the efficacy of the policies currently being pursued and the appropriate directions for reform.

III. Incentive Effects of the Corporation Tax in Egypt

In this section, the paper argues that despite recent reforms and modifications that were enacted mainly under the first phase of the Economic Reform and Structural Adjustment Program (ERSAP I) that started in 1991, to help close the fiscal deficit gap and restore macroeconomic stability, the Egyptian tax structure still undermines the growth and efficiency considerations of a 'good tax system'. Because of high and numerous statutory tax rates applied to a narrow base, together with tax incentives granted to certain activities, the income tax structure deters the level of investment and fails to offer a neutral tax treatment to different types of investments. Distortions created by the existing income tax system and the current incentive program in Egypt

are dramatic, causing serious misallocation of resources and a large erosion in government revenues, thus sacrificing efficiency considerations without even achieving the intended revenue goal.

Indeed, if the government is to recover investment and revenue simultaneously, it cannot delay a reform of Egypt's capital income tax, and in particular, a revision of the investment incentive scheme. Before considering an agenda for reform (Section 5) it is necessary to outline the main features of Egypt's income tax system and incentive program. Next, the paper examines the impact of the corporate income tax on firms' investment and financing decisions and documents some of the deficiencies in that system and other investment distortions due to tax incentives in Egypt. This analysis relies on the METR device to evaluate existing tax and incentive policies.

A Profile of the Tax Structure and Incentive System in Egypt

Tax Revenue Structure

This review of Egypt's tax revenue structure begins with a brief look at the composition of government revenues. Table 2 (Appendix C), illustrates the importance of different revenue sources for Egypt over the period between 1986 and 1995 and, for the sake of comparison, similar figures for three other Middle Eastern countries over a somewhat shorter period are presented.

In Egypt, corporate tax revenues accounted for a little over 21 percent of the total revenue in 1995. Initially, Egypt's corporate tax burden might appear to be much heavier than those of its neighbors. Table 3 below shows, however, nearly 60 percent of the corporate tax yield is attributable to the Egyptian Gas and Petroleum Company (EGPC), the Suez Canal Authority (SCA) and the Central Bank of Egypt (CBE). When an allowance is made for these activities, Egypt's corporate tax collections drop from about 22 percent of total government revenue in 1996/97 to only 9.7 percent, which is more in line with its neighbors. Nevertheless, it remains higher than other countries like Greece and Turkey, where business tax account for only around 4.5 percent of total taxation, and European countries where the average of taxes on corporate income as a percentage of total government revenue accounts for around 6 percent (Table 3 Appendix C).

Table 3. Income Tax Revenue Structure in Egypt (£E million)

	1995/96	*%*	*1996/97*	*%*
Total Central Government Revenues* of which:	55.097	100	57.808	100
Tax on Income and Profit	13.707	24.9	14.589	25.2
Business Profits	12.149	22.1	12.834	22.2
EGPC	3.111		3.195	
Suez Canal Authority	2.413		2.294	
Central Bank of Egypt	1.578		1.784	
Others	5.047		5.561	
Personal Income	1.558	2.8	1.755	3.0
Others (taxes on properties and excess duties)	0.048	NG	0.003	NG
Taxes on Business Profits (excluding EGPC, SCA and CBE) as a percent of total government revenues		9.2		9.7

*Including tax and non-tax revenue.
NG= negligible
Source: Ministry of Economy, *Recent Economic Developments and Statistics*, Part VII, 1997.

The Current Income Tax System

Both businesses and individuals are taxed on their incomes under the recently-amended Law No.187 of 1993 which superseded Law No.157 passed in 1981. Prior to the 1993 amendment, the Egyptian income tax system was scheduler in nature, since different income sources were taxed according to a separate schedule of rates and deductions. Under the global income tax of 1993, some of these schedules were unified for income tax purposes as a partial step towards a global income tax approach. Under *the unified income tax*, income earned by non-corporate firms, non-commercial professionals, and any income received from ownership of real estate is aggregated for tax purposes and subjected to the same set of tax rates and allowable deductions. The tax base for non-corporate firms (sole proprietorships, partnerships and simple limited partnerships) that are subject to the tax on commercial and industrial net profits is, for the most part, defined in a manner that is consistent with the definition of the corporate tax base. Non-corporate firms, however, depending on their income level, face six tax rates ranging from 20 to 48 percent (recently reduced to 40 percent),[14] plus a surtax of 2 percent (the development duty). Non-corporate exporters and manufacturers, however, are taxed at 70 percent and 80 percent, respectively, of the normal tax rates (after the first stratum of their net profits which

[14] As of 1998.

is £E8,000). It is convenient to think of the Egyptian income tax system as currently comprising four distinct tax schedules: (i) the unified income tax, briefly described above, (ii) a tax on wages and salaries, (iii) a tax on movable capital income and, (iv) the corporation income tax. This paper does not describe each of these taxes in detail, but focuses on the particular aspects of each schedule which has some relevance to the reform of the corporate income tax.

The *tax on employment income* is withheld at the source. On the first £E50,000, a rate of 20 percent is applicable and beyond that income level wages and salaries are taxed at 32 percent. For incomes greater than £E18,000, a 2 percent development duty is also imposed. Employee pensions receive favorable tax treatment as contributions are deductible and both pension fund earnings and benefits are exempt.[15]

The *tax on movable capital* is imposed at a rate of 32 percent on interest payments, with an exemption provided for all interest paid on bank savings deposits and on loans and security issues connected to the public sector. Movable capital revenue also includes in its base foreign dividends (net of foreign taxes) received by Egyptian residents and fees and other benefits paid to members of corporate boards. Source withholding occurs for interest payments made to both residents and non-residents. In some situations, tax treaties reduce the withholding rate on non-residents to less than 32 percent. Curiously, dividends paid abroad are not subject to the movable capital tax (MCT). The MCT is considered to be a final tax on interest income except, as noted below, when it is earned by a corporation.[16]

Joint-stock companies, limited-liability companies and partnerships limited by shares pay *the corporation income tax*. All of these entities pay tax on their worldwide net profit at a normal rate of 42 percent, including development duty, or, if the corporation is either an industrial or exporting firm, at a concessional rate of 34 percent inclusive of the development duty. Net profits are defined as accrued revenues less allowable costs. Allowable costs include: labor cost; depreciation deductions plus a 25 percent initial investment allowance for machinery and equipment purchases that reduce the depreciable basis by the amount of the

[15] Most other countries either allow a deduction for contribution and tax benefits or disallow a deduction for contributions and exempt benefits. Either approach is preferable to the current Egyptian practice which subsidizes pension saving.

[16] In 1995/96 the MCT contributed about 2.4 percent of total tax revenue, but almost all of that amount (95 percent) represented payments by the Central Bank on its holdings of old government debt. The MCT is a key issue in reforming the corporate income tax as will be explained in Section 5.

allowance; inventory costs evaluated by either FIFO or LIFO methods; interest expense and royalties; bad and doubtful debts up to a limit of 5 percent of profit; rent; 10 percent of profits legally required to be shared with employees; pension contributions up to 20 percent of payroll; and other taxes. For joint-stock companies, 10 percent of intercorporate dividends received are included in the taxable income, while 10 percent of gross interest income is also chargeable.

Finally, an Egyptian multinational can only deduct any foreign income taxes paid; there is no provision in the tax law to allow it to claim a credit for foreign taxes paid. Alongside these basic income tax provisions there are a number of special tax rules which benefit only joint-stock companies, as will be listed below.

Beside unifying the tax treatment of several income sources, the Global Income Tax (GIT) also eliminated a number of tax distortions in the previous income tax law, the so-called General Income Tax. Most importantly, dividend income became exempt from personal taxes, so that equity income—to the extent it is taxed, if taxed at all—is now taxed only at the entity level. The dividend exemption helped to create a more level-tax field by reducing the bias in favor of using debt rather than equity finance and achieving greater tax parity between private sector firms and public sector firms which have never been taxed on any distributions pursuing from their after-tax surpluses.

Without the paid-up equity capital deduction, the dividend exclusion also made the tax system neutral with respect to the choice between new shares and retained earnings as alternative sources of equity finance. If a firm can utilize the paid-up equity capital deduction, however, the dividend exclusion along with the normal privilege of depreciation deduction would result in a negative effective marginal tax rate. This means that the firm will report a loss for tax purposes and may be able to use that loss to reduce its tax liabilities on other sources of income. This situation is examined in greater detail later in the paper, where it becomes apparent that retaining the paid-up equity capital deduction creates a significant investment distortion.

Taxes on equity income were further reduced by Law 11 which abolished the stamp tax on the issued capital of all companies as of January 1, 1996, as well as the stamp tax on buying and selling securities immediately. Earlier, the stamp tax paid to register on the stock exchange was removed, but at the same time a 2 percent capital gains tax was introduced on the corporate profit derived from buying and selling shares and was repealed by a decree in 1996.

Presently, neither individuals nor companies are subject to any tax on the capital gains from securities transactions. Companies, however, are liable for corporate tax on any capital gains from the sale of real assets unless the proceeds of the gain are used to purchase a new real asset within two years of the sale. In lieu of a capital gains tax on real estate transactions, individuals must pay a 2.5 percent tax (5 percent prior to 1996) on the gross price of any real estate which they purchase.

Egyptian companies are also subject to property taxes on land and buildings, but Table 2 in Appendix C shows that their yield is minuscule in part because of exemptions which may be obtained if a structure contains a prayer room and thus is considered a religious building.

This description of the current tax law applies only to companies which do not enjoy the benefits of some form of tax incentive granted either in the income tax law or by the General Authority for Investment which dispenses tax-holiday treatment to both private and public sector firms. The issue of tax incentives is discussed briefly next.

The Current Tax Incentive System

Tax incentives are those provisions in the tax code that offer preferential treatment to some activities over others (say, manufacturing versus non-manufacturing industries), some organizational forms of business over others (incorporated versus unincorporated), and so on. The tax incentive implies a reduction in either the tax rate, the tax base or the tax liability. Tax holidays for instance are a reduction in the tax rate; accelerated depreciation or immediate write-off of investment expenditure is a reduction in the tax base; and investment tax credit is a reduction in the tax bill. Each form of tax incentive is different in the way it affects economic efficiency and in the extent to which it induces the desired behavior.[17] Evaluating alternative incentive mechanisms is discussed later in the paper.

Table 4 provides information on the incentive schemes in Egypt compared to seven other developing countries. Besides conventional investment tax credit and accelerated depreciation schemes commonly found in industrial countries (Table 1), tax holidays, sectoral incentives of various kinds, and regional and export incentives are important in Egypt as well as in other developing countries. There is however, no

[17] A tax incentive is efficient when it increases economic wellbeing. An inefficient tax incentive is one that introduces distortions that lead to a decrease in economic welfare, whereas a tax incentive is effective when it induces the desired behavior. Given that an ineffective tax incentive does not change economic behavior, it leads to windfall profits or economic rents.

investment tax credit arrangement in Egypt. Also, tax holidays in Egypt—especially under the new Investment Law No. 8/1997—and Brazil are longer than other countries.

Table 4. Investment Tax Incentives in Egypt and Selected Developing Countries

Country	*Investment tax credit (%)*	*Accelerated depreciation*	*Sectoral incentives*	*Export incentives*	*Regional incentives*	*Carry-over of losses (years)*	*Length of tax holiday (years)*
Korea	6-10	Yes	Yes	Yes	No	3	5
Brazil	None	Yes	Yes	Yes	Yes	4	15
Mexico	19-25	Yes	Yes	Yes	Yes	4	None
Nigeria	5-20[a]	No	Yes	Yes	No	4	3-5
Egypt	None	Yes	Yes	Yes	Yes	5	5-15[b]
Singapore	33.3/ 3-50[a]	Yes	Yes	Yes	No	Unlimited	5-10
Philippines	75-100[a]	No	Yes	Yes	No	N/A	4-6

a. Investment allowance.
b. Recently prolonged to 20 years for projects outside the Old Valley (Investment Law No. 8 /1997).
N/A= Not available
Source: Nagee Choon Chia and John Whally (1995), table 11-1, p. 439.

In Egypt, tax incentives can be conveniently grouped into two categories: first, tax holidays handed out under the recently issued Investment Law No. 8/1997 by the General Authority for Investment (GAFI); and second, the general investment incentives available to all firms under the general income tax code. There are, in addition, other selective incentives directed to specific kinds of firms. Next is a review of the incentives in each category.

Tax Holidays Granted by GAFI

GAFI administers the recently-issued Law No. 8 of 1997 on Investment Guarantees and Incentives, which superseded mainly, Law No. 230/1989,[18] and also unified a number of articles concerning investment incentives in a number of laws, namely, Law No. 59/1979 on New Urban Communities, Law No.1/1973 on Hotels and Tourist Establishments, and Law No.95/1995 on Financial Leasing. The Investment Law authorizes GAFI to award tax holidays to projects, regardless of their legal form, in any of the following fields:[19]

- Reclamation and cultivation of barren or desert lands.
- Animal, poultry and fish production.
- Industry and mining.
- Hotels, tourist villages, and tourist travel and transport.

[18] Except the third clause of Article 20 of that law, which concerns workers' share in the profits. For full details on Law No. 8/1997, see Ministry of Finance: Bulletin of Public Taxes Authority No. 1 (1997), pp. 43-66.
[19] According to the law, the Cabinet of Ministers may add any other needed fields.

- Transport of goods in cooling vans and cold stores for the preservation of agricultural products and food stuffs.
- Air transportation and services directly connected therewith.
- Overseas maritime transport.
- Oil services.
- Housing projects with units leased wholly empty for non administrative housing purposes.
- The infrastructure for drinking and drainage water, electricity, roads, and communications.
- Hospitals and medical treatment centers which offer 10 percent of their capacity free of charge.
- Financial leasing.
- Guaranteeing subscription in securities.
- Risk capital.
- Production of computer software and systems.
- Projects funded by the Social Fund for Development.

Note that the new investment law is basically derived from the former Investment Law 230, but it gives more incentive for investment in priority sectors, such as infrastructure, manufacturing and tourism, and it also provides an incentive structure which is geographically based with longer tax holidays for projects in areas targeted for development. Moreover, the new investment law includes three new provisions, not included in the former law: projects conducted by the Social Fund for Development will receive a 10-year tax exemption; projects outside the Old Valley, or transferred from there, will enjoy a 20-year tax holiday; tax incentives will be automatic and will no longer require the prior approval of any administrative authority.

The duration of the holiday depends on whether the firm operates inside or outside the Old Valley or in a free zone. Inside the Old Valley, the holiday begins with five years starting from the first financial year after beginning the production or initiating the activity. The holiday continues for a period of 10 years for companies within the new industrial zones and the new urban communities as well as remote areas determined by decree issued by the Prime Minister. The same applies to new projects financed by the Social Fund for Development.

Outside the Old Valley, profits of companies—whether the establishment was initially set up outside the Old Valley or transferred from it—will be exempted from

income tax for a period of 20 years (a cabinet decree will determine areas to which this provision applies).

Profits of the projects established in the free zones are not subject to the Egyptian tax and duty laws according to the Investment Law (a holiday without a time limit).[20] These projects, however, are subject to an annual duty of 1 percent applied to the value of goods entering or leaving the zone except for transit goods. Turnover of a project that is not primarily involved in importing and exporting is subject to a 1 percent tax.

It is important to note that generally firms outside the free zones are still subject to property taxes and the sales tax on purchases of capital equipment, in addition to 5 percent customs duty on these purchases.

Table 5 illustrates the distribution of tax holiday projects by location and nationality of investors. The data indicates that the majority of projects with tax-holiday status operate outside the free zones. About 80 percent of total approved projects as of January 31, 1997 were in-land projects. Also, slightly more than 72 percent of total projects were funded by Egyptian investors. The rest were funded by Arab and other foreign investors equally. Table 4 in the statistical appendix sheds more light on the distribution of the tax holidays by type of economic activity, and shows that the bulk of the approved projects is mainly industrial, in terms of the number of projects and the amount of capital invested.

Table 5. Distribution of Tax Holiday Projects by Location and Nationality of Investor, until January 31, 1997 (£E millions)

	Egyptians		***Arabs***		***Other Foreigners***		***Total***	
	Participation	%	Participation	%	Participation	%	Participation	%
In-land projects	48,439	75	8,068	13	7,484	12	63,991	100
Free-zones projects	9,845	60	3,140	19	3,406	21	16,391	100
Total	58,284	72	11,208	14	10,890	14	80,382	100

Source: GAFI (1998).

[20] There are three types of free- zone investments: a free zone city, projects established by GAFI and approved by the Council of Ministers, and privately-owned single projects approved by GAFI.

Other Investment Incentives Under the Income Tax Law

General incentives for corporate investment, under the tax law, include:

- A 25 percent investment allowance on new machinery and equipment, other than the depreciation deduction.
- A joint-stock company listed on the Egyptian Stock Exchange is entitled to claim an annual paid-up equity capital deduction equal to the product of its paid-up equity and the interest rate payable on government Treasury Bills.
- Lower statutory rate for industrial and exporting firms.
- Roll-over of capital gains on sales of real assets.
- Interest income exemption on publicly-subscribed bond issues and bank deposit interest.
- Firms that employ 50 or more people can claim a five-year tax holiday.

In addition to these general investment incentives under the income tax law, there are also selective incentives directed to specific kinds of firms. Under the income tax law, income derived from bee breeding is completely exempted from tax. New firms exclusively engaged in poultry or fish farming and land reclamation enjoy tax holidays of between five and ten years. An appraisal of Egypt's incentive system is given later.

Impact of the Corporation Tax on Investment Decisions in Egypt

Taxes add to the cost of undertaking business, but the revenues accruing to the state budget are necessary to finance public goals that support private sector development, such as transportation, networks and education. Thus, a certain amount of taxes are required, and these taxes are bound to effect business operating costs. If a tax system is poorly designed, however, then the tax structure imposes significant economic costs on the private sector that go beyond the cost of financing public expenditure.

In particular, the tax system could impede the private sector from achieving a high standard of business performance (the production of high quality goods and services offered at the lowest economic cost). On one hand, without taxes, entrepreneurs in a market economy will choose those activities that are most profitable, since profits serve as a signal to their best opportunities. On the other hand, with taxes, business performance can be affected if the tax system distorts the decisions made by firms seeking the most profitable opportunities. Instead of choosing those activities that improve business performance, firms will choose those activities that will also

minimize taxes. Thus, the best tax system that induces high economic performance is one that has the minimal impact on business decisions as previously discussed.

Using METRs to Measure Incentive Effects and Its Limitations

Before conducting any tax analysis, it is necessary to answer a basic, but difficult, question: What is the rate of taxation? Often the statutory tax rate differs substantially from the effective tax rate, as previously discussed in Section 2, because of the many features involved in calculating taxable income and the frequent use of credits, tax incentives and other taxes on investment. Also, economic factors, such as inflation, can alter the effective tax rate.

Because of these effects, the 'actual' value of taxes paid usually differs from the tax rate specified in the law. Actual tax burdens can be higher or lower than the statutory rate, depending on the presence and relative importance of the effects mentioned. To take all these effects into account, a useful summary measure, that is the effective tax rate (ETR), is commonly employed.[21] The effective tax rate indicates the degree to which the tax system, with all its ramifications and interactions with the economic environment of a country, reduces the after-tax rate of return (net) from a given before-tax return (gross). So, the thinking behind this measure leads to the question: Which tax rate if applied to a broad-based income measure would lead to the same wedge between after-tax and before-tax returns as is actually observed. In other words, for a given user cost of capital, which tax rate on broad-based or 'true' economic income would lead to the observed after-tax return (Anerbach 1995, p.142).

Despite its apparent simplicity, the concept does not give rise to a unique definition, (ibid, p. 142) with the measure depending on which taxes are included in the calculation, and what level of after-tax or before-tax rate of return is used as a benchmark. Moreover, the calculation of an effective tax rate alone does not provide enough information to infer the effects of tax policy on investment. Since the user cost of capital will result from adding the tax wedge to the after-tax rate of return, it is important to know not only how big the tax wedge is, but to what extent it leads to a higher before-tax return rather than a lower after-tax return. Even in small, open economies that must take world prices and rates of return as given, not all taxes will necessarily be fully reflected in a higher cost of capital. Some will be borne by imperfectly mobile factors, such as land and labor. Even with perfect capital mobility,

[21] See equation 6, p. 10.

some capital income taxes may be shifted abroad if they are credited by foreign governments.

Another limitation is that there are a potentially indefinite number of METRs in an economy, each one associated with a different type of investment decision. This means that there must necessarily be some selectivity or aggregation involved in presenting METR calculations.

The METR measures also presuppose a great deal about the structure of the economy and the process by which production and investment decisions are taken. For example, they typically assume competitive conditions and are often computed for a risk-free environment—or at least one in which firms maximize only 'expected returns.' The financial structure of firms is also usually taken as given, although it is possible to measure the incentive effect of the tax structure on the financial structure of the firm. In the absence of an accepted financial theory, it is necessary to adopt some arbitrage assumption for the firm. This is because the tax structure treats different types of financing differently, and there are different tax wedges for different types of financial instruments. It is necessary to specify which side of the market bears the differential tax.

Moreover, the behavior of the firm is modeled simply as maximizing the present value of dividends to shareholders. Problems of management and labor, such as incentive problems of the principle-agent sort that have figured so prominently in both labor economics and the theory of finance, are essentially assumed away. Finally, the theory typically treats capital decisions as perfectly divisible. In fact, many types of capital decisions are 'lumpy', and the usual problems of nonconvexities arise. These are best dealt with on a case-by-case basis (Boadway and Shah 1995, p. 59).

In spite of these limitations, the effective tax rate concept is a popular one that can be useful in comparing the relative incentive to invest in different sectors (manufacturing vs. services, etc.), in different assets (land vs. building, vs. machinery), different financial instruments, and different organizational forms. Using the METR can also be useful in comparing tax systems of different countries and the returns to foreign direct investment.[22] Therefore, the following analysis uses some METR calculations made in recent studies for investment decisions in Egypt (World Bank 1995; Barents 1996).

[22] For valuable information about the marginal effective tax rate approach and its productive uses see Dunn and Pellechio (1990).

Investment Distortions Created by the Current Corporate Tax Law

When a country's tax system fails to treat alternative investment opportunities in an even-handed or neutral fashion, investors' decision making is distorted thus diminishing the productivity or efficiency with which that country's investment resources are used. Table 6 illustrates how current Egyptian tax law treats investment differently according to sector, method of finance and organizational form. The base case scenario reveals the size of the METRs that would prevail in the absence of any special tax incentives for corporate firms (apart from 25 percent investment allowance for machinery and equipment).This base case is a benchmark against which the effects of numerous incentives in current law can be gauged (Barents 1996, ch. 1, p. 16).

Based on Table 6 the following points should be noted:

Base Case. Current income tax law discriminates sharply among different types of investment. Intersectorally, investments in manufacturing and export activities are favored by the tax system over investments in non-manufacturing activities and services. The METR for manufacturing firms is 26.4 percent, while that for service firms is much higher at 37.3 percent. The higher ETR on services relative to manufacturing is due mainly to a higher nominal rate on services, 42 percent, compared to 34 percent on manufacturing, in the general corporate income tax law.

Table 6. Marginal Effective Rates Under Current Income Tax Law

	Alternative Cases for Investments	***METR (%)***
Base Case	Corporate firms:[a]	
	- Manufacturing firms	26.4
	- Service firms	37.3
Case 2	Non-corporate firm	45
Case 3	- Corporate manufacturing firm using:	-26
	- Complete debt finance	
	- Equity finance with the paid-up equity deduction	
	- Any mix of debt and equity enjoying the paid-up equity deduction	
Case 4	Corporate manufacturing firm financed by retained earnings	50.5

[a] In the absence of any tax incentives.
Source: Barents (1996), ch. 1, table 2.

Case 2. Non-corporate businesses are taxed much higher, at 45 percent, than corporate firms, which are taxed at much lower effective rates depending on the type of activity (base case). The only privilege enjoyed by partnerships and sole proprietors that is unavailable to joint-stock companies is in the area of loss treatment. Any losses incurred by non-corporate business can be offset against other sources of income under the unified tax while joint-stock companies can only carry their losses forward for up to five years.

Case 3. A joint-stock company that is entitled to the paid-up equity capital deduction gets a 'tax subsidy' as does any corporate investment that is purely debt financed. In both cases, a negative METR prevails (-26 percent), which implies that the firm is reporting tax losses which may be used to reduce tax liabilities on income from other investments.

Case 4. With paid-up equity capital deduction, both debt and new share issues are more attractive sources of investment finance than retained earnings, which face a relatively high effective tax rate of 50.5 percent if they are used to finance a marginal investment project.

Tax holidays, discussed fully later in this section, only accentuate this pattern of tax-induced discrimination among investments, and give more impetus for investment decisions to be based on tax rather than profit considerations. Under the current tax system, minimizing taxes may become a more important objective for Egyptian investors than maximizing before-tax profits.

The other mentioned recent study by the World Bank (1995) confirms nearly the same conclusions, while providing additional details on differential tax treatment of capital assets.[23] The study completed METR calculations for specific investments in machinery, structures, inventories, and land, for both manufacturing and service activities. Estimates were undertaken for 'The Base Case' (no special incentive) and the 'Tax Holiday Case'. Table 7 sheds more light on varying tax treatment of different activities and different assets in the base case; the holiday case will be discussed later. The METRs presented in Table 7 refer to Egyptian firms owned domestically (estimates for foreign-owned companies are provided below). The estimates are based

[23] For more information about the methodology used to estimate METRs and the assumptions made See, World Bank (1995), ch. 2, annex 2.2.

on the assumption that 38 percent of investments in both types of industries are financed by debt.

Table 7. Corporate Effective Tax Rates for Domestic Egyptian Firms (Percent)

	*Manufacturing (base case)**	*Services (base case)**
Machinery	32.4	46.2
Building	27.8	37.1
Inventories	56.7	64.5
Land	-19.3	-33.4
Total	27.2	38.1

* The Base Case (no tax incentive).
Source: World Bank (1995), Table 2.3, p.62.

According to Table 7 the effective corporate tax rate is around 27 percent for manufacturing and 38 percent for service.[24] Note that these estimates are quite close to the Barents' estimates (Table 6). The main conclusions drawn from these calculations are the following:

(i) The tax system is favorable to manufacturing. The higher effective tax rate on services reflects the higher corporate income tax rate (42 percent) applied to non-manufacturing companies compared to manufacturing companies (34 percent), as previously mentioned. Given the importance of services to exports, the discrimination of the tax system against investment in services can be counterproductive in encouraging nontraditional industries to expand their production and exports.

(ii) The tax system discriminates against investment in machinery and inventories. Under the base case, in the absence of a tax holiday, machinery is taxed at a rate of almost 32 percent in manufacturing and 46 percent in services, while inventories are taxed at a rate of 56 percent in manufacturing and 64 percent in services. The higher effective tax rate on machinery is surprising, since the government provides a 25 percent initial allowance for most types of capital equipment. Nevertheless, the value-added tax on capital equipment (firms cannot obtain an input tax credit) along with inflation (estimated at 12 percent) which quickly erodes the value of annual depreciation allowance result in a relatively high effective tax rate on capital. [25]

(iii) Inventories are highly taxed because most Egyptian businesses use the FIFO method for the valuation of inventories, although they are permitted to use LIFO.

[24] Taxation of petroleum is not considered in this study, since this industry operates in Egypt under special arrangements. Taxation of agriculture is also not considered except in so far as it is relevant to agricultural processing as part of manufacturing.

[25] The failure to allow input crediting under the sales tax for purchases of capital goods acts as a deterrent to investment as it adds, depending upon capital intensity, as much as 5 to 10 percentage points to the METR on most investments. See Barents (1996), ch. 1, p. 18.

During times of inflation, the effective tax rate on inventories is high because the FIFO method results in the taxation of nominal profits from holding inventories. If the LIFO method were used, the effective tax rate would be comparable to that on land.

(iv) The effective tax rate on land is negative, implying that investments in land used for production will result in losses for tax purposes, even though land investment itself is profitable. The source of tax losses is the deductibility of interest expenses, unadjusted for inflation. When a business is able to write-off interest expense unadjusted for inflation, the owners earn a capital gain on the loss in the real purchasing power of the debt's principal. This capital gain is untaxed, thereby providing a significant benefit to the company. When an asset generates losses for tax purposes, it helps shelter income on other investment activities from taxation.

Impact of the Tax System on Firms' Financial Decisions

These estimates of the effective tax rates on capital ignore the impact of personal taxes on capital income (dividends, capital gains and interest). Also, such estimates are based on a given debt-asset ratio of 38 percent. In Egypt, dividends and capital gains are largely untaxed, except for the 2 percent tax on capital gains on shares. Interest may be subject to a 32 percent withholding tax or may be exempt altogether. In addition, joint-stock companies may deduct an imputed interest charge for paid-up capital. Also, the 0.8 percent and 1.2 percent stamp duties might apply to share capital on an annual basis.

Table 8 estimates effective tax rates on capital for domesticly-owned companies depending on the type of finance whether it is: (i) debt, (ii) retained earnings, or (iii) new equity issues. These effective tax rates are also presented on a disaggregated basis for corporate and personal effective tax rates on capital.

(i) Debt finance. In the case of debt finance the exemption of interest expense has a considerable impact on the ETR. When manufacturing and service firms finance all their capital with debt from which interest is exempt, the ETR on capital is -67.5 percent and -68.6 percent, respectively. Given that the personal tax rate on capital is virtually zero, the impact of debt finance is to reduce the effective corporate tax rate substantially from about 30 percent to about -65 percent.[26]

[26] As mentioned before when the ETR is negative, it implies that the company is incurring losses for tax purposes. These losses on marginal investments have to be claimed against income on infra-marginal investments in order to be effectively used. Otherwise, the losses will be carried forward (for up to 5 years in Egypt), and the effective tax rate will not be as low as that shown in Table 8.

Table 8. Effective Tax Rates on Capital (Alternative Sources of Financing) (%)

	Corporate Effective Tax Rates	*Personal Effective Tax Rates*	*Aggregate Effective Tax Rates*
MANUFACTURING			
All Debt			
a) Interest income exempt from taxes	-67.5	0.0	-67.5
b) Interest income not exempt from taxes	-67.5	68.0	1.7
All Retained Earnings	54.0	3.4	55.0
New Equity Issues			
a) With pre-paid capital deductions	3.5	0.0	3.5
b) Without pre-paid capital deductions	50.5	0.0	50.5
SERVICES			
All Debt			
a) Interest income exempt from taxes	-68.6	0.0	-68.6
b) Interest income not exempt from taxes	-68.6	68.0	-1.8
All Retained Earnings	65.1	3.4	66.2
New Equity Issues			
a) With pre-paid capital deductions	7.5	0.0	7.5
b) Without pre-paid capital deductions	59.9	0.0	59.9

Source: World Bank (1995), Table 2.4, p. 65.

When interest is taxed at a rate of 32 percent under the movable capital tax, the ETR on capital is 1.7 percent and -1.8 percent for manufacturing and services, respectively. The ETR on savings is particularly high at 68 percent, resulting from personal taxes imposed on interest income unadjusted for inflation. Part of the interest income paid to the lender includes compensation for the erosion in the purchasing power of the bond's principal. A tax on interest income, unadjusted for inflation and equal to 32 percent, results in a much higher tax on interest, adjusted for inflation. For example, if the rate of interest is 18 percent and inflation is 12 percent, then the interest rate, unadjusted for inflation is 6 percent. A 32 percent tax on nominal interest (18 percent) implies an effective tax rate on real interest close to 100 percent (32 x 18 = 5.8 divided by 6).

There still remains a tax benefit from financing capital with debt even when interest is taxed at the personal level. There are two reasons for this. First, the corporate tax rate, especially for services, is higher than the personal tax rate on movable capital (32 percent). Thus, the value of interest deductions for the company is higher than the personal tax on interest. Second, in the presence of inflation, the tax value of deducting interest, unadjusted for inflation, is more valuable to the firm at its higher corporate tax rate than to the individual who pays tax on nominal interest receipts.

(ii) Retained earnings. When retained earnings are used to finance capital, the effective tax rate on capital is approximately 55 percent for manufacturing and 66 percent for services. Investments financed by retained earnings are taxed much higher than investments financed by debt. Again, the primary source of difference is due to the deductibility of interest expense, unadjusted for inflation.

(iii) New equity financing. The deductibility of the imputed financing cost of pre-paid capital, according to the Egyptian law, has a considerable impact on the effective tax rate of capital financing by new issues. This deduction can be viewed as an alternative to deducting interest expense on debt. This makes the ETR drop to 3.5 percent for manufacturing compared to 50.5 percent without the deduction. The deduction virtually wipes out the corporate tax on equity income when capital is financed by new share issues. As individuals are not taxed on dividends received, then the pre-paid capital deduction shelters marginal investments financed by equity at the corporate level.

Thus, the corporate and personal tax system in Egypt favors debt financing since interest deductions enable the investor to avoid paying corporate income taxes. Although this can be somewhat offset by taxing interest at the personal level, the higher corporate tax rate relative to personal tax results in a tax benefit to the investor. New equity financing is encouraged when companies can deduct the imputed cost of pre-paid capital. This deduction, however, is only available to joint-stock companies and is somewhat offset by the stamp duty that applies to share capital at the time of incorporation.

One of the issues to be considered is whether all forms of capital income should be relieved from taxation. This could be achieved in one of two ways. The first way would be to exempt the return on savings from taxation under the income tax. This

could be done by exempting interest, dividends and capital gains all together and eliminating stamp duties. Alternatively, the government could shift from collecting taxes on income to taxing consumption (i.e., reduce income tax rates in favor of increased VAT rates). Both policies would reduce the distortions imposed by the tax system on different sources of financing, while at the same time reducing the tax rate on savings.

Taxation and Choice of Organizational Form

Current Egyptian tax law sharply discriminates among different types of investments, not only by sector and the type of financing, but also among investments according to their organizational form. Corporations, especially joint-stock companies, are taxed relatively lightly in comparison with non-corporate forms of businesses, except when financed by retained earnings as noted in Table 4.

The tax provisions in the Egyptian law that favor joint-stock companies over other forms of organization include:

- Joint-stock companies may deduct the imputed cost of paid-up capital financing.
- Joint-stock companies have lower annual stamp duties on share capital compared to other businesses.
- Joint-stock companies, limited-liability companies and partnerships limited by shares are taxed at the rate of 42 percent or 34 percent for manufacturing. Sole proprietorship and general and other partnerships are taxed at a rate as high as 50 percent on commercial and industrial profits when income is above a certain level. Recently, the top rate was reduced to 40 percent.
- Joint-stock companies only pay tax on 10 percent of dividends received from other companies, while other types of companies and businesses are taxed on 100 percent of dividends received.
- Only a joint-stock company can claim a five-year tax holiday if it has 50 employees or more.

As noted previously, the only privilege non-corporate businesses have that is unavailable to joint-stock companies is in the area of loss treatment. Any losses incurred by a non-corporate business can be offset by other sources of income under the unified tax while joint-stock companies can only carry their losses forward for up to five years.

At this point it is necessary to point out that many of the financial and business arrangements favored by the tax law are not the ones that are widely adopted in Egypt. For example, publicly-listed corporations are not the primary form of business activity. Moreover, non-corporate firms play an important role in the economy, in spite of their tax disadvantages. It appears that these characteristics of the business sector reflect various regulations that are outside the scope of the tax system.

Needless to say, this tax bias against non-corporate firms and smaller corporations is a sharp discouragement to market entry—a major source of innovation and potential competition in most countries.

The main conclusion to be drawn from this discussion is that the Egyptian tax law contains some serious investment distortions. In addition, the failure to allow 'input crediting' under the sales tax for purchases of capital goods creates a further investment bias. In the first place, this practice acts as a significant deterrent to investment as it raises the METR on most investment, depending on capital intensity. Moreover, it creates a bias against investment in sectors, industries and firms that are by nature capital intensive. The further imposition of customs duties on capital goods only compounds the problem. The next section examines tax holidays and how they add to this pattern of tax-induced discrimination among different investments.

Tax Holidays and Investment Distortions in Egypt

The tax holiday is the principal form of corporate tax incentive currently applied in Egypt. As mentioned previously, tax incentives are widely used by developed and developing countries alike to foster industrial and technological development. In principle, if tax incentive programs are to contribute to a country's economic welfare, the benefits should exceed the costs.[27] Nevertheless, the benefits and costs of these program are difficult to measure, in large part because the efficacy of these programs in inducing new investment is unknown. In Egypt, however, it is a common assumption that any incentive programs will have social benefits that outweigh the social costs. Recognizing that tax incentives are here to stay, it becomes important to examine alternative incentive mechanisms and to compare their relative merits with that of the tax holiday, which is the applied scheme in Egypt (Section 5). First, the

[27] A pure case, or 'first best scenario,' of tax incentives (or subsidies), exists whenever external economies are present, that is when, under a free market arrangement, the marginal social benefit of an acitvity exceeds the marginal social cost. The failure of the 'invisible hand' to reach the maximization of social welfare calls for a 'Pigovian tax incentive' to subsidize such an activity. An impure case, or 'second best', arises when economic

analysis considers some of the most serious economic distortions induced by the current tax holiday regime.

METRs on Tax Holiday Investments

Under a tax holiday, the qualifying company, usually a new company, is exempt from paying taxes for several years. Once the holiday is over, the firm begins paying corporate income taxes. Thus, when a firm invests in long-lived assets, such as structure, the government taxes the income after the holiday is over, and this can effect the cost of capital during the holiday. As Mintz (1990) shows, the holiday investment will bear taxes if the tax depreciation allowances after the holiday are of less value than the economic depreciation cost (Mintz 1990, pp. 80-102). This will happen when tax depreciation allowances are not indexed for inflation, so the real value after the holiday is eroded by inflation, or when governments provide fast write-offs. For example, with a cash-flow tax a company loses the value of expensing during the holiday and will pay taxes on income generated by holiday investments when the holiday is complete. In some circumstances, holiday investments can be taxed more highly than normal investments if inflation or tax depreciation rates are sufficiently high that the firm's real value of tax depreciation after the holiday is insignificant.

Thus, marginal effective tax rates on 'tax holiday investments' are not normally zero, as one might believe. On one hand, a zero-rate would only occur if the capital assets were entirely used up before the end of the tax holiday. In addition, in Egypt, tax holiday firms operating outside free zones are subject to property taxes and the burden of sales tax and customs duty is imposed on their purchases of capital equipment. This makes the METRs for tax holiday investments positive rather than zero. On the other hand, if a firm with a tax holiday manipulates and takes full advantage of its transfer pricing opportunities, the METR on holiday investment is likely to be negative. In this case, even if it were desirable to target the holiday incentive to a particular activity, it would not be possible to do so, as transfer pricing will diffuse the benefits of the holiday to other activities. This point will be addressed again later.

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policy in general, or tax policy in particular, is distortive. In both cases, the use of tax incentives can be economically efficient. See Bator (1958), pp. 351-379.

According to the Egyptian law, tax holidays can vary in length. Table 9 provides estimates for 5-, 10- and 15-year holidays, assuming that the investment takes place in the first period of the holiday. For comparison, the table also provides estimates for the effective corporate tax rates for holiday investments made prior to the end of the holiday period.

Table 9. Corporate Effective Tax Rates, Domestic Egyptian Firms (percent)

	Manufacturing					***Services***				
		Tax Holiday Case					*Tax Holiday Case*			
	Base Case	1 yr	5 yrs	10 yrs	15 yrs	Base Case	1 yr	5 yrs	10 yrs	15 yrs
Mach.	32.4	54.5	32.5	28.0	27.5	46.2	54.3	38.4	35.3	35.1
Bldg.	27.8	25.5	20.1	17.0	15.8	37.1	27.9	22.1	18.8	17.5
Inv.	56.7	0.0	0.0	0.0	0.0	64.5	0.0	0.0	0.0	0.0
Land	-19.3	0.0	0.0	0.0	0.0	-33.4	0.0	0.0	0.0	0.0
Total	27.2	36.1	20.8	17.4	16.9	38.1	39.0	26.0	23.2	22.6

Note: the abbreviations Mach., Bldg. and Inv. stand for Machinery, Building and Inventories, respectively.
Source: World Bank (1995), Table 2.3, p.62.

As can be seen from Table 9, though tax holidays still favor investments in manufacturing over investments in services, as in the non-holiday case, tax holiday investments result in lower effective tax rates for both activities, except for investments made towards the end of the holiday. Moreover, tax holidays discriminate against investments in depreciable assets that have a longer life than short-term assets, such as inventories, as previously discussed. The effective tax rate on inventories is zero, while that on machinery and buildings is positive. Clearly, discouraging long-term investments could hurt the economy deeply.

The effective tax rates are also lower the longer the holiday period. In fact, the effective tax on capital for companies enjoying tax holidays is highest in the year prior to the end of the holiday. In the year just prior to the end of the holiday when the investment is undertaken, tax deductions have no value to the firm (e.g., the initial allowance for machinery, annual depreciation allowances, interest deductions), even though the asset will generate income after the holiday period.

Thus in certain circumstances, as previously noted, tax holidays can result in higher effective tax rates on capital compared to the case of no tax holiday. For instance, land investments are less highly taxed under the non-holiday case because of the deductibility of interest costs, unadjusted for inflation. Also, in the case of the

investment with a one-year holiday, the effective tax rate is higher, since deductions for depreciation and interest expense prior to the end of the holiday are lost to the firm.

The above estimates of the effective tax rates for tax holidays and other investments do not include the possible tax planning advantages available to companies that have both types of investments. Such tax planning opportunities could affect the actual tax burden for both types of investments and consequently, distort investment and financing decisions. Furthermore, they could affect government revenues. These issues will be elaborated next.

Effects of Tax Holidays on Incentives to Invest: Further Consideration

Tax incentives, including tax holidays, exist worldwide. And even though many of them may have little justification in a first- or second-best world, they are an entrenched mechanism.[28] It is, therefore, worthwhile to continue documenting some of the major pros and cons of tax holidays, as an incentive instrument. In Egypt, the tax holiday has several serious drawbacks.[29]

On one hand, tax holidays, by nature, confer no benefits on loss-making firms that are apt to be new and struggling business ventures. On the other hand, holidays will be of particular benefit to highly-profitable firms that, most probably, would have made their investments in the absence of a holiday. In this case, the holiday has no effectiveness and revenues are foregone needlessly. Evidence indicates that most companies receiving tax holidays in Egypt are highly-profitable manufacturing firms (Table 4 in Appendix C.).

As administered in Egypt, tax holidays tend to favor existing firms over new ones, since tax holidays automatically open up inviting opportunities for tax planning by existing firms. If an existing firm creates a new subsidiary that qualifies for a holiday it can easily transfer taxable profits to the exempt subsidiary and shift deductible costs to the taxable parent firm. The problem with favoring existing firms over new ones is suppressing competitive pressures and discouraging innovative energies often found in new firms.

The tax holiday is also a difficult incentive to target. Since such tax planning opportunities are available to domestic investors who have both types of companies—

[28] See footnote 27.

[29] For a detailed theoretical review of the advantages and disadvantages of tax holiday, see Mintz and Tsiopoloulos (1995), p. 467.

tax holiday companies and tax-paying companies—as well as to foreign investors who can always shift taxable income from one activity to another and from one country to another. So, even if it were desirable to target tax holiday incentives to a particular activity or country, it would be impossible to do so, because transfer pricing, financing and other tax arbitrage techniques will diffuse the benefit of the tax holiday to other activities or countries.

Another drawback of tax holidays is that once granted, they tend to be self-perpetuating. If they are discontinued after the designated period, they create competitive distortions between firms that no longer enjoy tax holidays and those still enjoying tax holidays. Company turnover is another complexity. A company can try to lengthen its holiday term by closing down in one location and restarting, under the guise of new ownership, in another location. Although tax authorities try to guard against such abuses, it is difficult to entirely eliminate them.

Ultimately, tax holidays lead to considerable erosion of government revenue. Two independent estimates of the revenue losses associated with tax holidays confirm that this kind of tax incentive is costly in terms of foregone revenue. A simulation of the Barents corporate tax model for Egypt (1996), suggests that about £E3.1 billion of 1995 corporate tax revenue was sacrificed in granting tax holidays. This represents about half of the potential yield from the corporate tax. This is a gross estimate because it assumes that all of the holiday-related investments would have gone forward in the absence of any tax holiday. If it is instead assumed that 10 percent of total investment would not have occurred without the stimulus of a tax holiday, the revenue loss would drop to £E2.8 billion, since no revenue would be collected from an investment discouraged by the absence of a tax holiday. An independent estimate by the International Monetary Fund (1994) of the lost revenue associated with tax holidays draws a similar conclusion. Based on a 1990/91 sample, the study found that an additional £E2.9 billion of corporate tax revenue would have been paid if the government did not grant holidays. This loss represents 46 percent of the total amount of corporate tax revenue that would have been paid if no holidays were granted. This is again, a gross estimate, since it makes no allowance for the additional investment that may have been elicited by the presence of holidays and should therefore be considered an upper estimate of the revenue loss. Seen from another angle, the estimated revenue loss due to tax holidays represents about 15 percent of total tax revenue.

One peculiarity of the Egyptian incentive system is that a large number of tax holidays have been extended to state-owned enterprises. Since the investment decisions of these enterprises are under government control and direction, it is not clear why these enterprises need the benefit of holidays to undertake their investment activities. Table 10 shows the distribution of tax holidays granted under Law 230/1989 by GAFI. It indicates that over half of the tax holidays awarded have gone to state-owned enterprises.

Table 10. Distribution of Tax Holidays in Egypt by Investor

Company Ownership	*Number of Firms (1990-91)*
Public companies	792
Private domestic companies	437
Foreign companies	227
Total	1,455

Source: IMF (1994).

In terms of attracting foreign direct investment (FDI), the tax holiday is of limited usefulness; the incentive is more effective in attracting the so-called footloose industries than in enticing those that have a long-term interest in the economy.[30] Furthermore, because foreign-owned firms are typically liable for taxation in their home countries, the manner in which foreign tax-crediting arrangements apply is important. Tax relief given in Egypt is reclaimed by the foreign government when income is remitted home. In this case, the incentive effect of tax holidays will be minimal (Mintz and Tsiopoulos 1995, p. 467). This is discussed further in Section 4.

Despite these drawbacks, the tax holiday as an investment incentive, is not without some merits. It provides a significant benefit as soon as the company begins earning income. Although, as noted previously, the holiday is of little help to an unprofitable company, its prospective benefits are more valuable than an incentive, such as a lower corporate tax rate, that accrues more slowly over a longer period of time. A related virtue of the tax holiday is that, at least for some period, it frees the investor from the somewhat arbitrary grasp of the Egyptian tax official. Also, with a tax holiday, interest deductions are of little value. Thus the holiday removes an incentive for corporations to finance investment by borrowing. Encouraging equity finance instead

[30] Footloose industries are those that can move easily from one location to another and use capital that depreciates quickly.

reduces the prospect of bankruptcy, because the company will likely be more financially viable. In theory, tax holidays can be easy to administer if the criteria for receiving a holiday are clear-cut. In practice, however, holidays are rarely easy to administer. For example, if only firms with 50 or more workers qualify for a holiday, it is relatively easy to merge two small firms in order to qualify without affecting their respective levels of investment. The government has employed tax holidays as incentives to entice new industries and activities to relocate outside the heavily-congested centers of Cairo and Alexandria. Targeted incentives of this kind have a legitimate place in Egypt's long-term development plan.

Whatever benefits the tax holiday may have, they are outweighed by its serious shortcomings. If this argument is true, it raises an important policy issue: If Egypt were to reform its tax incentives policy, what are the alternatives to tax holidays that may be more efficient and also more cost-effective? Policy options will be highlighted in Section 5.

IV. Is the Egyptian Tax System Competitive?

An assessment of Egypt's tax system, especially with regard to its competitive position at the regional and international levels, suggests that Egypt's tax system is too complex and not competitive enough to attract foreign direct investment. This section analyzes these issues after reviewing the dramatic expansion of FDI in recent years and the forces that have shaped its distribution across countries.

International Aspects of Taxation

One of the most profound economic changes of the post World War II period has been the growing internationalization of economic activity. The volume of international trade has mushroomed and is now about 15 times higher than it was three decades ago. The volume of foreign direct and portfolio investment has grown similarly.

The internationalization of economic activities has profound implications for tax systems. It raises new questions and changes the answers to old ones. The issue of openness introduces at least three important new considerations into a country's choice of a tax system (Slemrod 1990, p.11). First, factors, goods and other bases for taxation can flee a country in response to taxation or other regulatory restrictions or can be attracted to a country by relatively light taxation or regulation. Second, the inter-jurisdictional division of revenues is not a matter of indifference. Each country

must therefore compete with other countries for revenue. Finally, it is more difficult to collect revenues from tax bases located outside the country.

Myopic decision making in such an increasingly internationalized world economy has several pitfalls. A tax policymaker who mistakenly consideres his country a closed economy might:

- Overestimate the ability to place the burden of taxation on capital owners, inducing cross-border capital movements that reduce the size of the capital stock in the country.
- Forgo opportunities to take advantage of foreign investors and governments. Large countries can exploit their market power, but all countries can take advantage of the arrangements that their trading partners use to alleviate double taxation.
- See key sectors and tax revenues dwindle as other countries set their tax systems to attract capital and tax revenues from capital income.

In response to the demands of the new era of openness and increased competition, a wave of tax reform swept the globe in the 1980s. Both developed and developing countries began to restructure their tax systems. Tax reforms in these countries have varied in substance, process and context. But these reforms have several common features: a focus on making taxation economically 'neutral' (that is, ensuring that the tax system does not distort economic decisions; a trend towards lower marginal tax rates; and a consideration, particularly in many developing countries, of the value added tax as a broad-based source of revenue; and, most importantly, a response to international tax pressures, which revealed itself in attempts towards more harmonization with other countries' tax systems, in order to secure tax competitiveness in an expanding global economy.

A country's tax policy should thus be evaluated both on how well it achieves the optimal allocation of resources from a national point of view, and on how successfully it protects, or expands, its revenue base against other countries. The allocation of resources was discussed in Section 3; the latter is the focus of this section.

What Attracts Foreign Direct Investment? How Much Do Taxes Count?

Foreign investment in developing countries has soared over the last 10 years, overtaking official finance as a source of external funding for economic development. Foreign investment can take two forms: foreign equity investors, can either simply buy a stake in an enterprise—indirect investment or portofolio investment—or take a direct interest in its management—direct investment. Foreign direct investment

involves more than just buying a share or a security. In addition to finance, direct investment can bring other benefits to improve investment productivity:

- Involvement in management may provide access to better management techniques;
- Access to technology: technology owners are often unwilling to make technology available to a partner unless they can retain some degree of management control, which FDI provides; and
- Access to marketing expertise and market links: the foreign investor may be a customer for the products or may have better marketing skills and access to export markets.

In the past, however, Egypt, as well as many other developing countries, has been skeptical of FDI's benefits, based on some of its supposedly negative characteristics, such as:

- Adverse balance of payments impact if dividends and royalty repatriation exceed inflow of capital;
- Loss of tax revenue through use of transfer pricing to reduce declared profits;
- Creation of enclaves with few ties to the domestic economy;
- Impaired development of domestic firms through direct competition, abuse of market power and political influence; and
- Loss of economic sovereignty through dependence on the actions of foreign investors.

Although intended to address these concerns and ensure greater benefits from FDI, restrictive policies often deterred investment explicitly and implicitly.[31] When FDI did occur, restrictive economic regimes reduced its benefits to the domestic economy through: economic costs of regulation and protection, inefficient project structure, fiscal losses from unnecessary tax incentives, and encouraging transfer pricing to repatriate profits.

In recent year, however, perceptions regarding FDI have changed radically worldwide. Economic liberalization, combined with advances in communication and transport, has led to growing integration of world markets for goods, services and capital. This process has emerged in the 1990s and is expected to continue for some time to come. FDI has given the global integration process a major impetus by helping

[31] Examples of explicit restrictions include, for instance: outright bans (use of positive or negative lists), official approvals, equity limits, and taxes and incentives. Implicit barriers to foreign investors usually take the form of: inability to gain access to land, restrictions on expatriate labor and a myriad of other permits and licenses that investors have to obtain for project operation.

to link markets for capital and labor and raise relative wages and productivity of capital in recipient countries.

The newly-industrialized countries of East Asia and other countries that liberalized their economies have benefited more from FDI flows, exhibiting sustained high rates of growth. This has encouraged other developing countries to try and follow their steps. The fear of being locked out of the expanding global economy has spurred developing countries to change their approach to FDI, in some cases dramatically. "Getting the policy environment right" to create an enabling climate for private sector development in general, and FDI in particular, is becoming the major concern of the government in Egypt as well as in other emerging economies.

Total FDI flows have increased dramatically since the start of this decade. FDI jumped almost 100 percent from 1991 to 1995, from $151 billion to $302 billion (Table 11). But most notably, never before in the post-World War II era have so many countries made a conscious policy choice to open up to foreign capital. Rich and poor alike are encouraging outside investors, reforming their investment laws, streamlining approval processes, and opening sectors to international entities. As Table 11 shows, the share of FDI attracted by the emerging markets jumped from less than one-quarter of all FDI in 1991 to around one-third through the mid-1990s. The level of FDI in emerging markets increased by more than 170 percent from 1991 to 1995, while investments in the advanced industrial countries increased by less than half that rate. True, the majority of FDI stayed within the developed world; however, looking at shares of FDI in recipient countries' GDP shows that smaller countries can successfully compete for large global FDI flows relative to their economy. In other words, FDI inflows can make a significant difference for investment rates in smaller countries.

Table 12 illustrates the regional distribution of FDI flows. It shows, as previously noted, that while advanced industrial countries remain the primary destination of FDI, emerging markets in East Asia and Latin America have become increasingly important locations for international investments. In 1996, East Asia continued to receive more than half of all FDI flowing into the world's emerging economies, despite the recent export slowdown and stock market weakness in parts of the region. Latin America also received significant FDI flows, followed by Eastern Europe and Central Asia. FDI flows to Africa and South Asia were insignificant by comparison.

Table 11. Total FDI Inflows Worldwide, in the 1990s

	1991	*1995*	*Change (%)*
Total ($ millions)	150,830	301,820	100,1
Advanced industrial countries ($ million)	115,045	204,242	77,5
Share of total FDI (%)	76,3	67,7	-
Emerging markets ($ million)	35,785	97,578	172,7
Share of total FDI (%)	23,7	32,3	-

Advanced industrial countries include the countries of Western Europe along with Canada, the United States, Japan, New Zealand and Australia. Emerging markets include the newly industrialized countries of Asia, the transition countries of Eastern Europe and the Former Soviet Union and the developing countries of Asia, Africa, the Middle East, and Latin America. Figures are for the 53 countries in the *Global Competitiveness Report, 1997* and five additional Central American countries.
Source: The Global Competitiveness Report (1997), Table 2, p.41.

Table 12. Distribution of Net FDI Inflows Worldwide 1990- 1996 ($ billions)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996[e]*
Industrial countries	176.4	115.1	111.2	129.1	132.8	203.2	
G-7	112.1	63.9	69.4	90.6	87.9	130.7	
All developing countries	24.5	33.5	43.6	67.2	83.7	95.5	109.5
Sub-Saharan Africa	0.9	1.6	0.8	1.6	3.1	2.2	2.6
East Asia and the Pacific	10.2	12.7	20.9	38.1	44.1	51.8	61.1
South Asia	0.5	0.5	0.6	0.8	1.2	1.8	2.6
Europe and Central Asia	2.1	4.4	6.3	8.4	8.1	17.2	15.0
Latin America and the Caribbean	8.1	4.4	12.7	14.1	24.2	22.9	25.9
The Middle East and North Africa	2.8	1.8	2.2	4.2	3.0	-0.3	2.2
Low-income countries	4.5	7.1	13.9	32.0	39.1	41.6	49.5
Low-income countries excluding China	1.0	2.7	2.7	4.5	5.3	5.8	7.2
Middle-income countries	20.0	26.3	29.8	35.2	44.6	53.9	60.0

Note: e = preliminary estimate.
Source: The Global Competitiveness Report (1997), p. 29.

How Much Do Taxes Count?

There are a number of theories as to why FDI seeks some countries over others, and this is an important issue to policymakers. Many countries are now making strenuous efforts to attract investments by reforming investment laws, setting up one-stop investment advisory agents and creating the post of 'Ambassador-at-Large' for international investment. But it takes more than just legal changes to attract capital. A complex set of considerations matter, including the size of the market, skills and wages of the workforce, tax rates, and level of corruption. In other words, the overall competitiveness of a country is decisive (The Global Competitiveness Report 1997, p. 20).[32]

[32] According to *the Global Competitiveness Report*, national competitiveness can be viewed ultimately as a country's capacity to achieve rapid, sustainable economic growth. The Competitiveness Index used to compare national economies includes eight factors: openness, government, finance, infrastructure, technology, management, labor, and institutions.

One issue central to the analysis of FDI is whether the investor will serve the market of the country where the project is located, or whether the subsidiary will be used mainly to export to foreign markets. Broadly speaking, market servers look for large and fast-growing markets. Exporters look for low-cost production sites. Market servers and exporters will therefore have different criteria and standards in comparing investment sites.

To answer the question as to why certain countries make desirable FDI targets, Howard Shatz (1997, p. 40) focuses on the exporting investor assuming exporters will be more sensitive to competitiveness. Through regression analysis, he investigates the statistical relationships, first, between a country's competitiveness as measured by its Competitiveness Index in the *Global Competitiveness Report* and the number of times it was chosen as the top investment location by exporters (Table 6 in Appendix C). The study considers additional explanatory variables in the analysis: the lowest corporate tax rate an investor can get through a country's incentive program, gross domestic product per capita and the level of corruption. The main conclusion of this study is that competitiveness counts. A country that is more competitive is more likely to be considered a good choice for investment by an exporting firm. Shatz found that the other economic variables mentioned above are important as well. An increase in the competitiveness rank makes the country a more attractive target, higher tax rates make the country a less attractive target and less corruption is associated with greater attractiveness as a target for FDI. One of the interesting findings of the study is that corruption acts like a tax discouraging investment inflows (Ibid, p. 44).

To sum up, there is not yet sufficient theory or empirical evidence that pinpoints why some countries command the attention of international investors while others cannot seam to get noticed. Based on what is now known, laws governing foreign investment certainly play a role, as do taxes, wages, potential market growth, corruption, and other considerations that determine whether a business will earn profits and whether such profits will be enough to justify the risk of crossing borders. The relative importance of each of these factors, and which of them should be concentrated on, are among the most important questions facing policymakers. One of the complexities of the issue is the basic fact that different kinds of investors (market servers and exporters) will respond differently to different considerations. Therefore, policymakers must fully understand the kind of investor's concerns they are likely to confront.

With the benefits of FDI becoming more widely recognized around the world, competition for direct investment is strong. This is especially true for developing countries trying to establish an export base—a key to rapid growth. Competitiveness, in its broader sense, will therefore remain a primary goal for countries aiming to attract capital flows to achieve high rates of economic growth. But how successful has Egypt been in attracting FDI?

Is Egypt Competitive Enough?

Fostering greater investment, including FDI, is now a major objective of the Egyptian government. Egypt needs to attract FDI for both privatizing state-owned enterprises and for investment in new physical facilities. The capital, management skills, technology, and access to export markets that FDI can bring are crucial ingredients for success.

It is widely acknowledged that Egypt's stabilization program has been successful. Indicators for the period between 1990/91 and 1995/96 are strong on all fronts (Table 13). Inflation is stabilized (7.2 percent in 1996), and fiscal deficits were reduced to 1.3 percent of GDP in 1996 from about 17 percent in 1991. Investor confidence in government policies is high and capital inflows have been strong. Foreign participation has grown recently to almost 40 percent of the turnover on the Cairo Stock Exchange.

Table 13. Selected Economic Indicators, 1990/91-1995/96 (Percent of GDP, unless otherwisenoted)

	1990/91	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*
Real GDP growth rate (%)	3.6	1.9	2.9	3.9	4.7	5.0
Inflation (% change in CPI)	14.7	21.1	11.1	9.0	9.4	7.2
Consumption	85.9	83.0	83.3	84.9	83.1	86.0
Investment	23.3	18.2	16.2	16.6	16.3	16.7
Government Investment	13.4	8.5	7.0	6.1	5.5	5.5
Domestic Saving	16.0	17.0	16.7	15.1	16.9	13.9
Overall Fiscal Balance (excluding grants)	-18.1	-5.4	-3.5	-2.1	-1.2	-1.3
Current Account Balance (including transfers)	5.2	4.1	5.1	0.2	0.6	0.2
Official Reserves ($ billions)	6.1	10.6	14.9	17.0	17.9	18.4
External Debt/GDP	107.7	89.5	69.2	58.0	55.7	49.2

Source: World Bank (1997a), Table 1.1, p. 1.

Growth responds quickly to stabilization. But stabilization itself is not sufficient to accelerate growth. While maintaining consistent macroeconomic policies over the short run is essential, there is a critical need to raise the level of savings and investments over the long run to build up the basis for sustainable growth.

Two scenarios can be envisaged to illustrate the magnitude of the investment and saving efforts needed to support moderate growth and high growth respectively in Egypt (World Bank 1997a). For the outcome of the two scenarios, see Table 7 in Appendix C. While sound macroeconomic conditions underpin both scenarios, the key policy actions for the high growth scenario include rapid structural reform in trade and financial sectors, rapid privatization and a vigorous increase in domestic and foreign savings and private investment.

The high-growth scenario is based on the vision that Egypt can and should grow faster. GDP in real terms could reach a growth trajectory of about 7 percent, compared to 4.5 percent in the moderate growth case. Most importantly, the high-growth scenario implies an investment/GNP ratio of 22 to 25 percent and an incremental capital output ratio (ICOR) of 3.8, in contrast to 18 to 20 percent and 4.4, respectively in the base case. Gross domestic savings as a percentage of GDP must be in the 17 to 18 percent range for high growth, compared 16 to17 percent in the base case. While the fiscal deficits as a share of GDP are estimated to turn to surplus by the turn of the century in both cases, better budgetary results are expected earlier in the high growth case as the privatization process gathers pace and government spending is directed to basic social services and infrastructure development. Real exports of agricultural and manufactured goods grow at about 10 to 15 percent in the high-growth scenario, compared to 5 to 7 percent in the base case.

Nonetheless, the viability of the high-growth scenario depends on the level of domestic savings. The increased domestic savings under the high-growth case would not be sufficient to finance all the investment requirements;[33] a significant gap would still have to be filled by foreign savings, which would lead to heightened concern about vulnerability.

Investment being more than domestic savings leads to the current account deficit. Current account deficit can be financed by running down reserves, borrowing from abroad or by attracting more foreign direct investment. Whatever the margin of reserves, it can only provide a one-off source of savings. Borrowing from abroad adds

[33] Domestic savings come from: the government sector, the public enterprise sector, or the private sector. Experience has shown that the response of private sector savings is uncertain in both magnitude and duration. Government savings would require higher taxes and/or lower expenditure, where the room is rather narrow for action on both fronts. This leaves the public enterprise sector as the main source of higher domestic savings. These additional savings could come both from improved efficiency of the companies that are transferred to private control and from the liquidation of loss-making companies. For more details on savings and investment objectives under a high growth path in Egypt, see Galal, A. 1996 (unpublished).

to the debt-service burden. This leaves FDI as the most likely candidate for providing additional savings (World Bank 1997b).[34] But the policy effort required to attract FDI is considerable. Of the 10 percentage points needed to boost investment, about 50 percent would have to be financed by FDI. This would amount to about £E10 billion (or $2.9 billion) annual inflows of FDI, which is several times the current inflow estimated at $605 million in 1995 (Ibid, p. 95).

Egypt used to be one of the top 12 recipients of FDI among developing countries in the 20-year period from 1970 to 1989 (Table 14), but it disappeared from the list during the successive six-year period from 1990 to 1996. FDI flows to Egypt dropped from a peak of nearly $1.6 billion in 1979 to only $605 million in 1995 (Table 8 in Appendix C).

Table 14. Top 12 Recipients of FDI Among Developing Countries

Rank	*1970-1979*	*1980-1989*	*1990-1996*
1	Brazil	Mexico	China
2	Mexico	Brazil	Mexico
3	Nigeria	China	Malaysia
4	Malaysia	Malaysia	Brazil
5	Indonesia	**Egypt**	Indonesia
6	Greece	Argentina	Thailand
7	South Africa	Greece	Argentina
8	Iran	Thailand	Hungary
9	**Egypt**	Colombia	Poland
10	Ecuador	Nigeria	Colombia
11	Thailand	Indonesia	Chile
12	Algeria	Chile	Czech Republic

Note: Excludes countries with a population below 5 million in 1994.
Source: World Bank (1997b), Table 2.1, p. 17.

As noted before, measuring FDI as a percentage of GDP takes account of country size. In these terms, Malaysia maintained its prominence, and China, Colombia, and the Czech Republic featured among the top 12 by both measures in 1996 (Table 15). Although the economies of low-income countries are too small to attract large amounts of FDI in absolute terms, in relative terms they do quite well. Half of the top 12 recipients of FDI as a percentage of GDP are low-income countries. Similarly, the many small and poor countries of Africa do not make the top 12 in absolute terms, but measured against GDP, one-third of the top 12 developing-country recipients of FDI are African countries. Still, Egypt is not among the top 12 by either measure.

[34] Foreign investment can take two forms: foreign direct investment and foreign portfolio investment (foreign indirect investment). The International Monetary Fund defines foreign investment as direct when the investor holds 10 percent or more of the equity of an enterprise. Generally, this is usually enough to give the investor a say in the management of an enterprise.

Given Egypt's comparative advantage, in terms of the size and cost of its labor, its internal market and its strategic location, its level of FDI is well below potential which is questionable. As long as taxes and investment are the focus of this study, the logical question arises: Is Egypt's corporate tax burden too heavy compared to other countries?

Table 15. Top Developing-Country Recipients of FDI, 1996

Rank	*By value*	*By percentage of GNP*
1	China	Angola
2	Mexico	Vietnam
3	Malaysia	Malaysia
4	Indonesia	Colombia
5	Brazil	Czech Republic
6	Poland	China
7	Colombia	Tanzania
8	Czech Republic	Bolivia
9	Thailand	Peru
10	Peru	Columbia
11	India	Ghana
12	Chile	Mozambique

Note: Excludes countries with population below 5 million in 1994.
Source: World Bank (1997b) Table 2.2, p. 17.

Is Egypt's Corporate Tax Burden Too Heavy Compared to Other Countries?

In an attempt to increase FDI flows, the Egyptian government relies heavily on a number of significant tax benefits including tax holidays and free zones. Neighboring countries, however, offer incentives for foreign investment as well. This section compares the Egyptian tax regime to some of its regional competitors, in order to assess its competitive position in the Mediterranean region with respect to foreign direct investment. It also compares Egypt's corporate tax rate with that of other countries worldwide.

Countries can reduce high effective tax rates to more competitive levels by giving tax incentives only to a selected group of firms, while maintaining high tax rates for others. An alternative is to change the general fiscal system to lower the effective tax rate for all firms. Between these two extremes lie a number of options.

Because of different tax systems and incentive regimes, effective tax rates vary widely among countries and even among industries within a country. Table 16 provides estimates of effective tax rates on capital for American multinational companies that invest in different Middle East and North African countries. Indonesia is included in these calculations because, during the 1980s, it eliminated discretionary tax holidays in favor of generous depreciation deductions available to all firms.[35]

Table 16. Effective Corporate Tax Rates: U.S. Multinational Companies (percent)

	Manufacturing	*Services*
Egypt		
No Incentive (Base Case)	32.1	40.1
Tax Holiday - Case A	19.1	24.3
Case B	17.9	23.3
Case C	17.2	23.1
Jordan		
No Incentives	40.8	40.2
Tax Holiday - Case A	16.2	20.7
Case B	12.4	17.9
Case C	8.2	12.6
Morocco		
No Incentives	40.7	33.3
Tax Holiday - Case A	n.a	18.6
Case B	21.2	18.6
Case C	16.9	12.8
Tunisia		
No Incentives	44.0	49.7
Tax Holiday - Case A	10.4	n.a
Case B	7.3	5.8
Case C	6.4	5.8
Greece	-14.8	5.7
Turkey	-267.8	-281.4
Cyprus:		
No Incentives	20.9	15.3
Tax Holiday - Case A	7.8	8.7
Indonesia	27.9	18.6

Source: The World Bank (1995), p. 69.

As is shown in Table 16, Egypt's effective tax rate on capital is lower than that of Jordan, Morocco and Tunisia in manufacturing and about the same for services. In manufacturing, Egypt has the lowest corporate tax rate and relatively generous write-offs for machinery. Compared to Jordan, Morocco and Tunisia, the investments in services are treated less generously because of the higher corporate tax rate for services in Egypt.

The tax holiday reduces the effective tax rates on capital not only for Egypt but also Jordan, Morocco and Tunisia. While there are some advantages to investments that qualify for these incentives, the provisions do not enable these countries to be any more competitive than Greece and Turkey where there are no holidays. The low effective tax rate in Greece results from the use of the LIFO method for inventories

[35] For various inputs used to estimate these ETRs on capital, see World Bank (1995), annex 2.2.

and investment allowances for machinery (the statutory corporate tax rate is 35 percent). Turkey's effective tax rate is quite low (negative). This reflects a generous treatment for capital (investment allowances and fast depreciation), and an indexing system that re-values assets for depreciation, inventory costs and capital gains taxation, but makes no inflation adjustment for interest expenses.

Egypt is also not as competitive as Cyprus. Cyprus has similar investment allowances for machinery and structure but also has a low statutory corporate tax rate (21 percent). With a tax holiday in Cyprus, the effective corporate tax rate falls to a value much below that for a similar case in Egypt.

In comparison to Indonesia, Egypt's effective corporate tax rate for the base case is higher for both manufacturing and services. Indonesia's effective corporate tax rates on manufacturing and services are 27.4 percent and 18.6 percent, respectively, compared to Egypt's 32.1 percent and 40.1 percent. Egypt's tax holiday results in a lower effective tax rate than Indonesia's for manufacturing but not for services. The difference in effective tax rates between the two countries is explained as follows. Indonesia's general (statutory) corporate income tax rate at 35 percent is roughly comparable to Egypt's manufacturing corporate tax rate of 34 percent but lower than Egypt's tax rate on services (42 percent). More importantly, Indonesia has a well-functioning value-added tax (VAT) that provides an input tax credit for purchases of investment goods, while no similar credit is provided in Egypt.

One basic conclusion can be drawn from these comparisons; that is, Egypt is a country with relatively high taxes compared to other countries in the region. Table 9 (Appendix C) confirms this conclusion with regard to other countries worldwide. According to the *Global Competitiveness Report* (1997), Egypt ranked number 47 out of 53 countries in terms of its average corporate tax rate (42 percent), while the "center of gravity" for other countries was in the range of 30 to 35 percent. Hence, the corporate tax system is not sufficiently competitive to make Egypt attractive for foreign direct investment.

Another significant issue is that tax holidays in Egypt have not been associated with greater tax competitiveness in general. According to the World Bank study (1995), the regular provisions in the tax codes across countries (e.g., treatment of inventories, depreciation rules, inflation adjustment, etc.) were almost more important than tax holidays in determining effective tax rates on foreign investment. The case of Greece and Turkey, where there are no holidays, is obvious. Also, tax competition

among countries, leading to the granting of similar or even larger investment incentives, significantly limits the effectiveness of such incentives as a policy instrument to attract FDI at the expense of other countries. In addition, incentives are not effective for foreign investors that must pay more tax to their home countries when they remit income under tax crediting arrangements.[36]

Interestingly, most surveys of investors show that tax incentives are relatively far down on the list of factors that influence investment decisions. In determining where and when they make investments, business sponsors emphasize the importance of fundamentals, such as the size of the market, the availability of an adequately-skilled and productive workforce, an infrastructure that meets the minimum standards of quality, the protection of intellectual property, and the availability of efficient service suppliers. Meanwhile, investors minimize the importance of fiscal incentives. Unless a tax system is completely out of line compared to other countries, one would not expect taxes to be the most significant determinant of foreign investment.[37]

Furthermore, the experiences of other countries working to achieve a sound policy environment for FDI show that reforming tax systems through lower rates, broader bases and increased simplicity is more successful in attracting FDI than providing generous tax incentives under the umbrella of a complex, non-neutral tax system.[38]

The important point is, even though tax incentives can be designed to achieve some economic goals, they should not be used as substitutes for an efficient and competitive tax system. Before considering an incentive scheme, a moderate general tax regime conducive to investments of all types must be in place first. Then countries can look at the few special cases in which selective incentives may be justified.

Results from some empirical studies using the cost-of-capital approach are summarized in Table 17. Nearly all suggest that tax incentives have a small or even insignificant effect on investment.

The reasons why tax incentives tend to be ineffective, particularly in developing countries, include: too broad a spectrum of objectives pursued with limited resources; excessive selectivity in the granting process; unpredictability in the granting of the

[36] In the case of the American company tax relief given in Egypt is claimed by the U.S. government when income is remitted.

[37] Only heavily export-oriented firms are very sensitive to tax burden (as measured by effective tax rate). Export-oriented firms such as garment manufacturers operate in highly-competitive markets with very slim margins. Moreover, these firms are highly mobile and sought after because they generate jobs. Hence, taxes can be an important part of their cost structure, and the firms can easily move to take advantage of more favorable tax regimes.

[38] For more details, see The World Bank (1997b).

incentives; too much political influence of vested interests in the design of policy; an inadequate relationship between the objective and the instrument; and counter-effective general equilibrium (or indirect) effects (IMF 1987, p. 273). Accordingly, for tax incentives to be effective, certain criteria must be fulfilled:

Limiting the objectives. For tax incentives to be more effective and less costly, two or three narrow objectives should be chosen; for example: promotion of investment, exports, and manufacturing industry.

Reducing the discretionary element. Granting of tax incentives should be an automatic process, and selectivity should be exercised with great care as excessive red tape tends to nullify the desired result.

Table 17. Cost-of -Capital Studies of Investment Incentives in Developing Countries

Study	***Country***	***Result***
World Bank (1980)	Thailand	Investment incentives had little effect. Share of exports in total production of firms awarded incentives was no higher than average for all industrial firms.
Manasan (1986)	Philippines	Fiscal incentives had significant effects on rate of return and user cost of capital.
Manasan (1988)	ASEAN	Fiscal incentives did not have significant effect on relative competitiveness of ASEAN.
Kwack (1988)	Korea	Tax incentives played minor role in promoting exports in Korea.

Source: Nagee and Whally (1995), *Patterns in Investment Tax Incentives among Developing Countries,* in Fiscal Incentives for investment and innovation by A. Shah (ed.) Tables 11- 4, p. 444.

Ensuring predictability. While tax incentives do not have to be permanent, they must be predictable, so that they can be incorporated into the decision-making process of the economic agents.

Minimizing political influences. A tax incentive is one of the prime examples of rent-inducing fiscal measures and, even though there will always be political pressure to use it that way, great care should be given to ensure that the tax incentives aim at the pursuit of economic rather than political objectives.

Ensuring direct relation between the instrument and the objective. A tax incentive is, in general, linked to a specific tax base. Policymakers should select the tax base that is most closely related to the positive external effect that they wish to induce. Thus if the positive externality derives from net investment, the tax incentive should be granted on net investment.

General equilibrium effects. Recent evidence from Ecuador, shows that tax incentives to investment had a successful allocative role redirecting investment to the manufacturing sector without actually increasing the rate of investment for the country as a whole (Ibid., p. 273). So, to guarantee the effectiveness of tax incentive policy, its general equilibrium effects should be taken into account.

Nevertheless, most economists argue that tax incentives have a limited role to play in tax policy. First, they entail a loss of government revenue. Second, efficient tax incentives are cumbersome to design. They are selective by nature and can often induce other economic distortions. Third, their effectiveness can seldom be guaranteed. In principle, they should be given to those economic agents who need them to perform the desired action; however, this is a very difficult task that often leads to unwarranted economic rents to the lucky beneficiaries. Finally, tax incentives can readily fall prey to special interest groups so that the original economic motivation of policy is easily superseded by other less objective motives. So developing countries would well be advised to limit the use of such tax preferences and instead concentrate on eliminating disincentives to invest that arise from infrastructure deficiencies, poor regulatory regimes, and the lack of a legal framework, institutions and enforcement.

V. Reforming the Corporation Tax for Growth and Competitiveness

Research Findings

The above analysis of corporate taxation and investment behavior in Egypt reveals basic conclusions that must serve as guidelines for the needed tax reforms:

- The level of taxation of capital in Egypt is relatively high by international standards, with and without tax incentives. This high level of corporate income tax rate reduces the size of the capital stock in the Egyptian economy.
- The large tax exemptions and incentives, including tax holidays, introduced over time to alleviate the tax burden on investment (as compared to what is incorporated in the nominal tax rate schedules) have led to a complex, narrow-based tax system yielding little revenue and not actually boosting investment.[39]

[39] As previously indicated, the large share of revenue of the corporation tax (around 22 percent of government revenues in 1996/97) should not disguise the fact that the principal contributors of this levy are the three major public enterprises: the oil industry, the Suez Canal and the Central Bank.

- Because of the numerous tax rates applied to different activities—tax incentives granted to certain investments and not to others and tax holidays of different duration according to the location of the firm—the tax system fails to offer a neutral tax treatment to different investors. This differential tax treatment distorts investment decisions which leads, in turn, to a misallocation of investment resources in Egypt.
- Variability in tax treatment across assets, industries, modes of finance, and organizational forms of business does not only impair the efficient use of investment resources, but it also provides many incentives for tax arbitrage in order to minimize corporate tax payments. The multiplicity of opportunities for tax arbitrage, avoidance, and evasion in the Egyptian economy results in: i) non-equitable distribution of tax burden on business income; ii) revenue losses for the government; and iii) complexities in tax administration.
- Tax holidays provide some limited benefits to certain activities, but are not well targeted. Moreover, the tax incentive scheme operates at a relatively high cost in terms of foregone revenue. The revenue loss for the government resulting from granting tax holidays is, yet, to be seriously estimated in Egypt, in the context of a social cost-benefit analysis.
- The tax holiday program has not, so far, proved to be effective or associated with greater tax competitiveness regarding the poor investment performance in general, and of foreign investment in particular. Table 10 (Appendix C) shows that FDI as a share of GDP in Egypt is 1.1 percent in 1997 as compared to 1.8 percent in Israel, and 5.5 percent in Singapore and the Czech Republic.

Policy Implications

Tax experts believe that Egypt should begin to consider a complete overhaul of the tax system. With such a reform, the country's highest priority will have to be reforming its major indirect tax. Only a shift towards a consumption-based value-added tax would significantly reduce the marginal effective tax rates on business income, and hence the deterrent to invest. This "fiscal innovation", as Harberger (1990) rightly described it, would be more efficient than any of the incentive programs currently in place. Egypt must move to a fully-operative value-added tax

system[40] that scores well in terms of efficiency, growth, fairness, and simplicity.[41] In the meantime, an agenda for reform should, also, include revising most of the rules defining the tax treatment of income and profits to make them consistent with these policy objectives.

Although a comprehensive tax reform balancing the goals of taxation—efficiency, equity, and revenue—is Egypt's first best option, it is not an easy task to achieve. Analyzing the whole reform process is beyond the scope of this study, but the next section considers specific proposals to address the major weaknesses of Egypt's existing corporate tax system. For each proposal, its economic rational and its possible revenue effects will also be discussed. Before putting forward policy proposals through, the following reservations are worth nothing.

The revenue impact of most of the reform proposals put forward are only speculative. Further work is needed to quantify the revenue implication of various tax reform options. Nevertheless, as a matter of principle, unless the revenue-gaining proposals outweigh, or at least offset, the revenue-losing ones, the reform package would stand no chance of wining the political support needed.

Although equity is not a major concern in these proposed tax reforms, the more neutral the tax treatment of capital income, the more improvements will be made in both horizontal and vertical equity.[42] Improvements in horizontal equity are likely to occur because people with similar income levels will face more similar tax burdens. Better vertical equity is anticipated, because many of the opportunities for the rich to either avoid or evade taxes will be eliminated.

Although this discussion does not address tax administration, positive reforms are often constrained by inefficient tax administration. Unless an efficient tax administration system is in place, it is unlikely that the proposed policy changes will have their intended effects.

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[40] It should be noted that the government introduced the general sales tax (GST) by Law 11/1991 to replace, the former scattered excise duties and specific consumption taxes. Though it is considered among the most far-reaching reforms of Egypt's contemporary tax system, the system needs further reforms to convert it to a fully operative VAT. See Abdel Rahman (1998), also El Samalouty (1995).

[41] Arnold C. Harberger (1990) wrote, "No public finance development of the last half century can rival the emergence and spread of the value-added tax. Today, the VAT, stands as the premier indirect tax in over half the world". For arguments supporting this fiscal innovation, see Harberger, Principles of Taxation Applied to Developing Countries: What Have we learned? In world tax reform, M.S. Bosken and C. Maclure (eds.) (1990) p. 25.

[42] 'Horizontal equity' calls for: people of equal capacity should pay the same. 'Vertical equity' calls for: people with greater ability to pay more. In other words, the former term refers to distribution of the tax burden within the same income group, while the latter refers to equitable distribution of the tax burden among different income groups.

Tax Reform Proposals

Based on this analysis, it is clear that the Egyptian Economy needs a tax reform package including tax rate, base and other corporate tax provision changes. In parallel, an upgrading of Egypt's tax incentive policy, efficiency and effectiveness-wise is also necessary to maximize the benefit of these proposed reforms.

Tax Rate Reductions and the "Laffer Effect"

Most economists recommend a lower and unified corporate tax rate in the range of 30 percent for all corporate income taxpayers. Such a rate would correct the tax discrimination against non-manufacturing activities now taxed at 42 percent. Also, because it conforms to the rates currently prevailing in most countries, it would either maintain or enhance the competitiveness of the Egyptian economy. Ultimately, there is little economic justification for having three different corporate tax rates.

The highest rate of 50 percent that was applied to non-corporate income under the unified personal income tax was inconsistent with corporate income tax rates. This high rate constituted a tax penalty on non-corporate firms and smaller corporations and encouraged tax arbitrage practices on behalf of individuals who shifted taxable income from the non-corporate to the corporate sector. This top rate was recently reduced to 40 percent (as of 1998), and must be reduced further to the suggested range of 30 percent to ensure consistency with the corporate income tax and discourage tax planning opportunities.

For some small unincorporated firms, this proposed change implies a rate increase rather than a rate reduction. To offset this increase, small businesses could be allowed to take up to £E50,000 in wage compensation and be taxed on this amount at the rate which would apply to ordinary labor income, or 20 percent. The limit of £E50,000 is the threshold at which the rate on labor income jumps from 20 percent to 32 percent. Imposing this limit would help to attain parity of treatment between labor and small business income.

Note, that adopting a lower, uniform rate is contingent upon achieving all of the base-broadening measures discussed next. Unless these measures are implemented as a whole, it would not be possible to lower business income tax rates without triggering a revenue loss.

At this point, it is useful to address the counter-proposition of popular supply side economists, that tax rate reductions would lead to revenue increases, and consider its

relevance to Egypt.[43] The new supply-siders believe that a reduction in marginal income tax rates, especially the top rates, will significantly change the economic behavior of households and businesses in favor of work, savings and productive investments as opposed to leisure, consumption and unproductive investments. Lower income tax rates would also greatly discourage tax avoidance and reduce tax evasion. In a word, a reduction of income tax rates is thought to lead to a large expansion of economic activity and tax compliance, and hence, income tax revenues. It is this "elasticity optimism" that underlies the popular view of supply-siders, and also underlies the "Laffer Curve" they widely advocate.[44]

The relevant question is: How far is a Laffer-type effect of income tax rate reduction valid for Egypt? The validity of popular-side tax policies for Egypt, as well as for other developing countries, depends on the following questions:

- Are labor supply, savings and investment highly price-sensitive?
- Do income tax policies significantly reduce savings, especially the availability of financial savings?
- Do income tax policies, tax rates combined with tax incentives and other tax provisions affecting investors, significantly reduce investment?
- Do high and progressive income tax rates significantly increase income tax evasion?
- Do government revenues increase significantly in the short run, in line with the Laffer Curve, when top marginal income tax rates are reduced?

Answering these questions is beyond the scope of this study, but it is possible to draw useful policy lessons from empirical tests of this issue. Empirical evidence (Gandhi 1987) shows that, it is not that the popular supply-side tax policy prescription of reducing high income tax rates in the interest of improving growth prospects and tax revenues is invalid, but that there are other important tax and non-tax determinants of investment and growth in developing countries. The fact that developing countries are generally heterogeneous and that their governments must, at this stage of

[43] The first characteristic of 'popular', or new supply-siders that sets them apart from 'basic' or traditional supply-siders, is their preoccupation with tax policy and, within tax policy, focusing on the nominal progressivity of income taxation and the top marginal income tax rates, rather than on the reform of the tax system in all its aspects. Another characteristic is their exagerrated claims with regard to the effects of a reduction of marginal income tax rates on the economy. For a theoretical exposition of and empirical evidence on supply-side tax policy, see IMF (1987).

[44] According to Aurthur Laffer, government revenues first rise with tax rates (as long as tax rates are in the 'normal range'), reaching a peak (the 'Laffer Hill'), and then falling (as tax rates rise to a 'prohibitive range'). Reducing income tax rates from the prohibitive range will lead to tax revenue gains. See R. Musgrave and P. Musgrave (1989), ch. 16.

development, pursue a variety of objectives (including redistribution, economic stabilization, and mobilizing revenue for essential social and economic infrastructure and its maintenance) further complicates the task of quantifying a formula for the correct levels and structure of taxation valid for all developing countries. Policy makers must therefore, struggle with multiple objectives; in so doing they must also take into account the uses of government revenue and assess their economic and social necessity.

To conclude, it is true that the broader perspective of supply-side economics (the basic view) is more valid for developing countries than the popular view. While the latter limits tax reform proposals to tax rate reductions, the former is concerned with removing the disincentive effects of tax distortions irrespective of their source (be it the tax base, rate or other provision, etc.). A basic supply-side economist is, thus, one who seeks to reform all aspects of a tax structure.

Proposals to Broaden the Tax Base

First, a major base-broadening reform would be subjecting interest income to taxation at the corporate level. In Egypt, as explained earlier, interest income is deductible at the business level and non-taxable, for the most part, at the personal level. Thus, a significant portion of capital income escapes the income tax net causing distortions in financial decisions and investment patterns and inviting taxpayers to engage in revenue-losing tax arbitrage behavior.

To put debt and equity financing on an even tax footing and equalize effective tax rates on different investments, it is recommended that interest income be included in the business income tax base for both incorporated and unincorporated business. In most market economies, interest is deductible at the business level, as a cost, and taxable at the personal level when it is received as an income. Equity income is generally taxable at the entity level and may, or may not, be taxable again at the personal level. In Egypt, as noted earlier, interest income, for the most part, is not taxable at any level. Recently, the Unified Income Tax shifted the taxation of dividends from the personal level to the entity level. Now that equity income is no longer taxed personally, it may make little sense to advocate the taxation of interest income in the hands of individuals. Instead, a second best strategy suggested by

Barents (1996), is to tax both interest and equity incomes at the entity level and provide equal tax treatment to both forms of capital income.[45]

This essential base-broadening reform could be accomplished through a comprehensive system of source withholding, in which the borrower withholds, at the new corporate rate, all interest payments made to a lender. Recipients of interest income would remain tax exempt.[46] This system implies eliminating the Mobile Capital Tax,[47] at least as far as it applies to interest income, the interest income exemption for joint-stock companies and the public sector, and the deduction for paid-up equity capital.

It should be noted that if the deductions currently allowed for the purchase of corporate/government securities, bank deposits and pension or insurance contributions are to remain, then neutrality requires all cash received from these investments to be taxable under the same taxes.

The gains of investment neutrality, as well as government revenues that would result from including interest income in the corporate tax base, are strongly suggestive.[48] The most controversial aspect of this proposal, however, concerns its anticipated impact on interest rates. In light of the international mobility of deposit holders, it is likely that this proposal would exert upward pressure on interest rates and raise the cost of investment finance. But the higher cost of capital need not discourage investment if it were accompanied by the other measures proposed here, in particular, a lower corporate tax rate and an investment tax credit to gradually replace the use of tax holidays. Inclusion of interest income is therefore part of a reform package whose desirability depends on concurrent changes in other parts of the corporate tax system.

Second, eliminating the interest exemption on publicly-subscribed bonds issued by joint-stock companies will also broaden the tax base. This is consistent with the recommendation to tax all interest payments through source withholding. Even if this

[45] Including interest income in the corporate tax base is part of a comprehensive view of a proposed tax treatment of capital income (dividends, interest and capital gains), elaborated by the Barents study (1996) on Egypt. For a full picture of this proposal see Table 11 in Appendix C.

[46] As explained above, debt- and equity-financed investment income would be taxed only at the business level. No taxes would be assessed on the receipt of either dividend or interest income at the personal level. Only interest on publicly issued debt would be taxable at both the business and personal level through withholding to ensure that business and individual holders of government debt are afforded equal tax treatment.

[47] If universal source withholding is not adopted, the MCT could serve as a weak substitute if its scope is expanded to include all interest payments made to a corporation.

[48] Some relatively crude estimates of the revenue impact suggest a net revenue gain of £ 1.6 billion due to the inclusion of interest income in the business income tax base. For more details, see Barents (1996), chps. 3 and 8.

recommendation were not embraced, keeping of the corporate interest exemption runs the risk that intercorporate lending will seriously erode the corporate tax base. Under the current tax law, when one corporation lends to another, both corporations may take advantage of interest cost deductions and neither one will be taxable on the interest income flow between them.

The only argument favoring the corporate interest payments exemption is that, as long as government debt is also exempt, the exemption serves to create parity between private and public sector debt. It would be more desirable to establish the same parity by making both private and public sector debt payments taxable.

Third, subjecting government interest payments to source withholding also broadens the tax base. As argued above, 'tax exempt government debt' will enjoy a privileged place in the asset portfolios of lenders, and private sector debt will be crowded out by this exemption. As long as only private debt is taxable through source withholding on interest payments, it will face a competitive handicap in attracting investors. Removing this bias requires that government interest payments also be subjected to source withholding. There are no revenue implications if interest payments on government debt become taxable. The government would pay a higher interest cost on its debt, but this additional cost would be matched by the larger amount of revenue obtained from source withholding.

Improving Tax Law Provisions

First, Egypt's policy makers should consider eliminating the paid-up equity capital deduction for corporations. As discussed in Section 3, this deduction represents a subsidy to corporate investment which results in negative effective marginal tax rates (Table 6). This tax preference discriminates against noncorporate and smaller firms and has no place in a rational corporate tax system which seeks to establish equal treatment for different types of business. This deduction might have been logical when dividends were taxable at the personal level, but now that they are not taxable it serves no rational purpose.

Second, though banks were not a focus issue in this study, it is appropriate to propose relevant tax policy reforms. Until recently, banks were subject to a general bad-debt provision limiting their deductions for loan losses to 5 percent of their net profits and only for loans that meet stringent requirements for a loss. This rule has been amended by Law 5/1998 which raised loan-loss provisions to 10 percent. It is

still worthwhile to consider devoting a separate chapter in the tax law to banks, insurance companies, mutual funds, and other financial institutions. In terms of taxes, banks and financial institutions are treated as any trading or industrial company without regard to the critical nature of their activities. More specifically, the tax law should address the following issues:

(a) The technical provisions required by banks and other financial institutions to meet risks related to their activities should be tax deductible without any restrictions or limits, as is the actual case with the insurance companies.

(b) Non-accrued or suspended interest on non-performing loans or delinquent debts should not be subjected to the tax unless such interest is actually collected.

(c) Mutual funds need to be properly addressed by the tax law. This will require adding new provisions to the tax law to provide fair tax treatment for the profits of such funds and the distribution of these profits.

Third, it is highly recommended that Egypt's tax system allows full input crediting for investment purchases under the sales tax. Under the current sales tax law, purchases of capital goods bear a substantial tax burden through the denial of an input tax credit for such purchases. Such a credit should be given if consumption, rather than consumption and investment, were defined as the sales tax base, and if the sales tax were not intended to act as a deterrent to investment. This reform of the sales tax is gaining more and more ground, and is expected to be introduced by the government shortly after provisions are made to accommodate its revenue effects.

Fourth, the reform program must also improve the taxation of foreign-source income. The current tax system places Egyptian companies at a competitive disadvantage by only allowing these companies to deduct foreign taxes from income remitted to the Egyptian parent. Since the development of export markets requires companies to establish subsidiaries and agencies operating in foreign countries, a significant benefit to exporters would be to eliminate double taxation of foreign-source income. This can be accomplished by exempting foreign source income all together or, alternatively, tax foreign-source income with a credit given for foreign taxes—the minimum rate of tax on income would be the Egyptian tax rate.

Tax Administration Reform

It is necessary that policymakers simplify the tax system further to make it easier for the private sector to understand and comply with, as well as for the tax official to

administer. In Egypt, the process of tax assessment and collection is time-consuming and costly; not surprisingly, a large number of tax assessments end up awaiting a court resolution. In addition, tax underreporting, avoidance and evasion are widespread.

Here, the system of capital depreciation is a good example of administrative complexities. Current tax law depreciates assets for tax purposes on a straight-line basis, using some 50 asset categories and 11 different depreciation rates. This system is over complicated for both taxpayer and tax official. Simplification of the depreciation procedures should be considered. Another good example, is the current system of 'additions and discounts'; the tax is withheld as a subtraction from the value of certain purchases (a discount) and as an addition to the value of certain sales. This system, generally not practiced elsewhere, complicates tax administration and increases Egyptian business costs, although its aim is to reduce collection lags. Practice in other countries suggests that this can be better accomplished through heavier penalties for late declarations and payments, and presumptive taxation for 'hard-to- tax' taxpayers.[49]

Although efficient tax administration is not the explicit concern of this study, it is a necessary element. For even without any changes in the current tax law, the government could both achieve a major short-term increase in tax revenues and, at the same time, significantly encourage private investment by improving, the tax administration process in Egypt.

Tax-Incentive Policy Options

Finally, it is necessary to evaluate other incentive policy options compared to tax holidays. As discussed previously, tax holidays in Egypt provide some benefits to certain activities, but are not well targeted. Consequently, they accentuate the problem of tax-induced allocative distortions due to differential tax treatment of investments across industries, assets and modes of finance. Moreover, this tax incentive scheme operates at a relatively high cost in terms of foregone revenues. The relevant issue, is: what is the best type of tax incentive to boost investment without losing considerable revenue? Indeed it must be emphasized that the goal is not to advocate the elimination of tax incentives, an issue that proved to be strongly opposed by both investors and

[49] In Egypt, the 'hard-to-tax' category of taxpayers is likely to be dominated by small artisans, farmers and shopkeepers. Yet, it may also include high value-added, self-employed professionals (doctors, lawyers, etc.) as well as share- and bondholders.

policymakers in Egypt. The concern is rather to discuss alternatives to tax holidays that may be more efficient and also cost-effective.

Another form of tax incentives, found in many OECD countries, is investment tax allowances or credits. These allowances take three forms: (i) accelerated depreciation, which allows companies to write-off capital more quickly for tax purposes than for accounting; (ii) an investment expenditure allowance, which allows companies write-off a percentage of qualifying investment expenditure from their taxable income; and (iii) investment tax credit, which allows companies to reduce taxes paid by a percentage of investment expenditure. The second and the third types are tax incentives that immediately benefit the investing company.

In comparison with tax holidays, these investment allowances have distinct advantages: first, an investment tax allowance permits the company to receive the benefit of lower corporate taxes only if it makes an investment. The incentive is correctly targeted at the desired activity—that is, additional investment, rather than formation of a new company.

Second, the investment tax allowance, if targeted towards long-lived capital such as structures and machinery, encourages investments that are expected to be profitable for many years. It encourages companies to take a long-term view when planning investments, whereas tax holidays tend to favor short-run projects.

Third, the investment allowance costs the government less than alternatives such as tax holidays. By targeting current capital spending, the allowance causes less revenue leakage than with a tax holiday. Like any other tax incentive, the investment allowance reduces the government's revenue, but the allowance is probably the most cost-effective policy, because it is targeted more precisely to increase productive capacity.

Fourth, because these tax allowances are provided as a part of the regular tax code to every investor a separate investment incentives law would not be necessary. Consequently, the tax policy would be significantly more transparent. Foreign investors, in particular, appear to be more concerned about the permanent features of a country's tax system than transitory tax incentives that are valuable only for an initial period.

Finally, tax allowances have a further advantage that they are much less susceptible to transfer pricing manipulation, and they provide 'up-front' benefits to

investors which makes the payoff from investment more certain for them. With tax holidays there is always the concern that government might suddenly revoke them.

To sum up, tax allowances, or credits, are much more effective incentive instruments than tax holidays. If tax holidays are to stay, however, care should be given to limiting the objectives of the incentive policy. Tax holiday policy will be more effective and less costly if it were restricted to some well-defined and specific objectives, rather than granting holidays to over 16 activities according to the current investment law. This lack of focus creates, as previously mentioned, additional distortions in addition to those induced by the general income tax law and needlessly sacrifices government revenues.

Before policymakers define the objectives, it is necessary to first decide how much tax revenue should be allocated to tax holidays. Tax incentive policy competes with expenditure policy for the use of available tax revenue, making essential a proper evaluation of the relative social returns of using resources in support of either one of the alternative policies.

It is difficult, however, to state precisely how much tax revenue a country should allocate to tax incentives, but obviously it cannot be that much. As stressed earlier, tax incentives are not substitutes for an adequate and efficient tax system. If the tax system is so distorting as to require a large fraction of the tax revenue be rebated in order to reduce these distortions, would it not be better to reform the tax system so that it produces the desired revenue with fewer distortions? Similarly, if other distortions induced by misguided economic policy are so severe as to require corrective tax incentives that result in substantial loss of tax revenue, then again, would it not be better to reform the economic policy to minimize distortions? Furthermore, as noted before, tax incentives can achieve only limited results and, therefore, only a small amount of tax revenue should be allocated to them.

Once it has been decided how much revenue should be allocated to tax holidays, objectives should be carefully defined to obtain the maximum increase in economic welfare for a given amount of revenue. Tax holidays can be more effective in the pursuit of limited objectives, particularly: promoting manufacturing industry, exports and investment in research and development. That is not to imply that other objectives, like the promotion of employment or savings should not be pursued, but rather that there are other more effective ways of attaining them.

The point that needs to be stressed is that tax incentives in general, and tax holidays in particular, are only marginally effective, while these economy-wide objectives need more than marginal changes. The fact that the amount of revenue allocated to tax incentives has to be small, if it were not to damage the tax system intrinsically, validates this conclusion. In a word, tax incentives are not a substitute for an efficient tax system. All tax reform efforts should therefore, be directed to achieving the latter.

Conclusion

In conclusion, the corporate tax and incentive policy in Egypt is not a good tax structure to maintain for the coming century. Its failures in terms of efficiency and growth are, simply, too severe not to correct. According to theory, a good tax system should balance the conflicting objectives of revenue, equity, efficiency, and growth, together with simplicity. This paper argued that in spite of many recent reforms and revisions of our tax system, there has never been any attempt at a comprehensive tax reform in Egypt. Most tax reform initiatives have arisen either in response to a major fiscal crisis (the fiscal reform program that was enacted under ERSAP I in 1991 was no exception) or to correct for some tax defaults. Most of the reform efforts, therefore, were of a piecemeal nature and lacking the cohesive view of a comprehensive tax reform. That is not to deny the merits of the latest tax reforms that helped to generate more revenue thus bringing down the fiscal deficit and contributing, with other reform measures, to achieving the macroeconomic stability of the Egyptian economy. The problem, however is that there has always been, excessive focus on the revenue objective of the tax policy and too little recognition of the need for securing efficiency and growth objectives. Moreover, tax changes create winners and losers, also, each tax change introduces some efficiency and vertical equity trade-offs. The consequences of reform must be recognized, studied and addressed to maximize the benefits of a comprehensive tax reform that endeavors to balance the ever-conflicting goals of taxation: revenue, efficiency and equity.

Appendices

Appendix A

Incorporating Other Taxes in Measuring the Effective Tax Rate

This appendix presents additional details on incorporating other taxes—particularly personal taxes—in the user cost of capital to evaluate how investment is effected by the overall tax system.

Governments are innovative in assessing all sorts of taxes on corporate investments, besides the corporate income tax. These taxes will equally effect the user cost of capital.[50] Some studies have tried to incorporate non-capital taxes such as sales and payroll taxes in the user cost of capital to calculate the overall impact of the tax system on firms' decisions. It is debatable, however, whether this is an appropriate methodology to follow. Payroll taxes affect labor decisions, not capital decisions. Sales taxes are neutral with respect to capital as long as they are levied on consumption goods, not capital goods. Instead, taxes such as capital, payroll and motor fuel taxes might have impact on the cost of production. Therefore, it would be more appropriate to calculate the 'effective tax rates on the marginal cost of production', which is increased by taxes on various inputs, subject to the incidence of the taxes. This measure, which aggregates taxes according to the cost structure of the firm, shows that taxes affect the production decision of the firm rather than a particular input such as capital.[51]

As for personal taxation, it may be an important element in assessing the cost of capital and the effective tax rate. To incorporate personal taxes in the effective tax rate, it is necessary to account for personal tax rates on nominal interest income (denoted by m), the accrual equivalent tax rate on nominal capital gains (c), and the dividend tax rate (v).[52] After personal taxes are paid, investors earn interest income at a rate i(1-m), capital-gain income equal to p (1-c) and dividend income equal to p (1-v). Let ß be the proportion of assets held as bonds, 1-ß be the proportion of assets held as equity, (a) be the proportion of equity income derived as capital gains, and (1-a) be the proportion of equity income derived as dividends. Therefore, the after-tax

[50] To incorporate these various taxes on corporate investments in the user cost of capital, See, Estache (1995).
[51] Mintz (1996), p. 158.
[52] Recall that capital gains taxes are assessed only when assets are sold. An accrual equivalent capital gains taxes is calculated by discounting payable capital gains taxes to reflect that the amount of tax paid had an accrual basis been used instead. See, Davis and Glendy (1990) for a discussion of different methods of measuring the accrual equivalent capital gains tax rate.

rate of return on capital, after correcting for personal taxes and inflation, is equal to the following:

$$r^n = ßi\,(1\text{-}m) + (1\text{-}ß)\,p\,(1\text{-}\theta) - \pi,$$

with θ denoting the average tax rate on equity income (θ = a c + (1-a) v).

One can measure the effective capital tax rate, T, that incorporates both corporate and personal taxes by using the above expression for r^n in the right-hand side of equation 6 in the text.[53]

Including personal taxes as part of effective tax rate measure clearly confronts analysts with a critical issue that is related to the choice of personal tax rates relevant in assessing the effective tax rate on capital. Investors could face different tax rates for several reasons:

- *Progressiveness of the tax rate schedule at the personal level.* This implies some investors face lower tax rates on capital income than others.
- *Tax exemptions for certain forms of saving.* Some sources of savings, such as pension plan savings, are exempt from taxation.
- *Financial intermediaries.* Banks, insurance companies, mutual funds, and other financial institutions have their own special tax consideration.
- *Foreign investors.* Companies are owned not only by domestic investors but also by foreigners who are subject to a country's withholding and income taxes levied by the government where the investor resides.

To consider all the various types of potential investors, a financial model that explains the determination of financial policies and rates of return on assets is necessary.[54] It is useful, however, to consider one particularly relevant point related to financial markets in open economies.

In earlier works on effective tax rates, such as king and Fullerton (1984), it was assumed that economies were closed to international capital movements.[55] Under this assumption, it is best to measure an aggregate effective tax rate on capital incorporating both the corporate and personal income provisions of a country to evaluate how investment is affected by the tax system. If either the corporate tax rates

[53] This approach is used in King and Fullerton (1984) and OECD (1991) which measure the effective tax on capital, taking into account both corporate and personal tax. See, King and Fullerton, eds. (1984).
[54] See p. 10 above.
[55] A rich literature reflecting at least two approaches has flourished since the 1980s. One well-known approach is discussed in King and Fullerton (1984), another approach developed particularly for a small, open economy can be found in Boadway, Bruce, McKenzie Mintz (1987).

or the personal tax rates were increased, both domestic investment and savings—equal to each other in equilibrium—would be affected simultaneously.

In an open economy, however, where savings are obtained from international sources as well, it is no longer clear what impact personal taxes might have on investment and corporate taxes on savings. In a small open economy, rates of return to investors are determined by international markets. This implies that domestic investment and savings decisions may not influence international interest rates and yields on financial instruments. Thus personal taxes on domestic savings may reduce the return earned by savers, but this would simply reduce capital outflows of saving or increase capital inflows from abroad without affecting the interest rate that governs a firm's investment decision. Similarly, corporate tax provisions reduce investment, increasing (or reducing) capital outflows (or inflows) without affecting domestic saving decisions that depend on international yields on assets. Given these conclusions, one should disaggregate domestic corporate and personal effective tax rates for a small open economy to determine how investment and savings are affected.

These two extreme cases, the closed and open economies, raise important issues for policy makers. For example, in a closed economy, personal taxation reduces both domestic savings and corporate investment. In a small open economy, savings would be reduced, capital outflows would decline, but investment would not be affected, since firms finance capital at the internationally-determined interest rate. Thus policies such as reducing tax rates at the personal level could be largely ineffective in increasing corporate investment in a small open economy.

How open are economies to capital movements? Some argue that national capital markets are closed since domestic investment and savings are highly correlated, in part due to government policies that interfere with capital flows. Others suggest that most corporations' equity is owned by domestic investors, although this does not suggest that foreign savings could be the primary determinant of marginal savings. In addition, interest rates across countries seem to be closely related through financial arbitrage. Recent evidence suggests as well that cross-border financial transactions have increased substantially to 64 percent of GDP in 1990 compared with 9.6 percent in 1980 for the G7 countries (Edey and Hviding 1995).

This discussion of open versus closed economies is relevant in evaluating the impact of integrating corporate and personal taxes on capital income. One view is that the integration of personal taxes that results in relief for resident shareholders only is

not effective in integrating corporate and personal taxes, since foreign investors do not get the same benefit. The reduction in dividend or capital gains taxes only increase domestic savings without affecting the cost of capital of the company. Thus integration is not necessary. Alternatively, a country's economy may be sufficiently large or distinct that domestic savings influence interest rates. Under these conditions, a reduction in dividend and capital gains taxes will increase the international supply of savings to an economy and reduce interest rates. In this case, integration is of benefit to investment. Moreover, integration may still be necessary to simplify a tax system and to minimize tax planning opportunities.

Appendix B

Taxation, Risk and Cost of Investment

Investment is inherently risky. When firms commit themselves to new capital projects, they must predict the after-tax returns on investment. These returns are uncertain; so risk, the aversion that investors have towards uncertainty, plays an important role in affecting capital decisions. Taxes affect the perception that investors have of risk, and thus it is clearly important to determine the degree to which taxes affect the evaluation of risky investments.

The rise in investment comes from many factors:

- *Income risk:* uncertainty with respect to operating income or revenues net of current costs.
- *Capital risk*: uncertain economic depreciation costs due to unknown wear and tear of capital assets or obsolescence (as future innovations that replace capital are uncertain).
- *Financial risk*: uncertainty with respect to future interest expenses incurred for borrowed funds. Financial bonds held by investors may be risky, since firms may be unable to repay the principal and interest on loans. Investors therefore demand a higher rate of interest on bonds taking into account the risk of non-repayment of loans and interest and any associated bankruptcy costs.
- *Inflation risk*: uncertainty with respect to future inflation rates that will affect future earnings as well as the cost of replacing assets.
- *Irreversibility risk*: as capital may be irreversible (once sunk, it can not be used for another purpose), uncertainty is increased for investors who have to be concerned about the timing of a project.
- *Political risk*: this arises from uncertainty with respect to uncertain public policies, such as tax policy.

When uncertainty is present, investors will balance future gains with potential losses. For example, suppose that an investor can choose a safe asset, (say a government Treasury Bill, with a rate of return of 6 percent per annum or a risky investment with an expected rate of return of 10 percent per annum. If the investor is just as willing to invest in either asset, then the excess rate of return on the risky asset, 4 percent, which is the difference between the expected rate of return of 10 percent

and the safe rate of return of 6 percent, is the monetary return or 'risk premium' needed to compensate the investor for risk.

An important aspect of tax policy when considering risk is how the government treats losses when incurred by investors. If the income tax provides for 'full refundability' or a 'full loss offset' when losses are incurred, then, the tax system is neutral with respect to risk. When the government does not fully refund losses, the tax system can dramatically increase the cost of risk associated with investment, thus, the tax system clearly discourages risky investment.

Under current corporate income tax systems, losses are only partly refundable. Governments may allow losses to be carried back or carried forward for a limited period of time.[56] Given the dynamic nature of investment, the presence of carry-backs and carry-forwards complicates considerably the analysis used to model the impact of taxes on risky investments.[57] For example, accumulated losses in current years can help shelter taxes on future investments, thereby reducing the amount of tax to be paid on future income generated by marginal investment decisions. Similarly, current taxable profits may be used to absorb future losses, thereby reducing the amount of tax to be paid on current losses. Thus at each point of time, the effective tax paid on an investment will vary according to the history of the company.

In sum, without precise estimates of risk, it is difficult to determine the total impact of the tax system on investment.[58]

[56] When current-year losses are carried back, the loss is applied against profits earned in qualifying past years, resulting in a refund of corporate taxes. Alternatively, when losses are carried forward, the losses are applied against profits of qualifying future years, resulting in a reduction in future corporate income tax.

[57] See Mayer (1986), pp. 93-112.

[58] McKenzie (1994) shows how the incorporation of risk can significantly affect the effective tax rate. McKenzie estimates effective tax rates for Canada and finds that, in aggregate, the 1992 effective tax rate on riskless reversible investment is 32 percent, 42 percent on reversible risky investments, and 48 percent on risky irreversible investment. See McKenzie (1994), pp. 604-19.

Appendix C: Statistical Tables

Table 1. Corporate Income Tax Provisions for the Major Developed Countries, 1994

	Canada	***France***	***Germany***	***Italy***	***Japan***	***United Kingdom***	***United States***
Income Revenues	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercorporate dividends	No (except private)	Exempt except subject to minimum tax (see below)	Exempt except subject to minimum tax (see below)	Exempt except subject to minimum tax (see below)	Exempt with ownership > 25%	Exempt except subject to minimum tax (see below)	80% tax-free with ownership > 20%
Capital Gains	Three-quarters of gain	Short term: as income long term: 19% except for 33% for portfolio securities	Real property	Real property (full rate)	Yes-Land with surtax		
Expenses Wages and salaries	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inventory costs [a]	FIFO	FIFO	LIFO	LIFO	LIFO or FIFO	FIFO	LIFO or FIFO
Depreciation	Historical cost	Historical cost	Historical cost	Historical cost	Historical cost	Historical cost	Historical cost
Interest expense	yes	yes	yes	yes	yes	yes	yes
Losses (operating only) [b]	Three-year c.b.; seven-year c.f.	Five-year c.f.; depreciation expenses have indefinite c.f.	Two-year c.b.; indefinite c.f.	Five-year c.f.	One-year c.b.; five-year c.f.	Three-year c.f.; indefinite c.f.	Three-year c.b.; 15-year c.f.
Corporate Tax Rate	Federal: 29.12% Provicial: 8.9-17%	$33^{1}/_{3}$ %	Federal:45% (undistributed profits), 30% (distributed) State: 5-15% (deductible)	Central: 36% Local: 16.2%	Central: 37.5% Prefecture: 13.2% (deductible) Corporate inhabitants: 6-14.7% (deductible) total tax rate: 51.4%	33%	Federal: 35% State: up to 12% (deductible)
Foreign Source Income	Yes except dividends from foreign affiliate	Exempt except for pre-compte (see below)	Exempt dividends if ownership>10% otherwise taxed with credit for foreign taxes	Yes with credit	Yes with global credit	Yes with credit per source	Yes with global credit
Minimum Tax	Capital tax reduced by corporate income surcharge Dividends from term preferred shares	Pre-compte: 50% on dividends paid (or 33% of grossed-up dividends)	25% of dividends paid	10% of dividends paid	No	ACT of 25% on dividends paid (or 20% of grossed-up dividends)	20% on income
Consolidation	No	Yes for property transfer	Yes	No	No	No, but relief for source losses	Yes
Capital and Property Tax	Provincial capital tax: up to 0.5% of assets Property tax	Property tax Business license tax	0.6-11% of trade capital	Property tax: 0.4-0.6% Transfer tax: 6-17% New equity tax: 0.75%	1.7% on structures 1-4% on depreciable assets	Property tax only	No property tax

a. FIFO = first-in, first-out; LIF 0 = last-in, first-out.
b. c.f. = carry-forward, c.b. = carry-back.
Source: Mintz (1996), Table 4.1, p. 147.

Table 2. Distribution of Government Revenues by Source for the MENA Region (percentage)

Country	Year	*Income Tax* [1]	*Corporate*	*Individual*	*Payroll* [2]	*Property Tax*	*Indirect Tax*	*International Trade Tax*	*Other Taxes*	*Non-Tax* [3]	*Total*
Egypt	1986	16	13	1	14	1	11	13	6	40	100
	1990	18	13	2	15	1	13	13	9	31	100
	1992	20	16	2	9	1	13	10	8	39	100
	1995	24.4	21.7	2.7	14	---	16.6	9	4	32	100
Jordan	1986	10	----	----	14	4	13	28	7	38	100
	1990	16	13	3	1	3	21	27	4	29	100
	1992	10	3	6	----	4	19	36	5	26	100
Morocco	1986	19	8	10	5	3	46	14	5	9	100
	1990	23	10	10	4	2	37	18	1	14	100
	1992[4]	25	11	11		---	42	19	3	9	100
Tunisia	1986	16	7	6	8	2	22	25	2	26	100
	1990	13	6	5	14	2	19	28	2	22	100
	1992	13	5	6	13	2	24	28	2	18	100

Source: IMF, Government Finance Statistics Yearbook, (unless otherwise indicated and IMF Occasional Paper, No. 117, January 1995 (data for 1992).

Notes:

(1) The total amount of income tax is the sum of corporate income tax, individual income tax and other unallocatable taxes on income which are not shown in the table.

(2) Including social security contributions and taxes on payroll and workforce.

(3) Non-tax revenue includes fees, rents and royalties, and capital revenue.

(4) Numbers are not strictly comparable to 1986 or 1990 due differences in coverage.

Table 3. Taxes on Corporate Income as percentage of Total Taxation

	1988	*1992*
Australia	10.7	14.5
France	5.3	3.5
Germany	5.3	4.0
Greece	3.9	4.6
Italy	9.4	11.6
Spain	6.5	6.4
Turkey	10.5	4.7
United Kingdom	10.7	7.6
United States	8.4	7.6
Unweighted average		
OECD Total	7.7	6.8
OECD Europe	6.5	5.8

Source: Revenue Statistics of OECD member countries, 1965-93. Paris, OECD (1994).

Table 4. Total of In-Operation and On-Stream (In-Land Companies) Untill 31/12/1997 (£E millions)

Type of Company	*Approved Projects*			*In-Operation Projects*			*On-Stream Projects*		
	No. of Projects	Capital	Inv. Costs	No. of Projects	Capital	Inv. Costs	No. of Projects	Capital	Inv. Costs
Industrial	3,841	24,456	49,632	705	9,106	16,120	3,136	15,350	33,507
Agricultural	312	2,176	6,245	92	835	1,793	220	1,341	4,452
Construction	180	1,184	2,248	154	1,022	1,907	26	162	341
Tourism	622	16,755	31,869	137	2,703	5,199	485	14,052	26,670
Financial	533	15,032	15,032	336	10,704	10,704	197	4,328	4,328
Services	300	4,388	8,944	132	1,150	2,798	168	3,238	6,146
Total	5,788	63,991	113,970	1,556	25,520	38,521	4,232	38,471	75,444

Source: Generals Authority for Investment and Free Zones, 1998.

Table 5. Profitability of Tax Holiday Firms

Firms	*Net income (£E million)*	*Assets (£E million)*
0	0	0
0	0	0
2	-167	312
28	-27	66
2	-10	44
64	-48	308
10	-59	446
42	-157	2,175
90	-19	702
537	2,532	108,108
257	750	10,945
202	2,863	24,471
71	122	742
200	1,872	8,999
224	185	569
15	25	44
12	69	82
2	10	4
0	0	0
1,759	7,942	158,018

Source: Barents (1996), unpublished.

Table 6. Top Choices for Foreign Direct Investment

Country	*FDITX*
1. Singapore	3.01
2. Hong Kong	0.51
3. Israel	0.37
4. Malaysia	0.36
5. Switzerland	0.28
6. Chile	0.28
7. Ireland	0.28
8. Australia	0.28
9. Sweden	0.23
10. Finland	0.20
11. El Salvador	0.18
12. Canada	0.17
13. Thailand	0.15
14. Venezuela	0.14
15. United States	0.13
16. Philippines	0.10
17. Czech Republic	0.10
18. Vietnam	0.10

- FDITX measures the number of times a country was mentioned as the top choice for an exporter's next foreign investment, divided by the country's population in millions.
- Exporters are classified as all respondents answering 5,6 or 7 to question s02 of the 1997 Executive Survey's special section of foreign direct investment.
- The question asked respondents to state whether their foreign plants serve local markets with few exports or export markets with no local sales. Country choices were recorded in Questions 29 of the survey: "Please list the top five countries in which you would consider making your next overseas investment."

Source: *The Global Competitiveness Report* (1997), p. 44.

Table 7. Outcome of the Two Scenarios (percentage)

	1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/2000*	*2000-02*	*2003-05*
I. Base Case Scenario							
GDP at market price, real growth rate	4.9	4.4	4.4	4.5	4.5	4.6	4.6
Inflation, GDP deflator	7.4	5.3	5.0	4.8	4.7	4.5	4.4
GNP, real, growth rate	5.0	4.6	4.5	4.5	4.6	4.6	4.7
Gross natl. disposable income, real growth rate	4.5	4.2	4.2	4.6	4.4	4.4	4.5
GDP per capita, real growth rate	2.7	2.2	2.2	2.4	2.4	2.5	2.6
Unemployment, % of labor force	9.7	10.3	11.1	12.0	12.9	14.0	17.0
Consumption /GNP	84.2	84.3	84.5	84.9	85.0	85.2	85.3
Gross investment/GNP	20.7	20.0	19.6	19.5	19.1	18.5	17.6
Gross domestic saving/GNP	17.0	16.7	16.4	16.0	15.9	15.7	15.4
Gross national saving/GNP	20.8	20.2	19.7	19.4	19.1	18.7	18.0
Overall budget deficit/GNP	-1.3	-0.9	-1.3	-0.3	0.0	0.3	0.6
Current account balance/GNP	0.1	0.1	0.1	-0.1	0.0	0.1	0.4
Non-oil merchandise exports, growth rate	5.0	5.0	5.1	5.1	5.1	5.2	5.2
M2 growth rate	13.0	10.0	9.7	9.6	9.5	9.3	9.2
II. High Case Scenario							
GDP at market price, real growth rate	4.9	5.7	6.0	6.3	6.5	7.0	7.5
Inflation, GDP Deflator	7.4	7.0	6.7	6.5	6.4	6.0	5.5
GNP, real, growth rate	5.0	5.9	6.2	6.3	6.5	7.0	7.5
Gross national disposable income, growth rate	4.5	5.4	5.7	6.4	6.3	6.8	7.3
GDP per capita, real growth rate	2.7	3.5	3.8	4.1	4.4	4.8	5.4
Unemployment, % of labor force	9.7	9.2	8.6	7.9	7.2	6.4	6.0
Consumption/GNP	84.2	85.5	84.0	83.0	81.5	80.0	75.0
Gross investment/GNP	20.7	21.2	21.6	23.8	24.5	25.6	26.0
Gross domestic saving/GNP	17.0	15.6	16.9	18.1	19.6	22.0	28.0
Gross national saving/GNP	20.8	19.0	20.0	21.2	22.3	24.5	29.0
Overall budget deficit/GNP	-1.3	-0.9	-0.6	1.4	2.3	3.0	4.0
Current account balance/GNP	0.1	-2.1	-1.7	-2.6	-2.2	-1.7	2.2
Non-oil merchandise exports, growth rate	5.0	15.0	16.0	16.0	16.0	17.0	17.0
M2 growth rate	13.0	13.2	13.2	13.3	13.4	13.5	13.5

Source: World Bank (1997a), p. 27.

Table 8. Net Foreign Direct Investment Flows to Egypt, 1975-1996, (1996 US$ million)

Year	*Value*
1975	15
1976	112
1977	176
1978	492
1979	1596
1980	591
1981	788
1982	322
1983	544
1984	832
1985	1403
1986	1494
1987	1127
1988	1353
1989	1392
1990	799
1991	274
1992	500
1993	551
1994	1378
1995	605
1996	-

Source: World Bank (1997b), Appendix A, p. 95.

Table 9. Average Corporate Tax Rates Ranking of Egypt vs. Other Countries, 1997

Ranking	*Country*	*Average Corporate Tax Rate*
1	Ireland	10.00
2	Hong Kong	16.50
3	Hungary	18.00
4	Finland	25.00
5	Taiwan	25.00
6	Turkey	25.00
7	Vietnam	25.00
8	Switzerland	25.55
9	Singapore	26.00
10	Korea	28.00
11	Norway	28.00
12	Sweden	28.00
13	China	30.00
14	Indonesia	30.00
15	Malaysia	30.00
16	Peru	30.00
17	Thailand	30.00
18	Argentina	33.00
19	France	33.00
20	Iceland	33.00
21	Luxembourg	33.00
22	New Zealand	33.00
23	United Kingdom	33.00
24	Austria	34.00
25	Denmark	34.00
26	Mexico	34.00
27	Venezuela	34.00
28	Chile	35.00
29	Colombia	35.00
30	Greece	35.00
31	Netherlands	35.00
32	Philippines	35.00
33	South Africa	35.00
34	Spain	35.00
35	United States	35.00
36	Australia	36.00
37	Israel	36.00
38	Portugal	36.00
39	Italy	37.00
40	Japan	37.50
41	Zimbabwe	37.50
42	Belgium	39.00
43	Czech Republic	39.00
44	India	40.00
45	Poland	40.00
46	Slovakia	40.00
47	Egypt	43.00
48	Russia	43.00
49	Canada	43.50
50	Germany	45.00
51	Brazil	48.00
52	Jordan	n/a
53	Ukraine	n/a

Source: *The Global Competitiveness Report* (1997), p. 235.

Table 10. Major Economic Indicators in Egypt and Selected Countries (1997)

	Egypt	*Israel*	*Turkey*	*Chile*	*Czech Republic*	*Singapore*
Overall Ranking	28	24	36	13	32	1
GDP US$ bn	66	90	181	72	52	93
Per capita	1.105	15.850	2.867	5.106	5.062	31.141
World output share	0.2	0.3	0.6	0.2	0.2	0.3
World exports share	0.2	0.4	0.6	0.3	0.5	2.4
Real GDP growth	4.3	4.2	6.4	7.2	4.2	7.0
Inflation	7.2	11.8	82.3	7.4	9.0	1.4
Unemployment	17.8	6.4	7.2	6.5	3.1	3.0
FDI as share of GDP	1.1	1.8	0.5	1.6	5.5	5.6
Real export growth	-14.0	5.9	n/a	9.4	n/a	7.0
Investment /GDP	17					
Savings/GDP	13					

Source: *The Global Competitiveness Report 1997*.

Table 11. Recommended Tax Treatment of Capital Income

Type of Capital Income	***Type of Taxpayer***	
	Corporate	Individual
Equity Income excluding capital gains	Taxable	Nontaxable
Interest Income		
Private debt	Taxable	Nontaxable
Public debt	Taxable	Taxable
Capital Gains		
On securities	Nontaxable	Nontaxable
On real assets	Taxable under the new depreciation rules	Taxable under the 5% real estate tax.
Rental Income	Taxable	Taxable

Source: Barents (1996), Table 6.

References

Abdel Monem, A. (1998), "Egypt's General Sales Tax: Recent Develo pments and Reforms Ahead." ECES, Working Paper No. 22, Cairo.

Alan Auerback (1995), The Cost of Capital and Investment in Developing Countries: Fiscal Incentives for Investment and Innovation. Anwar Shah (ed.). Oxford University Press.

Arnold C. Harberger (1990), "Principles of Taxation Applied to Developing Countries," In World tax reform, edited by M.J.Boskin and Ch.E.Mclure. International Center for Economic Growth. (San Francisco: ICS Press).

Barents (1996), Reforming Corporate Taxes in Egypt. Co rporate Tax Project.

Bator, Francis (1958), "The Anatomy of Market Failure," *Quarterly Journal of Economics* 72 August. (Cambridge, Massachesetts).

Boadway, Bruce, McKenzie, and Mintz (1987), "Capital Income Tax in Canada: Analysis and Policy" Canadian Tax Foundation, Toronto.

Boadway, R. and Bruce, N. (1984), "A General Proposition on the Design of a Neutral Business Tax," *Journal of Public Economics* 24.

Boadway R. and Shah, A. (1995), "Prespectives on the Role of Investment Incentives in Developing Countries," In *Fiscal incentives*, edited by A. Shah (Oxford: Oxford University Press).

Chirinko (1992), "Business Fixed-Investment Spending: A Critical Survey of Modeling Strategies, Empirical Results, and Policy Implications," University of Munich, Cente r for Economic Studies, WP No. 27.

David Dunn and Anthony Pellechio (1990), "Analysing Taxes on Business Income with the Marginal Effective Tax Rate Model," World Bank Discussion Papers No. 79. Washington, D.C.

Davis, J. and Glendy, G. (1990), "Accrual Equivalent Marginal Tax Rates for Personal Financial Assets," *Canadian Journal of Economics* 13.

Edey, M. and Hviding, K. (1995), "An Assessment of Financial Reform in OECD countries," Organization for Economic Cooperation and Development, Economics Depar tment, Working Paper No. 154.

Engen, E. and Skinner, J. (1996) "Taxation and Economic Growth" NBER Working Paper 5826.

Estache, A. (1995), "Evaluating the Asset Based Minimum Tax on Corporations: An Option - Pricing Approach," mimeo. World Bank.

Galal, A. (1996), "Towards a Framework for a Reform Strategy for Egypt", ECES, March unpublished.

Gandhi, Ved (ed.) (1987), *Supply-Side Tax Policy*, International Monetary Fund, Washington, D.C.

Henry Simons (1950), *Personal Income Taxation*, (Chicago: University of Chicago Press).

Howard Shatz, (1997) "What Attracts FDI?" In *The global competitiveness report.*

International Monetary Fund (1994), "Egypt: Rationalizing Investment Tax Incentives", Fiscal Affairs Department, January. Washington, D.C.

Joel Slemrod (1990), "Tax Principles in an International Economy," In *World tax reforms*, edited by Michael Boskin and Charles Maclure. International Center for Economic Growth (ICEG), San Francisco, California.

Jorgensen, D. (1963), "Capital Theory and Investment Behavior," *American Economic Review* 53.

King M. and Fullerton, D. (eds.)(1984), *The Taxation of Income From Capital*, (Chicago: University of Chicago Press).

Maclure, C. Jr. (1979), *Must Corporate Income Be Taxed Twice?* (Washington, D.C. Brookings Institution).

Mayer, C. (1986), "Corporate Tax, Finance, and the Cost of Capital" *Review of Economic Studies* 53.

McKenzie, K. (1994), "The Implications of Risk and Irreversibility for the Measurement of Marginal Tax Rates on Capital," *Canadian Journal of Economics* 27.

McKinsey and Company (1996), *Capital Productivity*, McKinsey Global Investment, Washington, D.C.

Mendoza, Milesi-Ferretti, and Asea (1996), "On the Ineffectiveness of Tax Policy to Alter Long-Run Growth: Harberger's Super Neutrality Conjecture," Re serve Board of Governors. Memo.

Ministry of Economy (1997), ARE: Recent Economic Developments and Statistics, ARE 1997.

Mintz, J. (1990), "Tax Holidays and Investment," *World Bank Economic Review* 4.

Mintz, J. (1996), "The Corporation Tax," In *The economics of tax policy*, edited by M. Devereux (Oxford: Oxford University Press).

Mintz, J. and Tsiopoloulos (1995), "Corporate Income Taxation and FDI in Central and Eastern Europe," In *Fiscal incentives for investment and innovation*, edited by Anwar Salah (Oxford: University Press).

El Samalouty G. (1995), "Fiscal and Tax Reform in Egypt" *L'Egypte Contemporaine,* No. 440.

Shah, A. (1995), *Fiscal Incentives for Investment and Innovation*, published for the World Bank (Oxford: Oxford University Press).

Tanzi, V. and Zee, H. (1996), "Fiscal Policy and Long-Run Growth," IMF Working Paper 96/119 Washington, D.C.

The World Bank (1995), "Egypt: into the Next Century," Discussion papers, Vol.1, Country Division Report No. 14048-EGT, May, Macroeconomic Framework.

The World Bank (1997), "Foreign Direct Investment. Lessons of Experience" Series; 5. IFC. FIAS. Washington, D.C.

The World Bank (1997) Egypt, "Issues in Sustaining Economic Growth," Main Report, No.16207, EGT. World Bank Resident Mission in Egypt.

World Economic Forum (1997), *The Global Competitiveness Report 1997*, (Geneva: Switzerland.