The Impact of Investment Incentives on Canada's Economic Growth

Carlton Braithwaite

A study prepared for the Economic Council of Canada

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1 Introduction

The years, following the Second World War, particularly the 1970s, have witnessed several attempts by Canadian policy makers to use investment incentives as part of an industrial strategy designed to achieve various objectives, including improvement in investment, employment, and costs in specific industries. To date a number of studies[1] have been done on the effects and/or effectiveness of a number of these investment incentives in achieving their stated objectives. It seems fair to say, however, that none of the existing questionnaire, survey, or econometric evidence enables us to make meaningful comparisons of the relative effectiveness of these investment incentives or to draw firm conclusions as to whether they should be replaced, continued in their present form, modified, or supplemented with other policy tools in order to achieve their intended objectives.

Many of the studies have used a partial rather than a general equilibrium approach, and even those which have used the latter have not paid sufficient attention to the benefits and costs associated with the use of these investment incentives. Also, these studies have analysed the effects of selected investment incentives as they have existed through time or under the assumption that they will exist in their current form in the future. Further, no attempts have been made to standardize the investment incentives that were studied for initial revenue loss[2] or to study their effects under comparable monetary and exchange rate regimes. Finally, none of the studies have attempted an in-depth comparison of the effectiveness of selected investment incentives with that of other tools that could legitimately be regarded as alternatives; or, better still, compared the effectiveness of various packages of selected investment incentives and other alternative policy tools to see which combination(s) would most likely achieve the stated objectives under a common set of assumptions with regard to other policies such as monetary and exchange rate policies.

The purpose of this study is to provide some additional econometric evidence on the effects (and effectiveness) of investment incentives by studying the impact of three of the most widely used investment incentives on Canada's economic growth. This will be done in such a way that many of the gaps mentioned above will be filled (the major exception being that the impact of various combinations of these investment incentives – or of these incentives and alternative policy tools – will not be studied here) and we will be able to draw some useful conclusions about the relative benefits and costs of using these policy tools to influence Canada's future economic growth.

Finally, this will also be done in such a way that we may at least gain some insight into whether these investment incentives should be replaced, modified, or supplemented with alternative policy tools if satisfactory economic growth is to be achieved with a minimum, or at least palatable, amount of inflation and, among other things, tolerable levels of unemployment, current and capital account balances, government deficits, and government debt, with its associated interest payments.

Specifically, this study uses the CANDIDE 2.0 model (hereafter referred to as CANDIDE 2.0), which permits this kind of analysis, to analyse and compare the medium-term effects of a corporate tax cut, increased investment tax credit, and increased tax depreciation on Canada's economic growth over the period 1980-85. The emphasis being placed on analysing the ability of changes in these three investment incentives to influence economic growth means that particular attention will be focused on their medium-term effects on the growth of investment, capital stock, employment, productivity, and GNE or output. Since, however, we want to draw useful conclusions about the relative benefits and costs of using these incentives as well as gain some insight into whether (and if so to what extent) they should be used, we must recognize that each of the changes in the incentives under consideration involves a loss of revenue to the federal government. And since the federal government, like other levels of government, operates under a budget constraint, this revenue loss must be financed if the government is to maintain its

expenditures without raising taxes or reducing expenditures (including transfers). In these circumstances the revenue loss and its financing will have effects on the budget positions of the federal and other levels of government, on various levels of expenditures and output, on wages and prices, on the international and financial markets, and on the composition of savings and investment. Once this is recognized it will be clear that if the study's objectives are to be achieved we must examine the effects of these corporate tax policy changes not only on the variables that are usually considered when discussing economic growth but also on other economic variables. Accordingly, in addition to studying the direct effects of these three tax policy changes on investment, we shall also use a general equilibrium approach to study their effects on key variables in the product, factor, and foreign markets and in the government and financial sectors. Furthermore, since investment may be affected by monetary policy through the latter's effect on the industrial bond yield – one of the determinants of the user cost of capital – we shall also use this general equilibrium approach to study the effects of changes in each of the three investment incentives when such changes are accompanied by an accommodating increase in the money supply.

Second, we shall also use this general equilibrium approach to study the medium-term effects of two alternative fiscal policy changes – namely, a personal tax cut, and a manufacturers' sales tax cut on consumer goods. The policy changes in the three investment incentives being studied operate through the user cost of capital, which is one of the important determinants of investment in CANDIDE 2.0. Investment, however, may also be affected by policies that increase the demand for particular products and thus increase output, which is generally the most important determinant of investment in the model. The two alternative policy changes studied will increase real disposable income (assuming that some or all of the reduction in costs associated with the latter are passed on to the consumer) and thus lead to an increase in demand (via consumption) and, in turn, output and ultimately investment.

To facilitate the comparison of all five fiscal policy changes mentioned above, all of the simulations are designed so that in each case the first-year revenue loss associated with the policy change is approximately $1 billion. But, while each of the policy simulations is run under the assumption of nonaccommodating monetary policy, as indicated above, the three investment simulations are also run under the assumption of accommodating monetary policy, so that the effects produced under this assumption, also assuming a first-year revenue loss of approximately $1 billion, can be compared with those produced under the nonaccommodating monetary policy assumption.

In order to achieve the above objectives, the plan of the rest of the study is as follows. Chapter 2 outlines Jorgenson's neoclassical investment model;[3] then it indicates, discusses, and evaluates the departures that have been made from this model in developing the investment functions incorporated into CANDIDE 2.0. Chapter 3 discusses the data required to estimate these investment functions, providing detailed derivations of the special data series (the user cost of capital and the capital stock series) that are needed. Chapter 4 outlines the procedure used in estimating these functions and then presents and discusses the estimation results. Chapter 5 outlines the design of the simulation experiments and indicates the expected responses of the model to the policy changes under study. Chapter 6 presents a summary of the simulation results. Finally, Chapter 7 summarizes the major findings and discusses their implications for using investment incentives to influence Canada's future economic growth.

2 Business Fixed Investment Equations of CANDIDE 2.0

The business fixed investment equations of CANDIDE 2.0 are based on two theoretical investment models, each of which represents a departure from the neoclassical investment model developed by Dale Jorgenson.

The Neoclassical Investment Model

Jorgenson's neoclassical investment model is based on the neoclassical theory of optimal accumulation. According to this theory, a firm's objective can be stated as the maximization of its profits, subject to its technology, where the rental value or user cost of each capital good is charged against its revenue. The profit of the firm is defined as the value of output less the value of all inputs. Thus assuming there are only two factor inputs – namely, labour and capital:

$$\Pi = PQ - \omega L - CK,$$

where

Π = profit,
P = price of the product,
Q = real value of output,
ω = cost per unit of labour,
L = the quantity of labour,
C = the user cost per unit of capital, and
K = the quantity of capital stock.

Differentiating the expression for profit with respect to labour and capital, respectively, we obtain:

$$\frac{\partial \Pi}{\partial L} = \frac{P \partial Q}{\partial L} - \omega$$

and

$$\frac{\partial \Pi}{\partial K} = \frac{P \partial Q}{\partial K} - C,$$

where it should be noted that P, ω, and C are assumed to be fixed over time – an assumption that, of course, will not hold in the real world.

To maximize profit in the absence of constraints, $\frac{\partial \Pi}{\partial L}$ and $\frac{\partial \Pi}{\partial K}$ must each be set equal to zero. On doing this we obtain:

$$(2.1)\quad \frac{\partial Q}{\partial L} = \frac{\omega}{P} \text{ (or, alternatively, } \frac{P \partial Q}{\partial L} = \omega).$$

and

$$(2.2)\quad \frac{\partial Q}{\partial K} = C/P \text{ (or, alternatively, } \frac{P \partial Q}{\partial K} = C).$$

The alternative forms of equations (2.1) and (2.2) are, of course, the familiar profit-maximizing conditions for use of a factor input under perfect condition – namely, that it should be demanded up to the point where its marginal revenue product equals its cost to the firm.

If we then assume, like Jorgenson, that the firm's technology is given and is of the Cobb-Douglas production form

$$Q = K^{\alpha} L^{\beta},$$

where Q, K, and L are defined as above, α = the elasticity of output with respect to capital, and β = the elasticity of output with respect to labour, we obtain,

$$(2.3)\quad \frac{\partial Q}{\partial L} = \frac{\beta Q}{L}$$

and

$$(2.4)\quad \frac{\partial Q}{\partial K} = \frac{\alpha Q}{K}.$$

Now, substituting (2.3) into (2.1) and (2.4) into (2.2) we see that, at time t, the desired profit-maximizing quantities of labour and capital stock for a firm, given Q, P, C, and ω, are, respectively,

$$(2.5)\quad L_t^* = \beta \left(\frac{PQ}{\omega}\right)_t$$

and

$$(2.6)\quad K_t^* = \alpha \left(\frac{PQ}{C}\right)_t$$

It is equation (2.6) that Jorgenson[1] uses to determine the desired capital stock.

To complete the theory of investment it is now necessary to explain net investment and replacement investment, both of which sum to gross investment. Jorgenson relates net investment to changes in the desired stock of capital. But, recognizing that after a change is made in the desired level of capital stock it takes time to formulate plans, appropriate funds, place orders and contracts, and so on, he assumes that subsequent to the change only a certain proportion of the resulting investment expenditure takes place over each interval of time (this proportion may vary by class of asset but is independent of calendar time for each asset). Thus net investment is explained by a weighted sum or distributed lag of changes in the desired capital stock; that is:

$$(2.7)\quad K_t - K_{t-1} = \sum_{i=0}^{m-1} W_i \left[K_{t-i}^* - K_{t-i-1}^*\right],$$

where Jorgenson determines the weights W_i by using a rational distributed lag function rather than a single polynomial.

Jorgenson explains replacement investment by hypothesizing that it is a constant fraction of the net capital stock lagged one period – an hypothesis that he justifies on the basis of renewal theory.

Thus, on defining gross investment I_t as

$$I_t = (K_t - K_{t-1}) + D_t,$$

where $(K_t - K_{t-1})$ and D_t represent net investment and replacement investment, respectively, in period t, the neoclassical model that he uses to explain gross investment is:

$$(2.8)\quad I_t = \sum_{i=0}^{m-1} W_i \left[K_{t-i}^* - K_{t-i-1}^*\right] + \delta K_{t-1}$$

$$= \sum_{i=0}^{m-1} W_i \alpha \left[\left(\frac{PQ}{C}\right)_{t-i} - \left(\frac{PQ}{C}\right)_{t-i-1}\right] + \delta K_{t-1},$$

where the parameters W_i ($i = 0, 1, 2, \ldots m$), α, and δ are expected to have positive signs.

Specification of the Business Fixed Investment Equations of CANDIDE 2.0

If we were to specify the business fixed investment equations of CANDIDE 2.0, using the neoclassical investment model developed in the preceding section, the specification of each of these equations would be given by equation (2.8), where C would be derived so as to reflect the Canadian tax laws. (This will be done later.)

For a number of reasons we favour the use of the neoclassical investment model for developing the CANDIDE business fixed investment equations. Not only is that model based on the internally consistent neoclassical theory of optimal accumulation, with its emphasis on the importance of relative prices, but it is quite suitable for studying the effects of changes in various tax policy variables (as well as monetary policy) on investment, and generally it has produced better results than any of the available competing models. We recognize, however, that some of its underlying assumptions involve such simplification of the complexity underlying real world investment decisions that its wholesale application to a large number of industries could produce serious misspecification in certain cases.

Indeed, we know that a number of modifications must be made to that model if it is to capture more fully the essential elements of the investment process and thus be capable of yielding industry investment equations with sufficient explanatory power. And there is an abundance of literature[2] on the kinds of modifications that are required. But given the data and the resource and time constraints under which we had to operate, we were only able to make a selective set of these modifications in developing the business fixed investment equations of CANDIDE 2.0. We shall therefore indicate the modifications to Jorgenson's model that were incorporated into the two basic investment models that we used in specifying these investment equations, but we shall also indicate a few other modifications that would have been desirable but were not incorporated into these

models; this could prove to be helpful later in interpreting and evaluating the estimation results and the effects of certain policy changes on investment.

The two basic investment models used in specifying the business fixed investment equations of CANDIDE 2.0 involve a common set of modifications to Jorgenson's neoclassical model with regard to the specification of the production function and replacement investment in that model. They differ with regard to their interpretation of, and the way in which they apply distributed lags to, the determinants of the desired capital stock and with regard to the adjustment mechanism they employ to explain net investment.

The first of the modifications common to both models involves a relaxation of Jorgenson's assumption that the Cobb-Douglas production is the most appropriate production function for describing the firm's technology. While there is evidence to support the use of this production function in a number of industries,[3] there is also other evidence[4] indicating that production functions such as the CES production function are more appropriate for several industries. Further, it can be shown that if we use a more general production function such as a CES (which includes the Cobb-Douglas as a special case) we get an expression for the desired capital stock that, except for differences in the parameters, is similar to that obtained when we use the Cobb-Douglas production function.[5] So regardless of whether we use a Cobb-Douglas or a CES production function, the desired capital stock is, in each case, a function of output and relative prices. Thus, given the large number of industries to which we are applying the investment model and considering our lack of *a priori* knowledge as to which is the most appropriate production function to apply to a particular industry, we simply specify the desired capital stock as a function of output and relative prices.

The second modification to Jorgenson's investment model that is common to these two basic investment models involves the rejection of Jorgenson's explanation of replacement investment – namely, that it is equal to the economic depreciation rate times the net (declining balance) capital stock lagged one period. This explanation seems quite mechanical. It seems that a more reasonable hypothesis is to regard replacement investment as being determined by economic factors similar to those which determine net or expansion investment. So if we persist in making a distinction between these two kinds of investment,[6] it seems that the simplest way to capture the influence of these economic factors is to relate replacement investment to a weighted average of past levels of net capital stock.[7]

Let us turn now to the difference between the two basic investment models used. The first of these models, which makes fewer departures from Jorgenson's neoclassical investment model and which is hereafter referred to as Model I, uses a multiplicative variable $\frac{PQ}{C}$ to explain the desired stock of capital and, like that model, relates net investment to a distributed lag of changes in the desired capital stock. Thus, since it is hypothesized that replacement investment is a weighted average of past levels of net capital stock, the specification of Model I becomes:

$$(2.9)\quad I_t = \sum_{i=0}^{m-1} W_i \left[K^*_{t-i} - K^*_{t-i-1}\right] + \sum_{i=0}^{n-1} \delta_i K_{t-i-1}$$

$$= \sum_{i=0}^{m-1} W_i \left[\left(\frac{PQ}{C}\right)_{t-i} - \left(\frac{PQ}{C}\right)_{t-i-1}\right] + \sum_{i=0}^{n-1} \delta_i K_{t-i-1},$$

where W_i and δ_i are expected to have positive signs or to sum to positive values.

In the second model, which is called Model II, a move is made towards modifying one of the more unrealistic assumptions underlying Jorgenson's neoclassical investment model – namely, that investment takes place in a world of perfect certainty. The use of this assumption in Jorgenson's model results in the desired capital stock being determined by current output and relative prices, which are assumed to remain at their present level forever. Since we live in a world of uncertainty, however, it seems more realistic to relate the desired capital stock to expected rather than current levels of output (and this should be capacity[8] output) and relative prices; and, ideally, we should allow for revisions to the expected values of these variables over time. Also, from a theoretical as well as a policy point of view, it seems desirable to analyse the separate effects of each of these variables on the desired capital stock and hence on investment. Accordingly, then, Model II expresses the desired capital stock as a function of expected output and expected relative prices. But, given the time constraint under which the equations were estimated, an explicit hypothesis was not developed concerning the formation of expectations with respect to output and relative prices. Instead, a proxy measure of each variable is assumed to be a weighted average of its current and past values (this is still unsatisfactory because such a measure will fail to capture changes in expectations, especially those that are sudden) with allowance being made for differences in the lag structure of each of these variables.

The second departure that Model II makes from Jorgenson's neoclassical investment model involves the use of a different adjustment mechanism to explain net investment. Instead of hypothesizing that net investment is made in response to changes in the desired stock of capital, it is hypothesized that net investment is made to fill the gap between desired and actual capital stock. Thus, in this model, adjustments are made from the lagged "actual" rather than the lagged "desired" capital stock. One advantage of this hypothesis is that it might help to reduce some of the errors that could arise if there were asymmetries involved in the accumulation of the capital stock.

By explaining replacement investment just as Model I does, Model II thus explains gross investment as:

$$I_t = \sum_{i=0}^{j-1} \lambda_i (K^*_{t-i} - K_{t-i-1}) + \sum_{i=0}^{n-1} \delta_i K_{t-i-1}$$

$$= \sum_{i=0}^{j-1} \lambda_i K^*_{t-i} + \sum_{i=0}^{n-1} (\delta_i - \lambda_i) K_{t-i-1},$$

which, for reasons discussed above, may be rewritten as

$$(2.10)\quad I_t = \sum_{i=0}^{j-1} \alpha_i Q_{t-i} + \sum_{i=0}^{m-1} \beta_i (P/C)_{t-i} + \sum_{i=0}^{n-1} \gamma_i K_{t-i-1},$$

where the parameters of α_i, β_i, and δ_i are expected to be positive but $(\gamma_i = \delta_i - \lambda_i)$ is expected to be negative since λ_i, the adjustment rate of the capital stock, is typically greater than δ_i, the economic depreciation rate.

Because Model II combines three hypotheses in explaining gross investment – one about the determinants of the desired capital stock, one about the adjustment process involved in net investment, and another about replacement investment – and because the expectation process is not explicit, it is not that easy to disentangle the many influences that are exerted on investment.[9] It should be noted, however, that the coefficients of the output and relative price variables provide estimates of the combined annual adjustment rate and the weights attached to the respective variables, while the coefficients of the lagged capital stock variables provide us with estimates of the combined adjustment and annual depreciation rates. In Model I, on the other hand, the coefficients of the multiplicative output and relative price variables provide us with estimates of the weights associated with these variables; but these weights are a consequence of the lags in the expenditure process only, while the coefficients of the lagged capital stock variables provide us with an estimate (when summed) of the economic depreciation rate.

Despite their differences, however, there is one important similarity between both models that has important implications for the time profile of investment and the effects of policy changes designed to stimulate investment. Both models imply that when there is a need to increase net investment, for example, it will increase over the investment period following the time profile dictated by the lag structure(s) of its determinants until it eventually becomes zero in Model I, when ΔK^*, becomes zero, and, in Model II, when the difference between K^* and the actual capital stock becomes zero. Up to that point, gross investment will be determined by both net and replacement investment; from that point onwards (in the absence of a need to make new net investment), it will be affected only by replacement investment, which would tend to approach some stationary value over time. Because of the combined effects of these influences on gross investment, there would be a general tendency for gross investment to rise, peak, and then fall to a level determined by replacement investment. Of course, once the equations based on these models are embedded in an econometric model of the whole economy, there will be other forces impinging on the determinants of investment and tending to modify the time profile of gross investment; the investment profile, however, will still be determined largely by the way in which the investment equations are specified.

It is also of interest to note that if the investment equations were to make allowance for upward revisions to the desired level of capital stock during the investment period or for reductions in replacement investment when there is excess capacity, they might provide better explanations and projections of investment, but the investment time profile that they would generate would still generally resemble the time profiles generated by equations based on Models I and II. The implication of this is that there will be a general tendency for the effects of policy changes designed to stimulate investment (such as those under study) to become negligible or to wash out over time unless there are developments to ensure a continual increase in the desired capital stock.

An example of the kind of development that would result in a continual increase in the desired capital stock and hence in the postponement of these

washout effects would be the continuation of the cost of capital and investment-good prices at levels that would not offset the reduction in the user cost of capital brought about by the policy changes. Furthermore, even in this situation, the price of output relative to the user cost of capital would have to continue at levels that were favourable to new investment. Similarly, a continual increase in the expected level of output is an important condition for a continual increase in the desired capital stock (and hence investment), because even if relative prices were favourable to investment, maximum profits would occur at larger outputs. But considering the likely effects of increased investment on prices and interest rates and given the apparent limits to productivity increases and profitable investment opportunities in the real world, such developments would not likely continue indefinitely. Thus the postponement of the washout effects associated with increased investment incentives would seem to require the simultaneous employment of supplementary policies designed to ensure that investment will be affected favourably by its other determinants and/or the application of these investment incentives in such a way that, over time, they will produce built-in favourable effects on determinants of investment other than those to which they have traditionally been directed. For example, if ways could be found to ensure that the tax savings from these incentives would be used to acquire *more productive* capital goods (rather than *less productive* capital goods of the old vintage) that would increase productivity significantly and to ensure that such an increase would be translated not only into increased profits but also into more competitive prices and greater market penetration (increased sales abroad), then the effects of these investment incentives would be greater and their washout effects could be postponed.

So far, in our discussion and evaluation of Models I and II, we have indicated the modifications to Jorgenson's model that have been incorporated in these models, as well as the implications of the specifications of these models for the time profile of investment and the effects of investment incentives. In the process of doing this, we have also pointed out a few desirable modifications that have not been incorporated in these two models. These desirable modifications include the use of a capacity variable rather than a simple output variable and the making of some allowances for revisions to the desired capital stock during the investment period, the second of which would be very difficult to implement. But it should be borne in mind that there are other potentially useful modifications that could be made to some of the simplifying assumptions underlying Models I and II. We shall briefly indicate those which we consider to be the most important.

The first of the simplifying assumptions underlying Models I and II that it would be desirable to modify is the assumption that all investment is done by firms that are maximizing profits or present value under conditions of perfect competition. The possibility exists that in some of the industries under study investment may be done mainly by firms that are minimizing costs rather than maximizing profits or present value. And while for some of these industries the relevant relative price variable could be P/C (the price of output divided by the user cost of capital), for others it could be ω/C (the wage rate divided by the user cost of capital).[10] In certain manufacturing industries, for example, the assumption of a given output price that underlies the relative price variable P/C may not be appropriate; for such industries ω/C could well be the more relevant relative price variable. Similarly, for certain regulated industries, it is conceivable that Models I and II would provide a better explanation of investment if they were modified to take explicit account of the regulatory practices[11] that exist with respect to prices or output in these industries.

Second, in both Models I and II the demand for capital goods is determined by using the marginality condition for capital alone, as was done when deriving equation (2.6) above, while the marginality condition for labour (and, for that matter, other factor inputs such as material and energy, which ideally should be included in the production function) is ignored. But since firms determine their demands for factors of production by finding the combination of factor inputs that will maximize profits or minimize cost, subject to the production function, it follows that the production function is common to all decisions pertaining to the acquisition of factor inputs; hence the factor demands must be interrelated.[12] It is therefore desirable for demand functions, if they are to be included in an econometric model of the economy, to be consistent; in other words, they should imply a single set of parameters for the underlying production function(s). In CANDIDE 2.0, the investment equations, based on a generalized production function, were estimated independently of the labour demand equations, which are based on the explicit Cobb-Douglas and CES production functions. If, however, in estimating these and other factor input functions we choose the appropriate production functions and impose consistency constraints on them, it is likely that better estimation results will be obtained. And if this is achieved we should also obtain better productivity estimates. But, like trying to account for changes in expectations or

to develop better measures of the cost of capital, the development of interrelated factor demand equations for a model the size of CANDIDE 2.0 would have required considerably more time and resources.

Finally, as will be seen below, in developing the user-cost-of-capital variables, it is assumed that a simple rate of interest, the industrial bond yield (FRATE.IBOND.10Y), is an appropriate measure of the rate of discount or the cost of capital to be used in calculating all of the user-cost-of-capital variables. But, while it is convenient to use this rate-of-interest variable, it is likely that in a risky and uncertain world such a measure could be inadequate in the case of several industries. Perhaps the cost of capital would be better measured by treating it not only as a function of the rate of interest but also as a function of a measure of the cost of external funds such as the dividend price yield and of a measure of the cost of internal funds such as the flow of retained earnings;[13] or, alternatively, by defining the cost of capital, as suggested by Miller and Modigliani,[14] as the expected future earnings divided by market value. But there are enormous data problems to be overcome in developing either of these measures of the cost of capital at the industry level. Another measure of the cost of capital that is likely to be better than the industrial bond yield, and which would be easier to develop at the industry level than the two alternatives mentioned above, would be the industry-specific real rate of return.[15]

Although we believe it would have been desirable to relax some of the assumptions underlying Models I and II and make some, or all, of the above modifications in developing the business fixed investment equations of CANDIDE 2.0, we were unable to do so for the reasons given. Thus, we cannot tell at this point in time whether (and, if so, by how much) each of these modifications would have improved the specification of the CANDIDE investment equations. But we can judge from the estimation and simulation[16] results how well these equations explain investment in the various industries, bearing in mind that they have incorporated none of the above modifications, and we can also judge whether these equations can be used to produce reasonably good estimates of the impact of the tax incentives on investment.

3 Data Required to Estimate the Business Fixed Investment Equations of CANDIDE 2.0

In order to estimate the investment equations derived from Models I and II of the previous chapter, some difficult problems must be solved, two of the most important being 1/ data problems, particularly those involved with the derivation of the user cost of capital and the capital stock series; and 2/ estimation problems pertaining to the statistical determination of the lags involved in the investment process. We shall deal with the first of these problems in this chapter and the second in Chapter 4.

The sample-period (1946-76) data required to estimate the equations consist of annual estimates, at the level of industry detail used in CANDIDE 2.0, of gross investment, output, output prices, the user cost of capital, and net capital stock. In the case of gross investment, most of the data are obtainable in published form or from special tables developed by Statistics Canada for the Economic Council of Canada. Similarly, output, measured by real domestic product in 1971 constant dollars, and output or industry prices, obtained by dividing current-dollar GDP at factor cost by 1971 constant-dollar GDP at factor cost, are available in published form or from special worksheets prepared by Statistics Canada. But no sample-period estimates existed on the user cost of capital or on the net capital stock series required, so these had to be derived.

Derivation of the User-Cost-of-Capital Series

The user cost, or implicit rental price, of capital is a composite variable that depends on the purchase price of the capital good; the economic depreciation rate; the rate of discount, or interest rate; and elements of the tax structure such as the tax rate, the depreciation rates and rules allowed for tax purposes, and the investment tax credit rate.

The central idea underlying the derivation of the user cost of capital is that a firm should only add one unit to its stock of capital if the discounted value of the increase in the net revenue generated exceeds the price of the capital unit. Following Coen,[1] let us suppose that a competitive firm plans to increase its capital stock by one unit and that a unit of capital costs q dollars and deteriorates at a rate δ each period. Then the total outlay that would be incurred by the firm would be q dollars initially and δ_q dollars in replacement expenditures in each subsequent period. Assuming that output will be increased in each period by the marginal product of capital, $\partial Q/\partial K$, and that each additional unit of output can be sold at a price P, then gross revenue will be increased in each period by $P\frac{\partial Q}{\partial K}$. If we assume for the moment that there is no tax credit, that the corporate tax rate is u, and that the increase in period i in depreciation or capital cost allowance, for tax purposes, is D_i, then the net revenue of the firm in any future period is

$$(3.1)\quad P\frac{\partial Q}{\partial K} - \delta q - u\left[P\frac{\partial Q}{\partial K} - D_i\right],$$

and its discounted net revenue is

$$(3.2)\quad \sum_{i=1}^{\infty}\left\{(1-u)\,P\frac{\partial Q}{\partial K} - \delta q + uD_i\right\}(1+r)^{-i}$$

$$= \left\{(1-u)\,P\frac{\partial Q}{\partial K} - \delta q\right\} r^{-1}$$

$$+ \; u\sum_{i=1}^{\infty} D_i\,(1+r)^{-i},$$

where r is the rate of discount, or rate of interest.

Now let d_i be the amount of tax depreciation on one dollar's worth of investment i period after the investment has been made, and let $Z = \sum_{i=1}^{\infty} d_i\,(1+r)^{-i}$ be the discounted value of the capital cost allowance generated by a dollar's worth of capital expenditures or investment. Then we have:

$$(3.3)\quad \sum_{i=1}^{\infty} D_i\,(1+r)^{-i} = qZ + \delta qZ \sum_{i=1}^{\infty} (1+r)^{-i}$$

$$= qZ + \delta qZr^{-1}$$

and substituting (3.3) into (3.2) we obtain discounted net revenue as

$$(3.4)\quad \left\{(1-u)\,P\frac{\partial Q}{\partial K} - \delta q\right\} r^{-1} + uqZ + u\delta qZr^{-1}$$

The additional unit of capital will therefore be desirable only if

$$(3.5)\quad \left\{(1-u)\,P\frac{\partial Q}{\partial K} - \delta q\right\} r^{-1} + uqZ + u\delta qZr^{-1} > q$$

$$\text{or if } \left\{(1-u)\,P\frac{\partial Q}{\partial K} - \delta q\right\} + ruqZ + u\delta qZ > rq\,.$$

This implies, on reworking either of the inequalities given by (3.5), that the investment will be desirable if

$$(3.6)\quad P\frac{\partial Q}{\partial K} > q\,(r+\delta)\,(1-uZ)/(1-u) = C\,,$$

where C, the user cost of capital, is equal to the expression on the right-hand side of the inequality (3.6). Note that in (3.6) the user cost depends on all the variables listed at the beginning of this section except the investment tax credit rate, which was assumed to be zero when developing (3.6), and that the inequality makes it clear that the firm should continue to expand its capital stock until its marginal revenue $P\frac{\partial Q}{\partial K}$ equals C, the user cost of capital, or until the marginal revenue product of capital $\frac{\partial Q}{\partial K}$ equals $\frac{C}{P}$, the real price of capital.

If there were no direct corporate taxes, the user cost of capital would be simply $q\,(r+\delta)$. And if there were direct corporate taxes but no capital cost allowances, the value for the user cost would be increased by a factor $\left\{1/(1-u)\right\}$. Note that the capital cost allowances reduce the user cost by a factor $(1-uZ)$, where uZ is the discounted value of the tax savings generated by the capital cost allowances.

Let us now extend the analysis to include the investment tax credit. If a tax credit of rate k is allowed on capital expenditures and if the depreciation base must be reduced by a factor b when the tax credit is taken, we have

$$(3.7)\quad C = q\,(r+\delta)\,\left\{1-k-u\,(1-b)\,Z\right\}/(1-u).$$

Where, as in the Canadian tax system, the depreciation base is reduced by the full amount of the tax credit, $b = k$. Therefore, the formula for the user cost of capital[2] becomes:

$$(3.8)\quad C = q\,(r+\delta)\,\left\{(1-k)\,(1-uZ)\right\}/(1-u)\,.$$

Note that in this case the tax credit does not reduce the user cost of capital as much as it would in the case where the depreciation base is not reduced by the credit – that is, in the case where $b = 0$.

From Chart 3-1 below it will be seen that the formula used in calculating the user cost of capital for the 37 industries, and the 2 types of investment (nonresidential construction, and machinery and equipment) for which they have to be calculated in CANDIDE 2.0, is identical to that given by equation (3.8) above, except for the change in symbols. The correspondence between the symbols used in equation (3.8) and the mnemonics that appear in the user-cost-of-capital formula that appears in Chart 3-1 is as follows:

C = *IUC*,
q = *PFI*,
δ = *IED*,
r = *FRATE*,
k = *ITC*,
u = *IET*, and
Z = *IZ*,

where the variables on the right-hand side are as defined in Chart 3-1.

The ampersand (&) appearing after all variables, except the discount rate in Chart 3-1, refers to the industry and investment type for which data on each variable are developed. Details as to the meaning of the ampersand in each case are provided in Appendix A.

In developing historical data on the variables that are used in calculating the user-cost-of-capital variables, an attempt was made to develop as many industry-specific and investment-specific data as possible and to ensure that the data on the tax policy variables adequately reflect the effects of the tax regulations on these variables. In the case of the discount rate, however, we were unable to obtain interest rates for specific industries or sets of industries so, as pointed out earlier, one rate of interest, the McLeod Young and Weir industrial long-term

Chart 3-1

Variables and Formulas Used in Calculating User Cost of Capital and Discounted Capital Cost Allowances

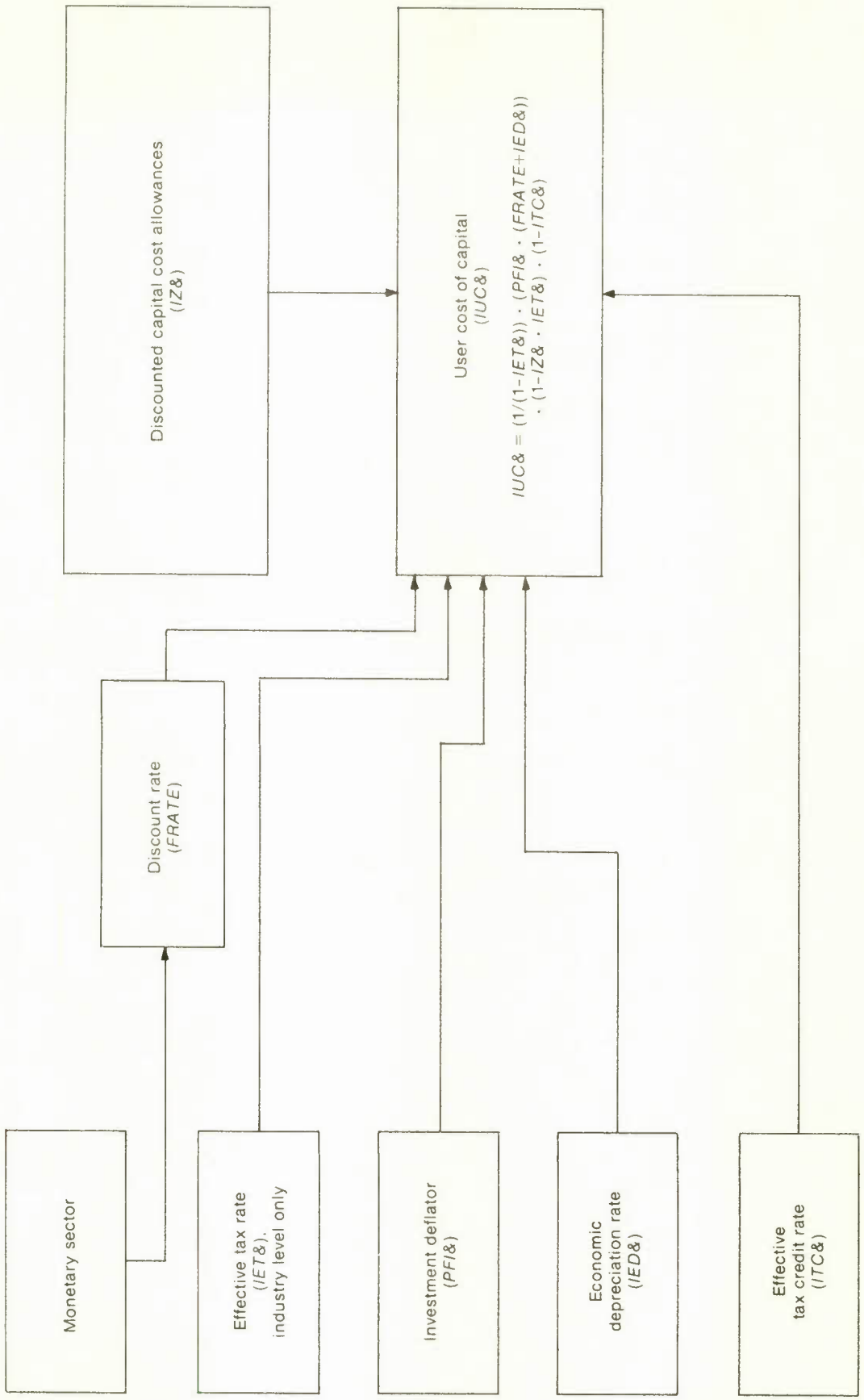
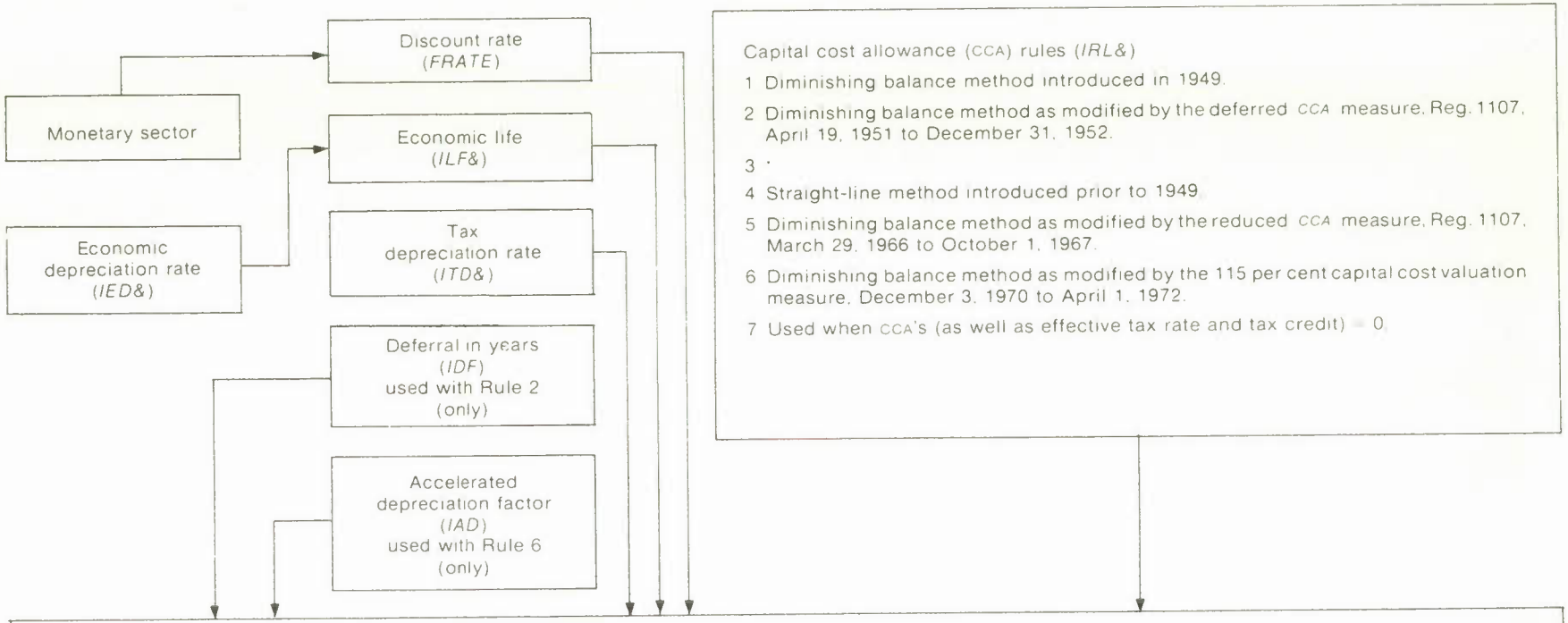


Chart 3-1 (concl.)

Discounted Capital Cost Allowances



Discounted capital cost allowances under CCA rules (*IZ&*)

$$1 \quad IZ\& = \sum_{T=1}^{ILF\&} ITD\&(1-ITD\&)^{T-1}/(1+FRATE)^{T}$$

$$2 \quad IZ\& = \sum_{T=IDF}^{ILF\&} ITD\&(1-ITD\&)^{T-IDF}/(1+FRATE)^{T}$$

$$4 \quad IZ\& = \sum_{T=1}^{1/ITD\&} ITD\&/(1+FRATE)^{T}$$

$$5 \quad IZ\& = \sum_{T=1}^{3} .5ITD\&(1-ITD\&)^{T-1}/(1+FRATE)^{T} + \sum_{T=4}^{ILF\&} \left\{ ITD\& \left[1-.5ITD\& \sum_{T=1}^{3} (1-ITD\&)^{T-1} \right] * (1-ITD\&)^{T-4} \right\} /(1+FRATE)^{T}$$

$$6 \quad IZ\& = \left\{ \sum_{T=1}^{ILF\&} ITD\&(1-ITD\&)^{T-1}/(1+FRATE)^{T} \right\} IAD$$

$$7 \quad IZ\& = 0$$

*According to Revenue Canada officials, Rule 3, which is defined in the text, has seldom been used because of its restrictions, thus it was not used in our calculations.

bond rate, was used in all cases. In other words, in all cases, *FRATE* = FRATE.IBOND.10Y, the industrial long-term bond rate.

As a proxy for the acquisition cost of capital goods, we used the investment deflators, defined as current dollar investment divided by constant dollar investment. These deflators were thus derived from the same source as the investment series. The economic depreciation rates, obtained by dividing average capital cost allowances by mid-year gross capital stock, both over the period 1946-76 and in 1971 constant dollars, were also obtained from this same source.

"Effective" corporate income tax rates, defined as the nominal corporate income tax rates adjusted to reflect losses in income, were used since these income tax rates are thought to produce a better measure of the user cost of capital than the unadjusted nominal corporate tax rates. These rates are the same for both types of investment and, except for the last year of the sample period for which they had to be projected, were obtained by dividing total taxes paid by net taxable income or the tax base. For the years 1946-64 these two series were obtained from the Department of National Revenue, *Taxation Statistics*, and for the years 1965 onwards from Statistics Canada, *Corporation Taxation Statistics*, Catalogue 61-208. Details on the definitions of total taxes and the formulas used in projecting the effective tax rates are given in the documentation of the user cost databank, ECC98.CARL.USERCOST.ANN., associated with CANDIDE 2.0.

The investment tax credit was introduced in June 1975. For that year it was assumed to be zero, since data provided by the Business Finance Division of Statistics Canada indicated that its use in that year was negligible. For 1976 the estimate of the investment tax credit used for the relevant industries was that provided by the Department of Finance. (That estimate was later replaced by the statutory 5 per cent rate, and for subsequent years the estimates that are now used are weighted average statutory tax credit rates obtained from published or worksheet data provided by the Business Finance Division of Statistics Canada.) Details on the construction of these rates are also provided in the user cost databank referred to earlier.

The last variable in the user-cost-of-capital formula for which data had to be developed was the discounted capital cost allowance variable *IZ*. This variable, it will be recalled, measures the discounted value of the capital allowance on a dollar's worth of investment.

As seen from the last half of Chart 3-1, in order to develop data on *IZ* we need, as a minimum, information on the depreciation rule(s) that should be applied over the sample period to the capital assets involved, the tax depreciation rates allowed, and the discount rate to be used in discounting the capital cost allowances.

Over the sample period, six different depreciation rules were allowed, but these could be narrowed down to two basic rules – namely, the straight-line rule, and variations of the diminishing-balance rule. The six rules are as follows:

Rule 1 – the diminishing-balance rule introduced in 1949 – is the rule most frequently used by firms, and its use is mandatory under the Income Tax Act unless otherwise specified.

Rule 2 – the rule covered by Regulation 1107, which was introduced in 1951 when Canada was experiencing very high rates of inflation – allowed capital cost allowances to be deferred for a period of five years.

Rule 3 – an accelerated capital cost allowance rule covered by Regulations 1108 and 1109 – was not shown in Chart 3-1. It allowed qualified firms a 50 per cent increase in the rate of capital cost allowance in the year in which they acquired certain new assets for re-equipment and modernization between June 21, 1961, and March 31, 1964. Recall that this rule was not used in our calculation of the *IZ* variables because Revenue Canada officials claimed that because of its restrictions there were very few instances where it was used.

Rule 4 – the straight-line depreciation rule – was the rule used in calculating depreciation allowances on all assets up until the Income Tax Act was changed in 1949. It was also the rule used to depreciate class 19, 20, and 21 assets – special classes of assets introduced in 1963. Accelerated depreciation of these assets was permitted if the firms owning them satisfied the 25 per cent Canadian ownership requirement or were producing goods in designated surplus manpower areas. In addition, the federal budget of May 1972 prescribed Rule 4 for certain assets within the manufacturing industry.

Rule 5 – the rule covered by Regulation 1107, which was introduced in 1966 – allowed the depreciation rate to be reduced by half for the first three years of an asset's life, after which it was returned to its normal value.

Rule 6 – an accelerated depreciation measure introduced in the federal budget of December 1970 – permitted the value of certain assets to be increased to 115 per cent of their original cost.

Rule 7 – the rule used for the noncommercial sector – applies when *IZ* (as well as the effective tax rate and the tax credit rate) is zero.

If we assume that only one rule and one depreciation rate is applied in any one year in calculating the discounted capital cost allowances for each of the two types of investment into which investment is divided in CANDIDE 2.0, we can now readily derive the depreciation formulas displayed at the bottom of Chart 3-1. For convenience, we shall omit the ampersands here.

Under Rule 1 – the diminishing-balance method – with the tax depreciation rate being *ITD*, the total amount of capital cost allowances that can be earned on a dollar's worth of investment over the life of the investment good is:

$$\sum_{T=1}^{ILF} ITD\,(1-ITD)^{T-1},$$

since we apply the depreciation rate to the undepreciated value of the investment good each year over the life of the good. When these allowances are discounted by the discount rate *FRATE*, we obtain:

$$(3.9)\quad \sum_{T=1}^{ILF} ITD\,(1-ITD)^{T-1}/(1+FRATE)^{T}.$$

Since, under Rule 2, the capital cost allowances normally claimed under the diminishing-balance rule are deferred for five years (*IDF* = 5), the discounted capital cost allowances will be:

$$(3.10)\quad \sum_{T=IDF}^{ILF} ITD\,(1-ITD)^{T-IDF}/(1+FRATE)^{T}.$$

In the case of Rule 4 – the straight-line depreciation rule – the depreciation rate is applied to a dollar's worth of investment each year over the life of the investment good; therefore, the total capital cost allowance is:

$$\sum_{T=1}^{ILF} ITD = \sum_{T=1}^{1/ITD} ITD,$$

since, in this case, *ILF* = 1/*ITD*. The discounted value of the capital cost allowance is thus:

$$(3.11)\quad \sum_{T=1}^{1/ITD} ITD/(1+FRATE)^{T}.$$

Under Rule 5, the depreciation rate is reduced by half during the first three years of an asset's life; thereafter the remaining undepreciated balance of the asset is depreciated at the normal rate. Therefore, with this variation in the diminishing-balance rule, the discounted capital cost allowances for the first three years are:

$$\sum_{T=1}^{3} .5ITD\,(1-ITD)^{T-1}/(1+FRATE)^{T}$$

and for subsequent years:

$$\sum_{T=4}^{ILF} \left\{ ITD\left[1-.5\,ITD\sum_{T=1}^{3}(1-ITD)^{T-1}\right](1-ITD)^{T-4}\right\} / (1+FRATE)^{T}.$$

Thus the total discounted capital cost allowances under Rule 5 are simply

$$(3.12)\quad \sum_{T=1}^{3} .5\,ITD\,(1-ITD)^{T-1}/(1+FRATE)^{T} + \sum_{T=4}^{ILF} \left\{ ITD\left[1-.5\,ITD\sum_{T=1}^{3}(1-ITD)^{T-1}\right]*(1-ITD)^{T-4}\right\}/(1+FRATE)^{T}.$$

Finally, the formula for Rule 6 is obtained by simply multiplying the formula for Rule 1 by an accelerated depreciation factor (*IAD* = 1.15). Thus the formula for Rule 6 is:

$$(3.13)\quad \left\{ \sum_{T=1}^{ILF} ITD\,(1-ITD)^{T-1}/(1+FRATE)^{T}\right\} IAD.$$

It should be noted that before the formulas for Rules 1 to 6 are applied in calculating the *IZ* variables, each is converted to a more convenient form for calculation in which the Σ sign is eliminated. This is done in each case by summing the geometric progression involved. For example, in the case of Rule 1, if we assume that the life of the capital asset is *T* years and if, for convenience, we substitute ϕ for *ITD* and *r* for *FRATE* we have:

$$IZ = \sum_{T=1}^{T} \phi\,(1-\phi)^{T-1}/(1+r)^{T}$$

$$= \frac{\phi}{1+r}\sum_{T=1}^{T}\left(\frac{1-\phi}{1+r}\right)^{T-1}$$

$$= \frac{\phi}{1+r}\left[\frac{1-\left(\frac{1-\phi}{1+r}\right)^{T}}{1-\frac{1-\phi}{1+r}}\right], \text{ on summing the geometric progression; and}$$

$$= \frac{\phi}{r+\phi}\left[1-\left(\frac{1-\phi}{1+r}\right)^{T}\right], \text{ when the denominator is simplified.}$$

This last equation is in the form in which Rule 1 is coded in the User Cost Subroutine of CANDIDE 2.0. The equivalent equations for the other *IZ* variables are also contained in that subroutine.

It should also be noted that under the Income Tax Act there are several classes of assets, but the business fixed investment data are developed by Statistics Canada for only four types of assets: building construction, engineering construction, machinery and equipment, and capital items charged to operating expenses (CICOE). In CANDIDE 2.0 we aggregate the first two types of investment into nonresidential construction and the last two into machinery and equipment (CANDIDE definition). Therefore, in developing the formula for the *IZ* variables we had to establish the correspondence between the asset classes for tax purposes and the two types of investment for which data or the *IZ* variables are developed.

In some cases this was straightforward. For example, in the manufacturing sector, investment in building construction generally entails Class 3 assets; in machinery and equipment (Statistics Canada definition), Class 8 assets; and in CICOE, generally Class 12 assets that can be fully written off in one year. But in other cases it was not as straightforward. For example, the engineering construction component of nonresidential construction investment involves several asset classes for tax purposes. As a general rule, whenever there is a close correspondence between asset classes for tax purposes and the investment asset types used in CANDIDE 2.0, we use the depreciation rates allowed for tax purposes for this investment type. But whenever there is no close correspondence we use a weighted average tax depreciation rate based on the tax depreciation rates that apply to the asset classes of which the investment type in question is comprised. The weights used were determined from investment data and/or other information provided by Revenue Canada or Statistics Canada.

Finally, in using the CCA rules we have assumed that only one depreciation rule/rate is applied in a particular year. We know that changes in these CCA rules and/or their associated CCA rates may be, and are often, made during a calendar year and that the firms in a given industry could conceivably apply more than one rule/rate during a particular year. In any given year, however, there is one rule that is most likely to be applied by the majority of firms in an industry when calculating the capital cost allowances for a given type of investment. *So, for simplicity and economy, in calculating the discounted capital cost allowances for each type of investment in each of the commercial industries, we assume that firms use the most likely rule.* A test of this assumption against the more realistic but costlier assumption that a combination of rules/rates were applied in a specific year showed that the former and simpler assumption did not produce any serious distortions in the discounted capital cost allowance series for the few industries and types of investment that were tested. It is quite possible, however, that in the aggregate the use of the simpler most likely rule could lead to an underestimate of the discounted capital cost allowances, especially if over any given period the majority of the firms that qualify for the more generous depreciation rules and rates do take advantage of them. If this is the case, the response of investment, and so on, to the tax depreciation increase could well be understated.

Derivation of the Net Capital Stock Series

As shown above, the investment equations of CANDIDE 2.0 are partly based on the neoclassical model of investment. One of the assumptions underlying that model is that depreciation is proportional to the existing capital stock. And since we have decided to retain this assumption, the net capital stock used in our investment equations should be generated by depreciating the existing gross capital stock exponentially. Because the net capital stock series published by Statistics Canada are not based on the assumption of exponential depreciation, we had to generate our own net capital stock series.

To do this, we obtained from the Construction Division of Statistics Canada, or developed, benchmark estimates of the mid-year gross capital stock, in 1971 constant dollars, by industry and by type, based on the exponential survival distribution. Then, for each industry and type of capital, we fed this benchmark capital stock estimate (generally the one for 1947 was used), as well as an estimate of the straight-line economic depreciation rate – obtained by taking the reciprocal of the useful life of the capital asset, as published by Statistics Canada – and an estimate of gross investment in 1971 constant

dollars, into the appropriate capital stock identity, each of which takes the form:

$$(3.14)\quad IK_{ij} = IK_{ij}(-1) * (1-2*IED_{ij}) + I_{ij},$$

where

IK = net capital stock,
$IK(-1) = IK_{-1}$ = the benchmark capital stock estimate,
IED = the straight-line economic depreciation rate,
I = gross investment,
i = the i^{th} industry, and
j = the j^{th} type of capital.

Then we solved (3.14) in successive years to obtain annual estimates of the net capital stock.

Specifically, let i refer to the forestry industry and j to machinery and equipment. Then, in the case of this industry and type of investment, by substituting the 1947 estimate of the gross capital stock (based on the exponential survival distribution) for $IK_{ij(-1)}$, the 1948 straight-line economic depreciation rate for IED_{ij} (which is a constant and therefore remains the same in successive years), and the 1948 value of gross investment for I_{ij} in equation (3.14), CANDIDE 2.0 would generate the 1948 value of IK for this industry and type of investment. Similarly, it would then go on to use this 1948 value of IK and the 1949 value of IED_{ij} and I_{ij} to generate the 1949 value for IK, and so on.

Equation (3.14) simply states that the net capital stock in any year equals what is left of the gross stock of the previous year after it has been depreciated, plus gross investment of the current year, which would not be depreciated until the subsequent year. The first term on the right-hand side of (3.14), namely:

$$(3.15)\quad IK_{ij}(-1) * (1-2*IED_{ij})$$

may be rewritten as

$$(3.16)\quad IK_{ij}(-1)\,(1-2IED_{ij}),$$

since the asterisk (*) is the FORTRAN sign for multiplication.

Now, if we rewrite (3.16) as

$$(3.17)\quad IK_{ij}(-1) - 2IED_{ij}IK_{ij}(-1),$$

it becomes clear that all we are doing is depreciating the benchmark gross capital stock estimate by multiplying it by $2IED$ or $2/L$ (where L is the life of the asset) and subtracting the product from the original benchmark estimate. We multiply the benchmark estimate by $2IED$ because it can be shown that the exponential depreciation rate is approximately equal to twice the straight-line depreciation rate. (For a simple proof of this relationship, see Statistics Canada, *Fixed Capital Flows and Stock Manufacturing, Canada, 1926-1960*, Catalogue 13-522, Occasional, p. 88.)

For details on the assumptions made in developing the benchmark capital stock estimates for certain industries, the reader should consult the documentation of the capital stock data bank, ECC98.CARL.STK1.ANN, for CANDIDE 2.0.

4 Estimation Procedure and Results

Partly for convenience and partly because experiments with a zero constant term for selected industries yielded inferior results, the general procedure adopted in estimating Models I and II was to add a constant term to each of these models – that is, to equations (2.9) and (2.10) of Chapter 2 – and estimate the resulting equations for each industry and investment type by the method of Ordinary Least Squares (OLS). In applying this method of estimation, the most appropriate distributed-lag structure for each independent variable was determined empirically from the data by using a variation of Shirley Almon's polynomial estimation technique[1] (this technique has been used increasingly in the estimation of distributed lags because it reduces the number of explanatory variables and is thus computionally convenient) in combination with a search technique[2] that searches for the optimal length of the lag for each independent variable from among all possible combinations of the Almon lag structures specified for these independent variables.

Thus before each estimating equation was finally selected we ran two initial sets of regressions, with one set based on Model I and the other on Model II. The individual regressions in each set were different with respect to the degree of the polynomial used in specifying the lag distributions for the independent variables (both second- and third-degree polynomials were tried, since we feel that these would be appropriate for capturing the humped shape that would be typical of the lag distribution involved in the investment process) and with respect to the length of the lags chosen for these distributions (usually the maximum length of the lags tried in these initial sets was five years). These initial regressions were similar, however, with respect to the type of polynomial used; generally the type used was that which is constrained to be zero at each end, since we feel that this is the most appropriate type for use in estimating the weights for the lag distributions involved.

From these initial sets of regressions a subset of the better regressions was selected (on the basis of the usual criteria: acceptable Durbin-Watson statistics, coefficients with correct signs and magnitudes that seem reasonable on the basis of economic theory or other empirical evidence, and with significant *t*-values, high $\bar{R}^2$, or small *S.E.E.*) for further improvement. Attempts were made to achieve such improvements by trying a different lag distribution (in a few cases a linear distribution was tried), by lengthening the lags, by introducing dummy variables to capture the effects of special events or special institutional changes, by separating the changes in relative prices from changes in output in Model I, or by a combination of the above changes. Then, after carefully examining these results, the best estimating equation was selected for the industry and investment type in question.

One of the things that we were particularly careful about in selecting the best estimating equations was to check whether the coefficients of the lagged capital stock in these equations imply, as they should, a reasonable estimate of the economic depreciation rate. Taking into account the constant term, this means that in the Model I estimating equations, the sum of the coefficients of the lagged capital stock should be close in value to the actual economic depreciation rate – that is, the depreciation rate used in developing the capital stock estimates.[3] And in the Model II estimating equations, assuming a reasonable adjustment rate for the capital stock (that is, assuming λ_i values consistent with what we know about the length of the lags involved in expansion investment, since separate estimates of these values were not obtained), the sum of these coefficients should imply an economic depreciation rate that is in line with the actual economic depreciation rate. It is important to try to ensure that the estimate, or implied estimate, of the depreciation rate is not far from the actual economic depreciation rate. If it is, it casts doubt on the model's ability to explain investment for the industry/investment type in question. Further, an equation with an unreasonable estimate of the economic depreciation rate will most likely produce large post-sample simulation errors.

The estimation results obtained are displayed in Tables 4-1 and 4-2 below. It should be noted that in these tables we use X instead of Q to represent the output variable. The estimated constant terms and the estimated coefficients of the explanatory variables are shown in all but the last three columns, with the t-value in parentheses under each estimate. In the case of each distributed-lag variable, only the sum of its coefficients is shown (the individual coefficient for each variable in the distributed lag and its associated t-value is displayed in *CANDIDE 2.0: Model Description*, vol. I, sections 4 and 5), and the length of the lag distribution is shown in parentheses to the right of the coefficients' sum. Where two values appear in parentheses the first refers to the first year of the lag distribution and the second to the last year. Thus a value of (0,4) signifies that the distribution goes from year $t = 0$ (the current year) to year $t = -4$ (four years earlier). And where, for example, only one value appears in parentheses, 0 indicates the use of the current year value of the variable only; and 1, the value of the variable, lagged one year only.

The results are encouraging in several respects. First, the explanatory power of the selected estimating equations is generally high. For 35 of the 74 estimating equations (25 of which are based on Model I and 49, on Model II), $\bar{R}^2$ – a measure of the variation in investment that is explained – is greater than 90 per cent; for 28 of them it lies between 80 and 90 per cent; and for only 11 of them is it less than 80 per cent. Furthermore, 9 of these 11 equations are for manufacturing industries, for most of which the type of investment being explained is relatively small. Second, autocorrelation is not a serious problem. Third, the signs on the coefficients generally accord with our *a priori* expectations, and the size of the capital stock coefficients seem reasonable in the majority of cases. Fourth, an important role is played by output in all of the estimating equations (except the one for machinery and equipment in the coal industry); by the relative price variable in all but four of the equations (those for construction in rubber and plastic products and for machinery and equipment in nonmetal mining, motor vehicle parts and accessories, and miscellaneous manufacturing); and by the lagged capital stock in all but one equation (the one for construction in the leather industry, which is a miniscule industry). Fifth, the estimated lag distributions (note that, with few exceptions, the third-degree polynomial constrained at both ends generally gave the best results) are mostly long (for example, in construction, for iron and steel they are about six years) and vary from industry to industry; and, as expected, they are generally shorter in the case of the estimating equations for machinery and equipment than in the case of those for the construction type of investment. Lastly, these results are consistently better than the corresponding results obtained in earlier versions of the CANDIDE model.

On the other hand, it is clear that there are certain areas in which these results are in need of improvement. First, judging from the estimation results, there is a need to increase the explanatory power of some of the estimating equations such as the 11 equations with the lowest $\bar{R}^2$ (9 of them for manufacturing industries) noted above. The use of capacity variables instead of output variables might help to improve the explanatory power of these as well as some of the other equations.

Furthermore, even though the sums of the coefficients of the output, relative price (P/C), and capital stock variables always have the expected signs in all the estimating equations, which is very encouraging, the individual coefficients of these variables change signs in a number of equations.[4] And while the change in the signs of the coefficients of the output and capital stock variables can be rationalized, the change in those of the relative price variables is not easily justified on the basis of economic theory.

Finally, there are some industries – in the mining group (for example, metal mining: machinery and equipment), the manufacturing group (notably paper), and the regulated industries group (notably utilities) – where, in spite of our efforts to obtain reasonable values, the size of the sum of the coefficients of the capital stock variables is implausibly high. Because of this, we have had to make large constant adjustments to these equations in order to achieve the actual or reasonable investment estimates in simulations outside the sample period. One possible reason for this is the fact that our investment equations do not take sufficient account of supply conditions in the capital goods industry. If, for example, there are shortages of either capital goods, labour, material, or energy that lead to an increase in the cost of capital services, then the rate at which the capital stock is replaced is likely to be affected. So, if we were to allow for these supply effects by estimating the investment equations within the context of a set of interrelated factor demand equations, we would likely obtain better estimates of the rate of

Table 4-1

Estimation Results for Industry Investment Equations – Nonresidential Construction

	Constant	Investment dummy variables (1)	(2)	(3)	(4)	$\sum\Delta \frac{PX}{C}$		$\sum \frac{P}{C}$		$\sum\Delta \frac{P}{C}$		$\sum X$		$\sum\Delta X$		$\sum K$		Estimation period	$\bar{R}^2$	D.W.
Agriculture, fishing, and trapping	233.995 (8.71)	-25.506 (1.77)	-39.977 (2.84)	–	–	0.016 (5.47)	(0,6)	–		–		–		–		0.015 (2.14)	(1,3)	1956-74	0.808	1.823
Forestry	19.591 (3.02)	13.179 (2.65)	–	–	–	0.052 (8.46)	(0,2)	–		–		–		–		0.043 (4.43)	(1,5)	1952-74	0.846	1.715
Mining																				
Coal mining	-6.068 (2.35)	-8.293 (2.63)	27.934 (9.64)	93.796 (24.66)	50.795 (8.27)	–		–		5.689 (4.75)	(1)	–		0.619 (3.85)	(0,2)	0.131 (4.74)	(1,3)	1957-74	0.989	2.963
Crude petroleum, natural gas, etc.	312.884 (14.52)	129.901 (8.93)	–	–	–	0.269 (13.47)	(0,5)	–		–		–		–		0.161 (28.84)	(1,5)	1956-74	0.994	2.563
Metal mining	-1,387.650 (5.37)	318.517 (9.68)	47.872 (1.87)	233.774 (8.99)	–	–		77.763 (3.97)	(2,4)	–		1.336 (7.18)	(1,4)	–		-0.188 (4.79)	(1,3)	1956-75	0.958	2.888
Nonmetal mining (excluding coal)	9.078 (1.27)	60.258 (3.74)	–	–	–	0.065 (2.04)	(0,3)	–		–		–		–		0.055 (3.41)	(1,2)	1953-74	0.836	2.000
Manufacturing: Durables																				
Wood	-120.869 (4.43)	15.060 (2.60)	–	–	–	0.017 (1.79)	(0,4)	–		–		–		–		0.628 (5.09)	(1,5)	1959-74	0.895	2.065
Furniture and fixtures	-12.666 (1.43)	–	–	–	–	–		2.764 (2.71)	(3,8)	–		0.131 (7.14)	(1)	–		-0.546 (5.13)	(1,3)	1957-75	0.809	1.939
Iron and steel	125.505 (2.56)	–	–	–	–	–		6.809 (1.58)	(4,9)	–		0.281 (6.83)	(0,1)	–		-0.745 (7.37)	(1,4)	1958-74	0.831	3.106
Nonferrous metals	-269.402 (5.52)	–	–	–	–	–	–	19.804 (5.93)	(0,2)	–		0.535 (10.16)	(0,4)	–		-0.238 (6.99)	(1,7)	1954-74	0.869	2.802
Metal fabricating	-68.730 (1.05)	9.953 (2.30)	–	–	–	–		16.559 (3.38)	(1,3)	–		0.193 (5.11)	(0,4)	–		-0.604 (3.57)	(1,2)	1953-74	0.849	2.157
Machinery (excluding electrical)	-14.102 (0.66)	10.929 (3.40)	–	–	–	–		3.013 (1.79)	(1,2)	–		0.070 (3.45)	(0,4)	–		-0.194 (2.09)	(1,3)	1953-74	0.873	2.251
Nonautomotive transport equipment	-60.060 (2.84)	–	–	–	–	–		6.260 (4.54)	(2,5)	–		0.115 (7.18)	(1,6)	–		-0.124 (2.10)	(1,5)	1955-75	0.765	2.786
Motor vehicles (excluding parts and accessories)	-36.852 (2.11)	14.501 (3.20)	15.381 (3.41)	–	–	–		6.894 (5.26)	(1,4)	–		0.123 (7.00)	(0,2)	–		-0.294 (4.18)	(1,3)	1955-74	0.926	2.665
Motor vehicle parts and accessories	-0.766 (0.34)	35.881 (8.62)	–	–	–	0.167 (5.06)	(1,8)	–		–		–		–		0.041 (2.04)	(1,5)	1959-74	0.948	1.774
Electrical products	35.622 (0.94)	–	–	–	–	–		3.246 (1.30)	(1,5)	–		0.166 (5.02)	(0,4)	–		-0.771 (4.94)	(1,4)	1958-74	0.825	2.655
Nonmetallic mineral products	-122.192 (1.13)	12.152 (1.43)	20.124 (2.46)	–	–	–		21.407 (2.10)	(1,2)	–		0.484 (3.70)	(3,7)	–		-0.616 (2.97)	(1,6)	1957-75	0.709	2.316

Table 4-1 (concl.)

	Constant	Investment dummy variables (1)	(2)	(3)	(4)	$\Delta\Delta \frac{PX}{C}$		$\Delta \frac{P}{C}$		$\Delta\Delta \frac{P}{C}$		ΔX		$\Delta\Delta X$		ΔK		Estimation period	$\bar{R}^2$	D.W.
Manufacturing: Nondurables																				
Food and beverages	-126.769 (2.17)	17.194 (2.67)	-	-	-	-		12.063 (2.84)	(2,5)	-		0.242 (3.61)	(0,3)	-		-0.378 (2.57)	(1,5)	1954-74	0.905	2.048
Tobacco products	-38.982 (4.16)	-	-	-	-	-		3.056 (4.85)	(3,7)	-		0.277 (4.92)	(0,2)	-		-0.433 (3.11)	(1,2)	1956-74	0.731	2.136
Rubber and plastic	8.840 (2.11)	7.526 (2.35)	10.472 (3.15)	-	-	-		-		-		0.278 (4.60)	(0,6)	-		-0.383 (3.12)	(1,3)	1955-74	0.890	1.972
Leather	-10.781 (1.62)	-0.779 (1.13)	-1.669 (2.56)	3.356 (5.82)	-	-		0.460 (1.50)	(3,9)	-		0.056 (2.17)	(1,2)	-		-		1959-75	0.814	3.103
Textiles	-35.703 (1.10)	9.591 (1.83)	-	-	-	-		3.931 (2.21)	(1,5)	-		0.136 (4.34)	(0,2)	-		-0.201 (2.39)	(1,2)	1954-74	0.846	2.244
Knitting and clothing	-55.407 (3.45)	-	-	-	-	-		3.688 (3.42)	(2,6)	-		0.059 (4.63)	(0,2)	-		-0.088 (1.88)	(1,4)	1955-74	0.785	1.894
Paper and allied industries	-712.448 (5.24)	48.243 (3.50)	45.984 (3.07)	-	-	-		32.860 (5.25)	(4,7)	-		1.219 (5.51)	(0,4)	-		-0.839 (4.81)	(1,5)	1956-74	0.912	1.785
Printing, publishing, and allied industries	-122.064 (5.42)	10.464 (3.69)	-	-	-	-		12.288 (6.31)	(0,4)	-		0.169 (4.36)	(1,5)	-		-0.262 (2.60)	(1,5)	1954-74	0.742	1.397
Petroleum and coal products	-116.662 (2.07)	49.575 (2.15)	-	-	-	-		4.543 (2.39)	(3,5)	-		2.682 (5.48)	(1,4)	-		-0.474 (5.71)	(1,4)	1954-75	0.904	2.111
Chemicals and chemical products	-308.787 (2.22)	24.318 (1.33)	32.862 (1.66)	-	-	-		20.267 (2.64)	(5,8)	-		0.472 (3.48)	(0,2)	-		-0.212 (1.48)	(1,3)	1957-74	0.845	1.446
Miscellaneous manufacturing	-12.903 (1.79)	6.047 (4.16)	5.894 (3.82)	-	-	-		1.633 (2.20)	(1,3)	-		0.089 (6.74)	(0,2)	-		-0.328 (5.22)	(1,5)	1952-74	0.898	2.660
Construction	-12.423 (2.71)	6.679 (3.00)	28.671 (12.67)	-	-	0.001 (1.83)	(0)	-		-		-		-		0.106 (5.41)	(1,2)	1956-74	0.965	2.412
Transportation	-65.081 (0.59)	311.807 (4.97)	189.583 (2.64)	-178.173 (2.46)	-206.025 (2.59)	0.040 (3.31)	(2,3)	-		-		-		-		0.036 (4.49)	(1,2)	1953-76	0.838	2.171
Communications	-282.086 (2.51)	30.943 (2.88)	-	-	-	-		30.021 (3.10)	(2,7)	-		0.404 (1.89)	(1,5)	-		-0.225 (1.98)	(1)	1956-74	0.981	2.179
Finance, insurance, and real estate	-1,688.030 (6.41)	47.330 (1.09)	-	-	-	-		122.178 (5.09)	(0,1)	-		0.377 (6.75)	(0,1)	-		-0.215 (5.26)	(1,2)	1957-74	0.981	2.242
Utilities	-23.604 (0.31)	148.177 (1.72)	-	-	-	0.175 (4.17)	(3,5)	-		-		-		-		0.069 (8.69)	(1,2)	1958-76	0.952	2.465
Wholesale and retail trade	-66.131 (0.43)	45.979 (4.11)	-	-	-	-		59.259 (6.54)	(3,9)	-		0.082 (7.38)	(1,2)	-		-0.243 (5.50)	(1,3)	1958-75	0.934	2.838
Commercial services	-475.221 (6.55)	95.003 (6.99)	72.510 (5.14)	-	-	-		54.794 (7.40)	(2,4)	-		0.165 (6.72)	(0,2)	-		-0.472 (7.24)	(1)	1956-74	0.982	3.023
Other noncommercial services	4.450 (0.40)	11.938 (2.35)	14.411 (2.69)	-	-	0.003 (1.26)	(3)	-		-		-		-		0.009 (2.11)	(1,2)	1954-74	0.917	2.174
College and university education	-302.967 (5.63)	30.098 (2.01)	40.962 (2.57)	-	-	-		55.561 (8.92)	(3,4)	-		0.471 (1.83)	(0)	-		-0.242 (2.63)	(1,5)	1956-74	0.986	2.777

$\bar{R}^2$ — The coefficient of determination, adjusted for degree of freedom.
D.W. — Durbin-Watson statistics.

Table 4-2

Estimation Results for Industry Investment Equations - Machinery and Equipment

	Constant	Investment dummy variables (1)	Investment dummy variables (2)	$\Sigma\Delta\frac{PX}{C}$		$\Sigma\frac{P}{C}$		ΣX		ΣK		Estimation period	$\bar{R}^2$	D.W.
Agriculture, fishing, and trapping	126.427 (1.20)	-	-	0.078 (5.72)	(0,2)	-		-		0.133 (5.19)	(1,2)	1952-74	0.914	2.107
Forestry	-9.723 (0.84)	-	-	0.033 (2.47)	(0)	-		-		0.289 (4.05)	(1,2)	1955-74	0.808	1.554
Mining														
Coal mining	-0.921 (0.13)	42.934 (8.99)	-	-		3.885 (2.78)	(0,1)	-		-0.235 (4.01)	(1)	1952-74	0.835	2.370
Crude petroleum, natural gas, etc.	-127.396 (3.71)	-27.833 (2.70)	-	-		20.512 (5.86)	(2,3)	0.226 (5.27)	(1,5)	-0.213 (1.90)	(1,4)	1954-75	0.922	2.168
Metal mining	-598.939 (4.98)	102.494 (2.45)	-	-		54.490 (4.79)	(1)	0.922 (6.18)	(0,4)	-0.710 (5.22)	(1,2)	1954-74	0.795	2.112
Nonmetal mining	-21.911 (2.53)	-25.470 (2.41)	-	-		-		0.913 (4.22)	(1,5)	-0.498 (4.04)	(1,3)	1954-75	0.856	1.980
Manufacturing: Durables														
Wood	15.896 (2.28)	67.839 (8.83)	-	0.047 (7.77)	(0,2)	-		-		0.109 (5.22)	(1,2)	1952-74	0.984	1.770
Furniture and fixtures	-4.745 (5.57)	-	-	0.045 (6.73)	(0,4)	-		-		0.183 (15.06)	(1)	1954-74	0.962	1.863
Iron and steel	25.611 (1.31)	62.243 (1.82)	-	0.197 (5.71)	(0,3)	-		-		0.135 (6.20)	(1)	1953-74	0.821	2.184
Nonferrous metals	-456.870 (4.42)	-	-	-		44.400 (4.52)	(0,4)	0.842 (5.37)	(0,2)	-0.168 (2.17)	(1)	1953-74	0.768	1.937
Metal fabricating	-164.031 (3.53)	-	-	-		21.804 (3.94)	(1,5)	0.459 (5.57)	(0,5)	-0.648 (4.66)	(1,3)	1954-74	0.969	2.213
Machinery (excluding electrical machinery	7.452 (1.86)	-	-	0.049 (4.35)	(0,5)	-		-		0.122 (7.04)	(1)	1955-74	0.891	1.801
Nonautomotive transport equipment	8.149 (1.05)	11.179 (1.45)	17.572 (2.15)	0.006 (1.22)	(0,1)	-		-		0.061 (2.19)	(1,2)	1951-74	0.542	1.765
Motor vehicles (excluding parts and accessories)	4.612 (0.12)	25.762 (2.94)	-	-		3.619 (1.59)	(1,4)	0.074 (3.61)	(0,1)	-0.181 (1.52)	(1,4)	1953-74	0.652	2.374
Motor vehicle parts and accessories	19.809 (2.72)	47.548 (3.39)	64.330 (3.30)	-		-		0.284 (3.38)	(1)	-0.323 (2.58)	(1,2)	1955-74	0.904	2.396
Electrical products	-36.227 (0.95)	-	-	-		9.418 (3.21)	(1,5)	0.282 (5.68)	(0,4)	-0.475 (4.32)	(1,4)	1954-74	0.935	2.476
Nonmetallic mineral products	-478.063 (4.39)	39.599 (2.62)	-	-		52.478 (4.24)	(2)	0.922 (5.03)	(0,4)	-0.341 (2.47)	(1,2)	1953-74	0.852	2.223
Manufacturing: Nondurables														
Food and beverages	-2.127 (0.04)	23.149 (2.73)	-	-		4.119 (1.00)	(2)	0.289 (3.61)	(1,3)	-0.264 (2.30)	(1,2)	1956-74	0.965	2.668
Tobacco products	-16.383 (3.09)	-	-	-		1.095 (1.74)	(2,3)	0.419 (4.89)	(0,3)	-0.742 (3.46)	(1,5)	1952-74	0.868	2.605
Rubber and plastic	0.458 (0.10)	27.289 (3.04)	-	0.032 (1.52)	(0,1)	-		-		0.211 (4.03)	(1,3)	1951-74	0.914	1.991
Leather	-2.112 (1.24)	-	-	0.008 (1.34)	(0,1)	-		-		0.241 (4.30)	(1,2)	1951-74	0.632	2.041
Textiles	96.245 (3.39)	-	-	-		3.168 (3.32)	(0,4)	0.087 (1.36)	(0,4)	-0.213 (2.85)	(1,5)	1953-74	0.918	2.282
Knitting and clothing	-75.541 (2.71)	-	-	-		7.147 (2.29)	(1,5)	0.129 (2.62)	(0,1)	-0.185 (1.20)	(1)	1954-74	0.886	1.611

Table 4-2 (concl.)

	Constant	Investment dummy variables (1)	(2)	$\Sigma\Delta\frac{PX}{C}$		$\Sigma\frac{P}{C}$		ΣX		ΣK		Estimation period	$\bar{R}^2$	D.W.
Paper and allied industries	-1,068.490 (3.37)	75.186 (1.42)	-	-		92.561 (2.91)	(3,8)	1.726 (4.47)	(0,3)	-0.520 (2.97)	(1,5)	1957-74	0.849	2.290
Printing, publishing and allied industries	6.040 (1.32)	-	-	0.015 (2.59)	(0,2)	-		-		0.121 (9.84)	(1,3)	1952-74	0.870	2.083
Petroleum and coal products	-8.332 (0.44)	40.696 (2.80)	-	-		1.880 (1.92)	(0,3)	0.154 (2.75)	(0,1)	-0.133 (1.11)	(1,2)	1952-74	0.855	2.652
Chemicals and chemical products	-76.536 (3.04)	64.246 (2.33)	-	0.329 (2.75)	(1,7)	-		-		0.183 (8.10)	(1,2)	1957-75	0.944	1.857
Miscellaneous manufacturing	-2.878 (1.08)	8.527 (2.77)	-	-		-		0.078 (2.99)	(0,1)	-0.155 (1.67)	(1,5)	1952-74	0.901	2.236
Construction	-552.575 (3.18)	-	-	-		136.187 (3.94)	(1,4)	0.142 (5.62)	(0)	-0.327 (4.28)	(1,3)	1955-74	0.873	1.877
Transportation	868.845 (2.62)	170.370 (5.49)	-	-		55.919 (2.05)	(2)	0.533 (10.75)	(2,5)	-0.659 (7.73)	(1,3)	1957-74	0.973	2.736
Communications	-1,205.420 (5.59)	-27.083 (2.31)	-	-		105.637 (5.57)	(2,6)	1.777 (5.00)	(0,3)	-0.799 (4.47)	(1,3)	1955-74	0.997	2.403
Finance, insurance, and real estate	-361.466 (4.23)	38.415 (3.47)	-	-		64.583 (4.70)	(2,6)	0.089 (2.85)	(0,4)	-0.400 (1.98)	(1,5)	1955-74	0.970	2.863
Utilities	-1,113.410 (4.76)	81.431 (2.21)	149.701 (3.98)	-		134.936 (4.54)	(1,3)	0.497 (4.42)	(0,4)	-0.305 (3.80)	(1,3)	1955-74	0.984	3.126
Wholesale and retail trade	-5.576 (0.24)	-	-	0.026 (2.42)	(0,5)	-		-		0.141 (10.64)	(1,2)	1955-74	0.913	2.061
Commercial services	-26.873 (1.14)	108.591 (2.76)	-	0.108 (4.21)	(0,1)	-		-		0.170 (2.68)	(1,2)	1954-74	0.987	2.318
Other noncommercial services	1.573 (1.92)	-	-	0.006 (2.93)	(1,3)	-		-		0.055 (3.12)	(1,5)	1953-75	0.779	2.077
College and university education	-64.917 (3.78)	-	-	-		8.125 (4.09)	(1,7)	0.228 (2.23)	(0,4)	-0.444 (2.13)	(1,4)	1956-74	0.995	2.650

$\bar{R}^2$ — The coefficient of determination, adjusted for degrees of freedom.
D.W. — Durbin-Watson statistics.

replacement. The use of a capacity variable should also help in this regard. In the case of the regulated industries, modification of the investment models to take account of the effect of the existing regulatory practices should prove helpful as well.

There is undoubtedly room for improvement in these areas. However, we think that the estimation equations can be used with care to produce reasonably good estimates of the impact of tax incentives on investment.

5 Design of Simulation Experiments and the Expected Response of CANDIDE 2.0 to Policy Changes

In order to analyse and compare the medium-term general equilibrium effects of the five policy changes under consideration, we designed eight simulation experiments.

The Simulation Experiments

Simulations 1 through 3 (the first set of investment incentive simulations) were designed to study, respectively, the effects of the three investment incentives – a corporate tax cut, increased tax credit, and increased tax depreciation – on key variables in the model, under the assumption of accommodating monetary policy and a flexible exchange rate.

Simulations 4 through 6 (the second set of investment incentive simulations) were designed to study, respectively, the effects of the three investment incentives on the same set of variables but under the assumption of nonaccommodating monetary policy and a flexible exchange rate regime. Simulations 7 and 8 were designed to study, respectively, the effects of a personal tax cut and a reduction in the manufacturers' sales tax on consumer goods on the same set of variables. But, like Simulations 4 through 6, Simulations 7 and 8 were also run under a nonaccommodating monetary policy and a flexible exchange rate regime.

In order to facilitate the comparison of these eight simulations, each one was designed so that the first-year revenue loss associated with each policy change was approximately $1 billion. By standardizing the policy simulations for revenue loss, the comparison of the general equilibrium effects of these policy changes becomes much more meaningful than it would have been in the absence of such standardization. In all cases the policy changes, or shocks, were introduced in 1980 and simulated through 1985.

In addition to generating these eight simulations so that we might study and compare the medium-term general equilibrium effects of the five policy changes indicated, we also reran the control solution, FORE.CANDI7885, so that we could study the direct effects of a corporate tax cut, increased tax credit, or increased tax depreciation on investment.

In the first part of this section we shall summarize the specific changes that were made to the control solution in order to generate the eight simulations used to study the general equilibrium effects[1] of the policy changes (the assumptions underlying these eight simulations are also reproduced in Appendix B of this study). In the second part of this section we shall indicate the procedure that was followed to measure the direct effect of each of the three investment incentives on the user cost of capital and investment.

Table 5-1 summarizes the changes that were made to the control solution in order to achieve a revenue loss of approximately $1 billion in the case of the eight policy changes.

It will be noted from Table 5-1 and Appendix B that in the case of the corporate tax cut simulations (Simulations 1 and 4), the revenue loss is achieved by reducing the federal corporate rate, GTF.R.CORP, and the industry effective tax rates, the IET's, by approximately 13 and 9 per cent, respectively, in each of the years 1980 through 1985. Similarly, in the case of the increased investment tax credit simulations (Simulations 2 and 5) and the increased tax depreciation simulations (Simulations 3 and 6), this revenue loss is achieved by increasing the investment tax credit rates and the tax depreciation rates by 80 and 27 per cent, respectively, over the period. But, in addition to increasing each of these latter rates, in the case of each of these two sets of simulations it is necessary, for the sake of maintaining consistency in the model, to make adjustments to the model variable(s) that is(are) directly affected by these rate increases. Accordingly, in the case of tax credit simulations, the federal government revenue from direct corporate taxes, GRF.DT.CCRP$, was reduced over the simulation period 1980-85 to reflect the fact that the dollar values of the increased investment tax credits associated with the 80 per cent increase in

Table 5-1

Simulation Design: Summary of Changes Made to Control Solution

	Federal corporate tax rate	Industry effective tax rate	Money supply	Investment tax credit rate	Federal government revenues from direct taxes	Tax depreciation rates	Net corporate tax income	Short-term interest rate	Exchange rate	Minimum tax reduction	Federal basic tax reduction	Federal manufacturers' tax rate
Simulations:												
1	Reduced by approx. 13 per cent	Reduced by approx. 9 per cent	Endogenous									
2			Endogenous	Increased by 80 per cent	Adjusted downward							
3			Endogenous			Increased by 27 per cent	Adjusted downward					
4	Reduced by approx. 13 per cent	Reduced by approx. 9 per cent	Exogenous (no change)					Adjusted upward				
5			Exogenous (no change)	Increased by 80 per cent	Adjusted downward			Adjusted upward				
6			Exogenous (no change)			Increased by 27 per cent	Adjusted downward	Adjusted upward				
7			Exogenous (no change)					Adjusted upward		Increased from $200 to $300	Increased from 9 to 11 per cent	
8			Exogenous (no change)					Adjusted upward				Reduced from 9 to 6.05 per cent

the ITC's would result in a reduction in federal government revenue from direct corporate taxes. Similarly, in the case of the tax depreciation simulations, the net corporate taxable income, GTF.V.PGT, was reduced by the capital cost allowances associated with the increase in the tax depreciation rates, to reflect the fact that net corporate taxable income would be reduced by such increased capital cost allowances.

In the first set of investment incentive simulations shown in Table 5-1, the money supply is left endogenous; in the second set, it is exogenized and held at its level in the control solution. Note that in the second set of investment incentive simulations, as well as the personal income tax cut and the manufacturers' sales tax cut simulations, in addition to keeping the money supply at its level in the control solution, the short-term interest rate is also adjusted upwards. This is done because in these five simulations we want to study the effects of the policy changes under the assumption of nonaccommodating monetary policy; that is, we want the difference between the money supply in each of these solutions and the control solution to be zero. But since the money supply growth under accommodating monetary policy is higher that in the base case, this implies that we have to adjust the short-term interest rate in such a way that the demand for money will be reduced in the nonaccommodating monetary case. This is done in the case of each of these five simulations by calculating the differences between the level of money supply in the control solution and its level in the corresponding simulation involving the policy change, under the assumption of accommodating monetary policy. Then, by multiplying each of these differences by the sum of the coefficients of the money supply in the short-term interest rate equation in the model, we obtain the corresponding changes in the short-term interest rate and use these to adjust upward the constant term in the equation explaining this variable in the model.

In the personal tax cut simulation, the approximate billion-dollar revenue loss was achieved by increasing the minimum tax reduction, GR.T.REDMIN, from $200 to $300 and increasing the federal basic tax reduction, GR.R.YRED1, from 9 to 11 per cent, while in the case of the federal manufacturers' sales tax cut simulation, this revenue loss was achieved by reducing the sales tax rate on consumer goods, GTF.R.MSC, from 9 to 6.05 per cent. As indicated earlier, the money supply assumptions and short-term interest rate adjustments for these two simulations are similar to those underlying the investment incentive simulations based on nonaccommodating monetary policy.

Procedure Used to Measure the Direct Effects of Investment Incentives on the User Cost of Capital and Investment

In order to measure separately the direct effects of a corporate tax cut, increased tax credits, and increased tax depreciation on the user cost of capital, we generated three new solutions. In each of these we made the same change(s) to the policy variables in question as we made in studying the general equilibrium effects of each of these policy changes but, in each case, we exogenized, at their control solution values, determinants of the user cost of capital that are not exogenous variables in the model. The difference between the user-cost-of-capital values in each of the solutions and the user-cost-of-capital values in the control solution thus provides us with a measure of the direct effect of the particular policy change on the user cost of capital.

This means, for example, that in measuring the direct effect of the corporate tax cut on the user-cost-of-capital variables, we multiplied the average federal corporate tax rate by 0.8660 and the effective tax rates by 0.9088, as we did in generating Simulation 1. But we exogenized the investment deflators and the corporate bond yield, at their control solution values, since these variables are the only determinants of the user cost of capital that are not exogenous variables in the model. Then we obtained the difference between the user-cost-of-capital values generated in this solution and the user-cost-of-capital values generated in the control solution.

Similarly, to measure separately the direct effect of each of these three policy changes on investment, we generated three additional solutions. In each of these we made the same change(s) to the policy variables in question as we did in order to study the direct effect of each of these policy changes on the user cost of capital. In each case, however, we exogenized, at their control solution values, those determinants of investment which are not exogenous variables in the model, the only exception being the capital stock variables, which are directly affected by the variation in investment.

Thus, in measuring the direct effect of the corporate tax cut on investment, we multiplied the average federal corporate tax rate by 0.8660 and the effective tax rates by 0.9088, but we exogenized the investment deflators, the corporate bond yield, and the output variables at their control solution values, since these are the only variables in the investment equations that could be affected indirectly by other variables appearing elsewhere in the model. Then we compared the values of investment generated in this

solution with the values of investment generated in the control solution.

By measuring the direct effect of each of these three policy changes on the user cost of capital and on investment, as outlined above, we were able to compare the direct effects of these policy changes on each of these variables.

Expected Response of CANDIDE 2.0 to Policy Changes

In order to set the stage for analysing and comparing the general equilibrium effects of the various policy changes in Chapter 6, we shall now discuss the expected response of CANDIDE 2.0 to these policy changes.

Expected Response to an Increase in the Money Supply

Before we go on to indicate the expected response of CANDIDE 2.0 to the various fiscal policy changes under study, it might be helpful to indicate the expected response of the model to an increase in the money supply, since in the first three policy changes under consideration each of the investment incentives is accompanied by an accommodating monetary policy.

An increase in the money supply (M1) – that is, currency, FCURRENCY.PUBLIC, plus demand deposits, FDEP.DDPUB.CB – will influence the model in two ways: through its influence on interest rates and credit availability, and through its influence on inflation expectations.

An increase in the money supply will lower the short-term interest rate – the 90-day finance company paper rate, FRATE.FCPAPER3M; this in turn will lead to a fall in the long-term interest rates (the latter falling less than the former because the long-term rates are also determined by U.S. interest rates). In particular, it will lead to a fall in the corporate bond yield, FRATE.IBOND.10Y, which is a determinant of the user-cost-of-capital variables, and this will reduce the user cost of capital and thus increase business fixed investment and GNE.

Through the term structure relationships in the model, the fall in the short-term interest rate will also result in a fall in mortgage rates, which represent the cost of capital in the housing market. This will increase housing starts and thus residential construction investment and GNE.

As far as credit availability is concerned, an increase in the money supply will increase the earning assets of the financial institutions. This will increase mortgage availability, which in turn will lead to an increase in housing starts, residential construction investment, and GNE.

Thus, in the short run, an increased money supply, because of its influence on the cost of capital and on credit availability, will decrease interest and mortgage rates and thereby increase investment and GNE. The decrease in interest and mortgage rates, however, will reduce interest income to persons, which in the short run will reduce real disposable income and consumption expenditures and thus have a counterbalancing negative effect on GNE. In the longer run, however, the net effect of these forces should be an increase in GNE.

Also, in the short run, the decline in these rates and the increase in investment will also tend to depress prices. For example, the fall in the corporate bond yield will lower the value of the user-cost-of-capital variables, and this will tend to reduce the prices that are determined by these variables. Similarly the increase in investment will increase labour productivity as a consequence of the substitution of capital for labour, and this will depress prices as happens in the case of the three corporate tax policy variables discussed below.

An increase in the money supply, however, through its influence on inflation expectations will tend to counterbalance some of the effects that it produces through cost-of-capital and credit availability channels. Over a two-year period, the increase in the money supply will increase inflation expectations, and this will cause wages, personal income, and hence GNE, to rise. Later, the increase in wages will bring about an increase in sector and final demand prices. The increase in inflation expectations induced by the increase in the growth of the money supply will also cause the exchange rate to depreciate, and this in turn will lead to increased prices for foreign goods. This increase in import and export prices will then exert upward pressure on domestic final demand prices, which in turn will reduce real personal disposable income and thus tend to produce a dampening effect on the growth of GNE. There could also be a tendency for the increase in final demand prices to exert some upward pressure on interest rates and thereby dampen the growth of investment and GNE. Given that an increasing money supply will exert strong downward pressure on interest rates, however, these effects are not likely to be large in the medium term. It is expected that the net medium-term effect of the increase in the money supply will be generally lower interest rates but higher prices and GNE. Of course, given that lower interest rates are likely to translate into lower interest payments and lower deficits for the various levels of government, it is likely that government deficits will exert less influence on

the increase in prices under accommodating than under nonaccommodating monetary policy.

The effect of the increased money supply on the unemployment rate is ambiguous. On the one hand, an increased money supply, operating through the cost-of-capital and credit availability channels, will lower interest and mortgage rates; will increase investment (and capital stock), GNE, and output; and hence will increase the demand for labour. On the other hand, an increased money supply, operating through the inflation expectations variable, will increase wages; and if wages increase faster than prices, that will increase the real wage rate and thus the labour force. If both of these forces were strong, there could be little or no improvement in the unemployment rate.

With regard to the effect of an increased money supply on the current account balance, it is expected that, on the one hand, the increase in investment and consumption, and its effect on economic activity, will increase imports. But, on the other hand, the increase in inflation expectations will result in a depreciation of the Canadian dollar, which will encourage exports but discourage imports. Thus the net effect on imports and the current account balance will depend on the relative size of the various export and import elasticities. As far as the capital account balance is concerned, it is also expected that the general drop in interest rates will result in decreased capital flows.

Finally, an increase in the money supply should result in the federal government issuing less debt. This, together with the reduction in interest rates, discussed above, should also help the various levels of government to reduce their interest payments, and both of these factors should result in an improvement in government deficits and interest payments.

Expected Response to a Corporate Tax Cut, Increased Investment Tax Credit, or Increased Tax Depreciation

As explained earlier, the three corporate tax policy changes considered here – namely, a corporate tax cut, increased investment tax credit, and increased tax depreciation – will result in a lowering of the user cost of capital.

A lowering of the user cost of capital relative to the price of output will, for a given increase in the demand for real output, result in an increase in investment and consequently an increase in GNE. Because of the long lags and the shape of the lagged distributions associated with the relative price variables – the price of output relative to the user cost of capital – in the investment equations, however, the initial impact of these policy changes on investment and GNE will be relatively small compared with their medium-term impact. Also, because the lag distributions for the relative price variable are typically shorter in the machinery and equipment investment equations than in the nonresidential construction investment equations, the impact of the tax policy changes will build up faster in the case of machinery and equipment investment than in the case of nonresidential construction investment.

As investment increases, it is expected that there will be an increase in the growth of the capital stock (of course, as the capital stock increases over time, changes in the desired capital stock or in the size of the gap between desired and actual capital stock will become smaller, and this will tend to have a depressing effect on investment after a while), which will lead to a general increase in the rate of growth of output per man-hour. This increase in the rate of growth of output per man-hour will have a tendency to decrease inflation rates, since the value-added prices are negatively related to labour productivity.

The growth in GNE brought about by the increase in investment will also bring about a growth in real output because of the link between GNE and real output in the model, and this growth in output will in turn lead to further growth in investment, which will help to offset the depressing effect on investment of increased growth in capital stock over time.

As far as the impact of each of these corporate tax policy changes on the unemployment rate is concerned, the result will depend on the relative size of their impact on the supply of, and demand for, labour. The main determinant of labour supply is the after-tax real wage, which is the main determinant of participation rates. But since the after-tax real wage is not directly affected by these policy changes, we should not expect a very dramatic increase in the supply of labour. On the other hand, employment is obtained by dividing man-hours by average weekly hours; generally the former are determined mainly by output and capital stock, while the latter are determined mainly by the after-tax real wage and, to a lesser extent, by the unemployment rate. So, given that the tax policy changes are expected to have a relatively large impact on output and capital stock and a relatively smaller impact on the after-tax real wage over the period, it is expected that this will stimulate employment more than the labour force and that the net effect will be a reduction in the unemployment rate.

In trying to predict the impact of these corporate tax policy changes on wages and prices it is useful to recall the following. In the model, wages are usually influenced by the inflation expectations variable and

by the reciprocal of the unemployment rate of prime-age working males, which is used as a proxy for labour market tightness, and in some cases by U.S. wage rates and industry-specific labour productivity. The price expectations variable, which enters the wage equations with a coefficient never significantly different from one, is influenced by past rates of change in the consumer price index and in the money supply (M1). Thus when the money supply is increased, as is the case when the three corporate tax policy changes are accompanied by accommodating monetary policy, the increase in the money supply leads to an increase in inflation expectations (recall that this increase builds up over a two-year period), which then leads to higher growth in wages. But when the money supply is held at its control levels in the shocked solution, as is done under the assumption of nonaccommodating monetary policy, the link between the rate of growth of money supply and inflation expectations is cut; thus wages are not affected through this channel.

Because under either assumption about monetary policy each policy change tends to produce a decline in the unemployment rate, as noted earlier, the labour market becomes tighter, and this would have a general tendency to increase wages and prices (sector prices, final demand prices, and the CPI, in that order). But there are two other forces that would tend to offset this. We have noted that the increase in the rate of growth of labour productivity (output per man-hour) has a tendency to reduce inflation rates. Also, because the user cost of capital enters as an explanatory variable in some of the price equations, the reduction in the user cost of capital, brought about by the investment incentive changes, as well as by a lower corporate bond yield in the case of accommodating monetary policy, results in a reduction in certain prices; hence this would tend to lower the inflation rate. Both of these forces thus counterbalance the effect of labour market tightness and if they are sufficiently strong, there could be a decline in the price level even in the medium term. In the long run, however, there would be a tendency for prices to rise as a result of increased economic activity, though they *might not* rise as much as they would under the assumption of accommodating monetary policy, where the money supply is allowed to rise above its control levels.

It must be emphasized, however, that whereas under accommodating monetary policy the increase in the money supply is expected to increase the growth in GNE produced by the investment incentives in the short and medium run, it is not at all obvious that this assumption about monetary policy will result in a larger increase in inflation in the medium term. On the one hand, the increased money supply will contribute more to inflation under accommodating than under nonaccommodating monetary policy because of its effect on inflation expectations and wages (and eventually on prices) and its effect in depreciating the exchange rate and increasing the prices of foreign, and ultimately domestic, goods. On the other hand, under the former assumption regarding monetary policy, lower interest rates and smaller interest payments, which result in smaller government deficits, are countervailing factors that contribute to a reduction in prices. The net effect on prices will therefore depend on the relative size of the various factors that influence prices when the investment incentives are increased under each of the assumptions regarding monetary policy.

With regard to the impact of these three corporate tax policy changes on the trade balance, it is expected that this balance will deteriorate mainly because of the high proportion of imports that is usually associated with increased investments and consumption (note that consumption is expected to increase because of the expected increase in both real wages and real disposable income). Also, it is expected that the deterioration in the trade balance will result in a decline in the exchange rate, and this will likely lead to a decline in long-term capital flows.

Finally, since all the tax policy changes involve continuing revenue losses, it is expected that they will lead to increased deficits. Since these deficits must be financed, this will lead to increased debt and interest payments; and there will be a continuing deterioration in these variables unless the tax policy changes stimulate economic activity to levels that are high enough to generate sufficient tax revenue to permit a reduction in the deficits. The deficit and debt positions of the federal government are expected to be different from those of the provincial and local governments, however. For the last two levels of government, the higher activity levels associated with the corporate tax policy changes will result in their having increased tax revenues. This will have a tendency to reduce their deficits or increase their surpluses and thus reduce their financial requirements and debt in the long run.

Expected Response to a Personal Income Tax Cut or a Reduction in the Federal Manufacturers' Sales Tax on Consumer Goods

Personal Income Tax Cut — We expect that this tax cut will exert a major influence on the demand side of the model through its impact on real disposable income. It will result in an increase in real disposable income, which in turn will lead to an increase in

real personal consumption and GNE. And, as in the case of the three corporate tax policy changes, the growth in GNE will lead to a growth in real output, which in turn will induce some growth in investment. Similarly, increased consumption and investment will lead to increased imports, and real government spending will tend to decline because the personal tax cut will mean, as in the case of the investment incentives, that less real revenue will be available for spending.

On the supply side of the model, the influence of the personal tax cut is exerted through its impact on the after-tax real wage. The personal tax cut increases the after-tax real wage, which is a major determinant of the participation rates; and this in turn leads to an increase in labour supply.

As in the case of the corporate tax policy changes, the impact of the personal income tax cut on the unemployment rate will depend on the relative size of its impact on the supply of, and demand for, labour. While the personal tax cut is expected to increase the supply of labour, as indicated above, it is also expected to increase employment through its effects on real income, personal consumption, and GNE. But if its employment effects are sufficiently strong – and this is likely to be the case given the relatively strong impact that the personal tax cut is expected to exert on the demand side of the model – there will likely be a drop in the unemployment rate.

As far as the impact of the personal income tax cut on prices is concerned, it is expected that the increase in economic activity via real income and consumption will exert some upward pressure on prices. Also, the tendency for the unemployment rate to fall would also increase labour market tightness and thus exert some upward pressure on wages and prices. Because the money supply is held at its control levels, however, and the link between the rate of growth of the money supply and inflation expectations is thus cut, wages would not be affected through this channel, so the increase in wages and prices might not be as large as it would be under a policy of accommodating monetary policy. However, whereas the corporate tax policy changes produced some countervailing forces for depressing inflation rates (namely, through their effects in increasing output per man-hour and reducing the user cost of capital), there are no such forces exerting downward pressure on prices in the case of the personal tax cut. It is thus expected that there will be some increase in prices.

With regard to the impact of the personal income tax cut on the foreign market variables (current account balance, long-term capital flows, and the exchange rate) and on the government variables (government deficits, debt, and interest payments), it is expected that these variables will move in the same direction as they did in the case of the corporate tax policy changes under the assumption of nonaccommodating monetary policy, but the changes in their magnitude should be different.

Reduction in the Federal Manufacturers' Sales Tax on Consumer Goods — The initial impact of this reduction will be a decline in the CPI. This decline will trigger off a number of responses on both the demand side and on the supply side of the model.

On the demand side, the lower CPI will result in an increase in real disposable income. This in turn will lead to an increase in real consumption expenditures and GNE, the responses of the other components of GNE being similar to their responses in the case of a personal income tax cut.

On the supply side, the decline in the CPI will result in an increase in the real wage rate, which in turn will result in an increase in the after-tax real wage rate (since there is no increase in taxes); this will increase the labour supply through the influence that after-tax real wage rate exert on participation rates.

The increased economic activity generated on the demand side of the model will increase output and employment. The effect of the increase in employment on the unemployment rate will depend on the relative sizes of the increase in employment and the labour supply. The demand effects, however, should be quite strong (especially after the first year), given the assumption that is made in the model with respect to the pass-through of the manufacturers' sales tax cut to consumer prices. So it is expected that there will be a general decline in the unemployment rate.

Although the increase in economic activity and labour market tightness will tend to exert some upward pressure on prices, the downward pressure on prices brought about by the lower CPI and the nonaccommodating monetary policy assumption should more than offset the upward pressure. The net effect should therefore be a strong downward pressure on prices. It should be borne in mind, however, that the extent to which prices will fall is dependent on the model's assumption that producers will pass on the total reduction in the manufacturers' sales tax to consumers. Since this is not likely to be done in the real world, the model will quite likely overstate these price responses.

As far as the impact of the manufacturers' sales tax cut on the foreign market and government variables is concerned, it is expected that these variables will move in the same direction as they did

in the case of the personal income tax cut, under the assumption of nonaccommodating monetary policy. The magnitude of the responses in these variables should be different, however, given the different price behaviour expected from each of these two tax policy changes.

6 Simulation Results

In this chapter we shall summarize the simulation results and discuss briefly each of the important findings.

Direct Effect of a Corporate Tax Cut, Increased Tax Credit, or Increased Tax Depreciation on Investment

The direct effect of a corporate tax cut, increased tax credit, or increased tax depreciation on private nonresidential construction investment and private machinery and equipment investment (as defined in the National Accounts) is shown in Table 6-1. From the table it will be observed that during the period 1980-85 a corporate tax cut produces larger increases in nonresidential construction investment than either increased tax credit or increased tax depreciation. During the years 1980-82, inclusive, the second and third largest increases in this kind of investment are produced by the increased investment tax credit and the increased tax depreciation, respectively; but during the years 1983-85, increased tax depreciation produces larger increases than increased tax credit. In the case of all three investment incentives, the largest increases in nonresidential construction investment occur four years after the initial policy changes.

As for machinery and equipment investment, during the years 1980-85, the investment tax credit generally produces larger increases than either a corporate tax cut or increased tax depreciation. During the years 1980-82, inclusive, the second and third largest increases in this kind of investment are produced by increased tax depreciation and a corporate tax cut, respectively. In the latter part of the simulation period, however, a corporate tax cut generally produces larger increases than does increased tax depreciation. In the case of all three investment incentives the largest increases in machinery and equipment investment occur three years after the policy changes are made.

In 1985 the largest increase in nonresidential construction investment is produced by a corporate tax cut, followed by increased tax depreciation; and the largest increase in machinery and equipment investment is produced by increased investment tax credit, again followed by increased tax depreciation. But when we accumulate the joint increases in these two types of investment over the period 1980-85, the largest accumulated change in private business fixed investment is produced by increased investment tax credit, followed closely by a corporate tax cut, while increased tax depreciation falls in third place.

It should be noted that the ranking of these fiscal policy changes with respect to their effect on each type of investment seems consistent with the way in which the investment incentives are applied in the Canadian economy. Thus, for example, the greater effect of increased investment tax credit on machinery and equipment is not surprising, given the fact that under existing tax laws most of these credits are claimable against machinery and equipment investment. Also, it is not surprising that the increases in machinery and equipment investment peak earlier than those in nonresidential construction investment, given that the lag distributions for the machinery and equipment investment equations are typically shorter than those for the nonresidential construction investment equations.

The ranking of the investment incentives with respect to their direct effect on investment indicates that if we want to stimulate investment by using any of them, over the medium term, the use of a corporate tax cut or increased investment tax credit is preferable to increased tax depreciation.

General Equilibrium Effects of a Corporate Tax Cut, Increased Investment Tax Credit, or Increased Tax Depreciation under Accommodating Monetary Policy

From Table 6-2 it will be observed that all three investment incentives contribute to the growth of

Table 6-1

Direct Effect of a Corporate Tax Cut, Increased Investment Tax Credit, or Increased Tax Depreciation on Investment

	Rank	Change in investment					
		1980	1981	1982	1983	1984	1985
		($ Millions)[1]					
Nonresidential construction investment							
Tax cut		27.0	70.8	129.7	236.8	246.6	193.7
Investment tax credit		30.0	69.5	109.9	129.5	133.7	110.3
Tax depreciation		20.9	50.1	86.7	146.6	153.1	120.5
		(Per cent)					
Tax cut		0.30	0.73	1.26	2.19	2.17	1.63
Investment tax credit		0.33	0.72	1.07	1.20	1.18	0.93
Tax depreciation		0.23	0.52	0.84	1.36	1.35	1.01
		($ Millions)[1]					
Machinery and equipment investment							
Tax cut		25.5	178.0	184.4	192.2	181.1	151.7
Investment tax credit		79.0	175.1	257.0	274.0	261.8	215.3
Tax depreciation		28.1	201.6	190.8	189.4	178.6	151.9
		(Per cent)					
Tax cut		0.24	1.56	1.63	1.68	1.53	1.21
Investment tax credit		0.73	1.53	2.27	2.40	2.21	1.72
Tax depreciation		0.26	1.76	1.68	1.66	1.51	1.21
		($ Millions)[1]					
Accumulated change in nonresidential construction investment							
Tax cut	1	27.0	97.8	227.5	464.3	710.9	904.6
Investment tax credit	2	30.0	99.5	209.4	338.9	472.6	582.9
Tax depreciation	3	20.9	71.0	157.7	304.3	457.4	577.9
Accumulated change in machinery and equipment investment							
Tax cut	3	25.5	203.5	387.9	580.1	761.2	912.9
Investment tax credit	1	79.0	254.1	511.1	785.1	1,046.9	1,262.2
Tax depreciation	2	28.1	229.7	420.5	609.9	788.5	940.4
Accumulated change in nonresidential construction and machinery and equipment investment combined							
Tax cut	2	52.5	301.3	615.4	1,044.4	1,472.1	1,817.5
Investment tax credit	1	109.0	353.6	720.5	1,124.0	1,519.5	1,845.1
Tax depreciation	3	49.0	300.7	578.2	914.2	1,245.9	1,518.3

1 1971 constant dollars.

investment (and, of course, capital stock), consumption, GNE, employment, labour productivity, and corporate profits, and generally to a lowering of the unemployment rate over the period 1980-85. As expected, the time profile of the general equilibrium effects of the investment incentives is similar to that of their direct effects on investment, except that in the case of the former, the largest increases in both types of investment occur four years after the policy changes. Also, as expected, the ranking of the general equilibrium effects of the three investment incentives on investment is similar to the ranking of their direct effects on this variable, and the former effects are greater in magnitude than the latter. It is also encouraging to note that the greater increases in investment observed when the incentives are applied under accommodating monetary policy is due more to the incentives themselves than to the accompanying monetary expansion. Thus, over the period 1980-85, the corporate tax cut by itself, for example, is responsible for an increase of $1,817.5 million in total nonresidential construction and machinery and

Table 6-2

General Equilibrium Effects of a Corporate Tax Cut, Increased Investment Tax Credit, or Increased Tax Depreciation on Selected Variables under Accommodating Monetary Policy (Shock-Control)

	1980	1981	1982	1983	1984	1985
			($ Millions)[1]			
Nonresidential construction investment						
Tax cut	30	94	183	326	364	326
Investment tax credit	32	91	153	200	223	215
Tax depreciation	22	67	124	204	226	203
Machinery and equipment investment						
Tax cut	32	210	249	318	346	338
Investment tax credit	76	184	286	361	402	396
Tax depreciation	32	223	232	272	291	286
Consumption						
Tax cut	165	350	572	766	900	1,080
Investment tax credit	201	334	488	612	750	935
Tax depreciation	117	266	393	511	594	742
Net exports						
Tax cut	-60	-210	-297	-414	-489	-528
Investment tax credit	-62	-171	-267	-346	-412	-479
Tax depreciation	-48	-207	-266	-357	-430	-470
GNE						
Tax cut	121	433	726	1,061	1,188	1,307
Investment tax credit	197	478	712	898	1,042	1,173
Tax depreciation	72	330	474	652	702	813
Nonresidential capital stock						
Tax cut	30	122	298	608	941	1,221
Investment tax credit	32	121	266	448	643	819
Tax depreciation	22	88	206	399	608	774
Machinery and equipment capital stock						
Tax cut	32	237	447	698	948	1,162
Investment tax credit	75	248	498	792	1,093	1,353
Tax depreciation	32	250	439	640	836	1,006
			(Thousands)			
Total labour force						
Tax cut	1	3	7	11	17	23
Investment tax credit	4	6	10	11	16	22
Tax depreciation	1	2	6	9	13	18
Total employment						
Tax cut	3	12	22	36	42	46
Investment tax credit	3	14	24	32	37	42
Tax depreciation	0	8	14	22	25	29
			(Percentage points)			
Unemployment rate						
Tax cut	-0.02	-0.09	-0.13	-0.22	-0.22	-0.21
Investment tax credit	0.01	-0.08	-0.13	-0.18	-0.18	-0.17
Tax depreciation	0.01	-0.05	-0.08	-0.12	-0.11	-0.10
			(Per cent)			
Labour/capital ratio						
Tax cut	-0.02	-0.08	-0.21	-0.35	-0.58	-0.77
Investment tax credit	-0.07	-0.09	-0.20	-0.35	-0.56	-0.71
Tax depreciation	-0.04	-0.11	-0.23	-0.34	-0.52	-0.63
Labour productivity						
Tax cut	0.07	0.20	0.32	0.41	0.45	0.50
Investment tax credit	0.15	0.22	0.29	0.34	0.41	0.45
Tax depreciation	0.06	0.16	0.22	0.26	0.28	0.33

Table 6-2 (cont.)

	1980	1981	1982	1983	1984	1985
			($ Millions)[1]			
Real disposable income						
Tax cut	198	358	554	710	872	1,053
Investment tax credit	299	430	601	734	922	1,131
Tax depreciation	180	324	466	574	696	857
			($ Millions)[2]			
Corporate profits						
Tax cut	1	274	304	568	365	83
Investment tax credit	-129	403	534	678	566	354
Tax depreciation	-60	221	171	313	115	-66
			(Per cent)			
GNE deflator						
Tax cut	-0.07	-0.15	-0.22	-0.16	-0.03	0.11
Investment tax credit	-0.16	-0.23	-0.23	-0.12	0.02	0.17
Tax depreciation	-0.07	-0.13	-0.15	-0.07	0.04	0.16
Price expectations						
Tax cut	0.0	-0.33	1.19	1.98	3.56	3.96
Investment tax credit	0.0	-2.28	1.18	2.78	4.17	4.44
Tax depreciation	0.0	-0.62	1.12	2.11	3.47	3.73
			(Per cent)			
Consumer price index						
Tax cut	-0.05	-0.11	-0.17	-0.10	0.02	0.15
Investment tax credit	-0.23	-0.29	-0.29	-0.16	-0.03	0.10
Tax depreciation	-0.08	-0.12	-0.16	-0.09	0.01	0.11
Real wage rate						
Tax cut	0.04	0.10	0.30	0.42	0.62	0.82
Investment tax credit	0.23	0.18	0.29	0.39	0.59	0.79
Tax depreciation	0.06	0.08	0.22	0.32	0.48	0.64
Exchange rate						
Tax cut	0.08	0.21	0.22	0.31	0.30	0.30
Investment tax credit	0.08	0.24	0.21	0.27	0.26	0.29
Tax depreciation	0.03	0.18	0.14	0.20	0.19	0.20
			($ Millions)[2]			
Current account balance						
Tax cut	-125	-490	-700	-1,032	-1,259	-1,427
Investment tax credit	-122	-393	-625	-864	-1,074	-1,310
Tax depreciation	-96	-482	-621	-877	-1,088	-2,157
Long-term capital flows						
Tax cut	-108	-139	-105	-47	-35	10
Investment tax credit	-91	-190	-151	-117	-100	-88
Tax depreciation	9	10	55	144	183	217
Money supply						
Tax cut	114	312	541	776	1,032	1,345
Investment tax credit	121	321	553	811	1,113	1,497
Tax depreciation	101	286	506	742	1,002	1,316
			(Percentage points)			
Short-term interest rate						
Tax cut	0.00	-0.00	-0.01	0.01	0.05	0.09
Investment tax credit	-0.01	-0.02	-0.02	0.02	0.08	0.12
Tax depreciation	-0.01	-0.01	-0.02	-0.00	0.03	0.07
Industrial bond yield						
Tax cut	0.00	-0.00	-0.00	-0.00	0.01	0.02
Investment tax credit	-0.00	-0.01	-0.01	-0.00	0.01	0.03
Tax depreciation	-0.00	-0.00	-0.00	-0.00	0.00	0.02

Table 6-2 (concl.)

	1980	1981	1982	1983	1984	1985
			($ Millions)[2]			
Total government deficit						
Tax cut	-827	-791	-762	-623	-758	-981
Investment tax credit	-865	-754	-793	-816	-1,005	-1,294
Tax depreciation	-794	-853	-909	-844	-988	-1,195
Federal government deficit						
Tax cut	-862	-966	-1,008	-942	-1,076	-1,276
Investment tax credit	-888	-926	-1,049	-1,127	-1,332	-1,607
Tax depreciation	-609	-716	-792	-743	-842	-988
Provincial government deficit						
Tax cut	36	184	267	349	353	325
Investment tax credit	23	176	265	326	346	335
Tax depreciation	-186	-132	-104	-84	-126	-184
Total government securities outstanding						
Tax cut	834	1,808	2,832	3,778	4,881	6,200
Investment tax credit	866	1,795	2,850	3,984	5,343	6,993
Tax depreciation	593	1,307	2,113	2,864	3,733	4,754
Provincial and municipal securities held						
Tax cut	-15	-91	-193	-322	-452	-576
Investment tax credit	-7	-75	-176	-301	-440	-579
Tax depreciation	85	152	214	272	349	449
Provincial and municipal securities held by nonresidents						
Tax cut	-19	-115	-249	-416	-571	-695
Investment tax credit	-15	-112	-252	-414	-568	-694
Tax depreciation	101	174	238	297	393	535
Federal investment payments						
Tax cut	61	182	309	431	571	745
Investment tax credit	58	175	304	451	634	848
Tax depreciation	41	126	222	320	433	566

1 1971 constant dollars
2 Current dollars

equipment investment (see Table 6-1); when accompanied by monetary expansion, this policy change is responsible for an increase of $2,815 million in these two types of investment (Appendix Table C-8).

It is interesting to note that the increases in consumption are generally greater than the increases in total business fixed investment over the simulation period. Indeed, the increases in consumption account for the major part of the increases in GNE throughout the period. For example, by 1985 the change in real consumption under the corporate tax cut is $1,080 million, while that in real GNE is $1,307 million. These large increases in consumption are due largely to the substantial increases in real disposable income (note that the real wage rate also increases throughout the period). The latter are due in part to the general reduction in prices relative to the control solution for most of the period (the increased investment incentives lower the user cost of capital, and this results in a decline in prices for most of the simulation period; by the end of the period, however, prices rise above their levels in the control solution) and in part to increases in the interest income of persons during the latter part of the period when interest rates rise above their levels in the control solution.[1]

Given the increases in investment and consumption and the high import content of these components of GNE, both net exports and the current account balance deteriorate throughout the period; however, the decline in the exchange rate, which is greater under accommodating than nonaccommodating monetary policy (see Table 6-3), provides some stimulus to exports and helps to reduce the deterioration in both of these variables.

In addition to producing a deterioration in the current account balance, all three investment incentives produce a deterioration in total and federal government deficits. And because the deficit must be financed this leads to an increase in total government securities outstanding (over $6 billion in the case of the corporate tax cut and the increased investment tax credit) and an increase in federal government interest payments, which by 1985 is $745 million in the case of the corporate tax cut.

Except in the case of increased tax depreciation, the provincial surpluses increase, and this leads to a general decrease in long-term capital flows as well as in provincial and municipal securities held by both the nonfinancial public and nonresidents. But because the revenue loss associated with increased tax depreciation is borne by both the federal and provincial governments, in the case of this investment incentive, provincial surpluses decrease, and this leads to an increase in long-term capital flows as well as in provincial and municipal securities held by both the nonfinancial public and nonresidents.

In summary, the results indicate that under accommodating monetary policy, the three investment incentives, but especially the corporate tax cut and the increased investment tax credit, can definitely be used to increase Canada's economic growth and reduce inflation, but their use will result in increases in the current account deficits and in the government's – particularly the federal government's – deficit, debt, and interest payments.

General Equilibrium Effects of a Corporate Tax Cut, Increased Investment Tax Credit, or Increased Tax Depreciation under Nonaccommodating Monetary Policy

From Table 6-3 it will be observed that under nonaccommodating monetary policy the investment incentives contribute far less to the growth of investment, capital stock, employment, and GNE than they did under accommodating monetary policy. Indeed, while under the latter the general equilibrium effects of the investment incentives are greater than their direct effects, under the former they are appreciably smaller; by 1985 the level of private business fixed investment is actually below its level in the control solution. Also, under nonaccommodating monetary policy the effect of the investment incentives on labour productivity becomes negative before the end of the period. Similarly, there is a noticeable reduction in corporate profits; in the case of all three investment incentives, corporate profits are more than a billion dollars below their level in the control solution in both 1984 and 1985.

Table 6-3

General Equilibrium Effects of a Corporate Tax Cut, Increased Investment Tax Credit, or Increased Tax Depreciation on Selected Variables under Nonaccommodating Monetary Policy (Shock-Control)

	1980	1981	1982	1983	1984	1985
			($ Millions)[1]			
Nonresidential construction investment						
Tax cut	30	84	142	225	173	21
Investment tax credit	32	81	112	97	23	-106
Tax depreciation	23	59	88	113	44	-93
Machinery and equipment investment						
Tax cut	29	183	165	143	49	-125
Investment tax credit	72	155	198	170	83	-88
Tax depreciation	29	200	156	101	4	-150
Consumption						
Tax cut	213	428	634	847	959	1,108
Investment tax credit	251	412	568	699	812	993
Tax depreciation	160	340	468	591	642	769
Net exports						
Tax cut	-88	-290	-414	-587	-709	-811
Investment tax credit	-91	-252	-390	-521	-646	-796
Tax depreciation	-72	-281	-379	-519	-639	-741
GNE						
Tax cut	137	367	470	593	417	161
Investment tax credit	212	407	481	402	222	-50
Tax depreciation	87	272	272	203	-51	-311
Nonresidential capital stock						
Tax cut	36	118	254	466	617	610
Investment tax credit	37	115	220	303	306	181
Tax depreciation	28	85	168	271	301	195

Table 6-3 (cont.)

	1980	1981	1982	1983	1984	1985
			($ Millions)[1]			
Machinery and equipment capital stock						
Tax cut	35	214	345	439	434	387
Investment tax credit	78	221	390	513	541	405
Tax depreciation	35	229	347	394	344	155
			(Thousands)			
Total labour force						
Tax cut	1	2	3	2	1	-1
Investment tax credit	4	5	5	1	-1	-3
Tax depreciation	1	2	2	-0	-3	-5
Total employment						
Tax cut	5	13	20	31	33	32
Investment tax credit	5	14	23	27	28	27
Tax depreciation	2	9	14	18	17	15
			(Percentage points)			
Unemployment rate						
Tax cut	-0.03	-0.10	-0.15	-0.26	-0.27	-0.27
Investment tax credit	-0.00	-0.09	-0.15	-0.23	-0.24	-0.24
Tax depreciation	-0.00	-0.07	-0.10	-0.16	-0.16	-0.16
			(Per cent)			
Labour/capital ratio						
Tax cut	-0.00	-0.06	-0.12	-0.13	-0.16	-0.08
Investment tax credit	-0.05	-0.05	-0.09	-0.12	-0.11	0.02
Tax depreciation	-0.03	-0.09	-0.13	-0.13	-0.12	0.02
Labour productivity						
Tax cut	0.06	0.13	0.13	0.07	-0.07	-0.23
Investment tax credit	0.15	0.16	0.10	-0.02	-0.15	-0.32
Tax depreciation	0.06	0.11	0.05	-0.06	-0.22	-0.38
			($ Millions)[1]			
Real disposable income						
Tax cut	294	560	829	1,054	1,303	1,626
Investment tax credit	401	637	882	1,105	1,402	1,810
Tax depreciation	266	513	728	912	1,115	1,424
			($ Millions)[2]			
Corporate profits						
Tax cut	-85	13	-249	-158	-659	-1,307
Investment tax credit	-222	136	72	-125	-524	-1,136
Tax depreciation	-137	-18	-253	-428	-889	-1,443
			(Per cent)			
GNE deflator						
Tax cut	-0.05	-0.10	-0.11	0.05	0.32	0.66
Investment tax credit	-0.15	-0.17	-0.10	0.10	0.41	0.79
Tax depreciation	-0.05	-0.08	-0.03	0.13	0.40	0.71
Price expectations						
Tax cut	-0.02	-0.42	-0.15	-0.06	1.99	3.11
Investment tax credit	-0.02	-2.38	-0.21	0.98	2.42	3.48
Tax depreciation	-0.02	-0.70	-0.08	0.43	1.77	2.86
			(Per cent)			
Consumer price index						
Tax cut	-0.04	-0.06	-0.06	0.12	0.38	0.69
Investment tax credit	-0.22	-0.24	-0.15	0.07	0.36	0.70
Tax depreciation	-0.07	-0.07	-0.03	0.12	0.37	0.64
Real wage rate						
Tax cut	0.03	0.04	0.11	0.00	-0.03	-0.06
Investment tax credit	0.22	0.13	0.06	-0.03	-0.09	-0.15
Tax depreciation	0.05	0.03	0.02	-0.06	-0.14	-0.21

Table 6-3 (concl.)

	1980	1981	1982	1983	1984	1985
Exchange rate						
Tax cut	0.05	0.16	0.14	0.24	0.18	0.14
Investment tax credit	0.05	0.19	0.15	0.17	0.13	0.13
Tax depreciation	0.00	0.13	0.09	0.12	0.08	0.04
			($ Millions)[2]			
Current account balance						
Tax cut	-177	-624	-892	-1,346	-1,673	-1,965
Investment tax credit	-177	-529	-857	-1,174	-1,516	-1,920
Tax depreciation	-142	-605	-836	-1,163	-1,479	-1,766
Long-term capital flows						
Tax cut	-24	83	289	457	567	740
Investment tax credit	-2	35	234	408	569	711
Tax depreciation	85	211	410	627	793	928
			(Percentage points)			
Short-term interest rate						
Tax cut	0.36	0.84	1.38	1.95	2.62	3.46
Investment tax credit	0.37	0.84	1.41	2.06	2.87	3.89
Tax depreciation	0.31	0.77	1.29	1.87	2.54	3.36
Industrial bond yield						
Tax cut	0.07	0.19	0.37	0.57	0.80	1.08
Investment tax credit	0.07	0.20	0.37	0.60	0.86	1.20
Tax depreciation	0.06	0.17	0.34	0.54	0.77	1.05
			($ Millions)[2]			
Total government deficit						
Tax cut	-878	-1,006	-1,276	-1,499	-2,140	-3,080
Investment tax credit	-922	-983	-1,298	-1,762	-2,525	-3,657
Tax depreciation	-839	-1,053	-1,362	-1,694	-2,343	-3,265
Federal government deficit						
Tax cut	-942	-1,256	-1,656	-2,056	-2,826	-3,914
Investment tax credit	-975	-1,231	-1,695	-2,321	-3,246	-4,576
Tax depreciation	-679	-985	-1,373	-1,815	-2,543	-3,575
Provincial government deficit						
Tax cut	68	257	369	515	585	644
Investment tax credit	56	250	374	503	597	708
Tax depreciation	-158	-64	-4	74	90	122
Total government securities outstanding						
Tax cut	825	2,021	3,597	5,528	8,212	11,981
Investment tax credit	861	2,028	3,630	5,819	8,907	13,317
Tax depreciation	581	1,499	2,789	4,481	6,878	10,290
Provincial and municipal securities held						
Tax cut	-129	-401	-875	-1,597	-2,583	-3,861
Investment tax credit	-126	-396	-904	-1,652	-2,706	-4,120
Tax depreciation	-20	-131	-441	-948	-1,692	-2,713
Provincial and municipal securities held by nonresidents						
Tax cut	26	67	229	493	946	1,624
Investment tax credit	34	78	236	524	1,017	1,762
Tax depreciation	140	337	673	1,144	1,829	2,755
Federal interest payments						
Tax cut	193	584	1,145	1,871	2,845	4,207
Investment tax credit	199	588	1,159	1,963	3,091	4,704
Tax depreciation	157	494	995	1,682	2,609	3,903

1 1971 constant dollars
2 Current dollars

Because productivity growth is less and interest rates are much higher than they are under accommodating monetary policy, by the end of the period, prices end up being much higher under nonaccommodating than under accommodating monetary policy. So it is very clear that restrictive monetary

policy nullifies the ability of the investment incentives to deal with the problem of stagflation. It "crowds out" the effects of the investment incentives; consequently, their effect on increasing investment begins to wash out earlier than it would under accommodating monetary policy. This is a very important finding. It casts serious doubt on the validity of the Bank of Canada's argument that the very tight monetary policy it has been pursuing (certainly until quite recently) is the best way to cure the high inflation that Canada has been experiencing over the past few years. It strongly suggests that if the Bank of Canada were to continue to pursue a very restrictive monetary policy, stagflation would remain with us even in the presence of increases in investment incentives of the magnitude under consideration.

With prices higher under nonaccommodating monetary policy, the real wage rate is much lower; consequently, the change in the labour force is much smaller than under accommodating monetary policy. So, while employment is greater under accommodating monetary policy, the decline in the unemployment rate is a little greater under nonaccommodating monetary policy.

Although, as expected, the exchange rate depreciates less and the changes in real disposable income and consumption are greater under nonaccommodating monetary policy (because of much higher interest income), the generally slower growth and higher prices under this policy result in a greater deterioration in net exports and the current account balance. And, not surprisingly, the higher interest rates under nonaccommodating monetary policy lead to a noticeable increase in long-term capital flows.

These results, when compared with the corresponding results under accommodating monetary policy, constitute another very important finding. They suggest that an increase in investment incentives would weaken the Bank of Canada's more compelling argument for following a high interest rate policy similar to that pursued (from 1981 until recently) in the United States – namely, that the benefits from pursuing such a policy (maintaining the value of the Canadian dollar, controlling inflation, and attracting foreign capital or preventing domestic capital outflow) will outweigh the benefits from pursuing an independent monetary policy with lower interest rates and a lower exchange rate. Our results clearly indicate that although there are higher inflows of foreign capital under nonaccommodating monetary policy, with increased investment incentives the benefits from lower interest rates and lower exchange rates would far exceed the benefits from that policy. Not only is growth greater under this alternative policy, but prices are lower and the balance-of-payment deficit is much smaller; hence the need for foreign capital is substantially reduced.

Finally, under nonaccommodating monetary policy the investment incentives produce increases in total and federal government deficits, which by 1985 are about three times as large as those produced under accommodating monetary policy. The incentives also produce increases in provincial government surpluses and total government debt, which are more than twice as large as those produced under accommodating monetary policy. And the increases in federal government interest payments are just staggering; by 1985 they are more than five times higher under nonaccommodating monetary policy.

In short, with very few exceptions – a slightly better performance in the unemployment rate and a smaller drop in the exchange rate (which is not necessarily as beneficial as has been claimed) and somewhat greater improvement in provincial deficit and debt positions – the investment incentives produce much better results under accommodating than under nonaccommodating monetary policy.

Our findings with regard to the investment incentives, under the alternative monetary policy assumptions, imply that these incentives, particularly the corporate tax cut and increased investment tax credit, can contribute significantly to the improvement of Canada's economic growth and, indeed, the overall performance of the Canadian economy. But if such improvement is to be achieved, monetary policy should not be very restrictive, and the incentives should be made more effective and/or be accompanied by other policy changes designed to improve the current account deficits and the federal government's deficit and debt position.

General Equilibrium Effects of a Personal Income Tax Cut

From Table 6-4 it will be seen that the reduction in personal income taxes results in large increases in real disposable income, which steadily rise to an increase of $1,509 million in 1985. It should be noted, however (Appendix Tables C-13, C-15, and C-16), that over the simulation period the reduction in personal income taxes is considerably less than the reduction in corporate income taxes and in the manufacturers' sales taxes produced by the investment incentives and the manufacturers' sales tax cut, respectively. This smaller reduction in the personal income taxes lost over time is due to the way the Canadian system of indexing personal income taxes affects federal revenues over time, and it will tend to make the accumulated federal deficit, debt, and interest payments associated with the personal

Table 6-4

General Equilibrium Effects of a Personal Income Tax Cut on Selected Variables under Nonaccommodating Monetary Policy (Shock-Control)

	1980	1981	1982	1983	1984	1985
			($ Millions)[1]			
Nonresidential construction investment	19	42	35	12	-54	-145
Machinery and equipment investment	23	37	10	-35	-123	-226
Consumption	496	549	737	827	895	963
Net exports	-176	-249	-350	-431	-506	-603
GNE	349	346	394	328	145	-44
Nonresidential capital stock	24	65	97	105	48	-97
Machinery and equipment capital stock	28	61	63	23	-94	-295
			(Thousands)			
Total labour force	8	13	18	14	13	11
Total employment	19	23	31	31	31	28
			(Percentage points)			
Unemployment rate	-0.10	-0.10	-0.12	-0.15	-0.15	-0.14
			(Per cent)			
Labour/capital ratio	0.09	0.09	0.16	0.19	0.27	0.41
Labour productivity	0.14	0.09	0.03	-0.03	-0.15	-0.26
			($ Millions)[1]			
Real disposable income	687	815	979	1,115	1,299	1,509
			($ Millions)[2]			
Corporate profits	269	212	207	115	-314	-525
			(Per cent)			
GNE deflator	-0.01	0.05	0.17	0.34	0.55	0.83
Price expectations	-0.02	0.10	0.51	1.28	1.87	2.15
			(Per cent)			
Consumer price index	0.01	0.06	0.18	0.34	0.53	0.78
Real wage rate	-0.01	-0.02	-0.05	-0.08	-0.09	-0.14
Exchange rate	0.11	0.10	0.10	0.09	0.04	0.03
			($ Millions)[2]			
Current account balance	-354	-500	-716	-938	-1,127	-1,428
Long-term capital flows	-7	67	190	317	442	561
			(Percentage points)			
Short-term interest rate	0.30	0.66	1.07	1.50	2.02	2.65
Industrial bond yield	0.05	0.15	0.29	0.44	0.62	0.83
			($ Millions)[2]			
Total government deficit	-630	-736	-925	-1,183	-1,689	-2,312
Federal government deficit	-759	-987	-1,274	-1,639	-2,225	-2,965
Provincial government deficit	136	260	332	414	448	484
Total government securities outstanding	641	1,602	2,817	4,372	6,478	9,319
Provincial and municipal securities held	-146	-379	-767	-1,336	-2,088	-3,078
Provincial and municipal securities held by nonresidents	-22	-21	79	271	622	1,142
Federal interest payments	156	457	889	1,445	2,196	3,210

1 1971 constant dollars.
2 Current dollars.

income tax cut smaller than those associated with the increased investment incentives and the manufacturers' sales tax cut under nonaccommodating monetary policy.

The increases in real disposable income lead to large increases in real consumption, which increases by $963 million in 1985. Mainly because of this, the GNE increases by $349 million in 1980 – much more

than it did that year in the case of the investment incentives, under either of the monetary policy assumptions, but less than in the case of the manufacturers' sales tax cut (see first page of Appendix Table C-1) – and continues to increase until 1984. But in 1985 its value is lower than in the control solution. It is interesting to note, however, that because of the high import leakages associated with consumption expenditures, the increases in real consumption are greater than the increases in GNE during every year of the simulation period. Indeed, it is very clear from examining the changes in GNE and its components that, on the demand side, the impact of the personal income tax cut on GNE works primarily through its effect on real consumption.

Because of the high import content of consumption, net exports and the current account balance deteriorate throughout the simulation period, until 1985 when they are $603 million and $1,428 million less, respectively, than in the control solution. In the case of the personal income tax cut, however, the deterioration in the current account deficit is appreciably smaller than it is in the case of the corporate tax cut under nonaccommodating monetary policy. The reason for this is that the latter policy stimulates real consumption almost as much as the former; in addition, it stimulates real investment considerably more. And since the import content of both of these variables – especially investment – is high, the deterioration in the current account deficit is much greater in the case of the corporate tax cut. This also holds true in the case of the other investment incentives under nonaccommodating monetary policy.

As in the case of the investment incentives under nonaccommodating monetary policy, the increases in labour productivity are negligible during the first half of the simulation period and negative in the second half. On the other hand, the increases in corporate profits before taxes are generally larger than those produced by the investment incentives under the assumption of nonaccommodating monetary policy (indeed, under these latter policies the increases in corporate profits are generally negative), but they too become negative in the last two years of the simulation period.

On the supply side, the reductions in the personal income tax rate lead to increases in the real after-tax wage rate, which cause the labour force to increase by 11,000 persons in 1985. And the increased income generated by the personal tax cut causes employment to increase over the period – by 19,000 in 1980 and by 28,000 in 1985. This increase in employment, however, is not sufficient to reduce the unemployment rate by a substantial amount. Note in Table 6-4 that the unemployment rate is only 0.14 per cent lower than it is in the control solution. Indeed, this is the lowest reduction in the unemployment rate produced by any of the policy changes under nonaccommodating monetary policy.

Although the decline in the unemployment rate is small and the money supply is held at its level in the control solution, both of which should produce very little upward pressure on prices, other forces that would exert downward pressure on prices (such as a reduction in the user cost of capital) are absent; thus both the GNE deflator and the CPI increase by 0.8 per cent by the end of the period. Indeed, over the simulation period the performance of prices in this simulation is worse than that of any of the other policy changes.

Since indexing causes the revenue losses to decrease over time, the effect of a personal income tax cut on government deficit, debt, and interest payments is consistently smaller than in the case of a corporate tax cut, under the assumption of nonaccommodating monetary policy, because in the case of the latter (and the other policy changes under study) the revenue losses increase over time.

In summary, on the demand side, the major impact of the personal income tax cut is to increase consumption through increases in real disposable income. But because of the high import leakages associated with consumption expenditures, real GNE grows less than real consumption, and the current account balance deteriorates over the period. Moreover, the increase in employment as a result of the increase in income is not much greater than the increase in the labour force that stems from the increase in the real wage rate on the supply side. As a consequence, there is not much change in the unemployment rate. Although this is the case and the money supply is held at control, the largest increases in prices are produced by this policy change. Government deficit, debt, and interest payments move in the same direction as they did in the case of the corporate tax cut under nonaccommodating monetary policy. But the magnitude of the changes in these variables is smaller in the case of the personal tax cut, mainly because the indexing of personal income taxes in Canada operates in such a way that the revenue losses associated with this policy change decrease over time. These results, when compared with those of the other policy changes under study, suggest that if policy makers were to give top priority to dealing with the problem of stagflation, the personal income tax cut would be the least preferred of the policy changes studied.

General Equilibrium Effects of a Reduction in the Federal Manufacturers' Sales Tax on Consumer Goods

The general equilibrium effects of the reduction in the federal manufacturers' sales tax on consumer goods are shown in Table 6-5.

On the demand side, the reduction in the sales tax rate on consumer goods from 9 to approximately 6 per cent results in a large reduction in the CPI – 1.14 per cent in the first year of the change and 1.71 per cent at the end of the simulation period. Indeed, the annual reductions in the CPI are, on average, more than a full percentage point larger than those which occur in the case of the investment incentives under nonaccommodating monetary policy.

With such a large reduction in prices throughout the period, real disposable income increases by over $1 billion in 1980 and by over $2 billion in 1985. If we compare the increases in real disposable income in Table 6-5 with those in Table 6-4, we see that this policy change produces increases in real disposable income that are more than 30 per cent larger than those produced by the personal income tax cut. Of course, this large difference hinges critically on the assumption made in the model that producers will pass on the full cost reduction from the federal manufacturers' sales tax cut to consumers. If, as we strongly suspect, this is not the case, then the increases in real disposable income and in the other variables affected by it will be smaller than indicated.

The large increases in real disposable income lead to very large increases in consumption, which rise from $717 million in 1980 to $1,277 million in 1985. But even though the main impact on the demand side is the large increases in consumption, for the first few years investment also increases much more than it does in the case of the personal income tax cut (though much less than it does in the case of the investment incentives under nonaccommodating monetary policy). As expected, there is a deterioration in net exports and, as in the case of the personal income tax cut, the increases in consumption generally exceed the increase in GNE over the simulation period.

Unlike the other fiscal policy changes under nonaccommodating monetary policy, this policy change produces changes in labour productivity that are positive throughout the period, but they start out being small (0.44 per cent in 1980) and continue to decline throughout the period. It also produces the highest levels of corporate profits of all the policy changes under nonaccommodating monetary policy.

On the supply side, the increase in the real wage rate as a consequence of the decline in the CPI leads to over 18,000 more persons being drawn into the labour force in 1985. But because the employment impact of the manufacturers' sales tax cut is great, employment increases by 51,000 in 1985. As a consequence, the unemployment rate falls by almost 0.3 per cent in 1985. While this reduction in the unemployment rate is greater, however, than that produced by any of the other policy changes being studied, the differences between the unemployment rates produced by the various other policy changes are not that great (see Appendix Table C-1, p. 82).

There is less deterioration in net exports and the current account balance with this than with any of the other fiscal policy changes studied. This is due to the large depreciation of the dollar and the large reductions in prices, both of which are greater with this than with any of the other policy changes.

As far as the government deficit, debt, and interest payments are concerned, over the period these are lower with the federal manufacturers' sales tax cut than with any of the investment incentives under nonaccommodating monetary policy. But, except for total government deficits, the manufacturers' sales tax cut produces slightly worse results than the personal income tax cut; that is, it produces higher levels of federal government deficit, total government debt, and federal government interest payments than the personal income tax cut.

In summary, the reduction in the manufacturers' sales tax, like the personal income tax cut, increases demand through its effect on real disposable income and increases the supply of labour through its effect on the after-tax real wage rate. But because of the relatively large reductions in the CPI to which this policy change gives rise, its effects on the performance of GNE, employment, productivity, profits, the current account balance, and the government debt position are generally more satisfactory than the effects of any of the other policy changes studied. While the price reductions produced by this policy change might be overstated, the results are at least indicative of the kind of improvements that could be made in a number of key economic variables if there were such large reductions in prices.

Table 6-5

General Equilibrium Effects of a Reduction in the Federal Manufacturers' Sales Tax on Selected Variables under Nonaccommodating Monetary Policy (Shock-Control)

	1980	1981	1982	1983	1984	1985
			($ Millions)[1]			
Nonresidential construction investment	9	62	89	77	24	-54
Machinery and equipment investment	33	138	101	61	-10	-119
Consumption	717	796	966	999	1,132	1,277
Net exports	-192	-385	-353	-373	-422	-495
GNE	478	888	872	833	788	720
Nonresidential capital stock	14	75	160	229	242	117
Machinery and equipment capital stock	37	168	243	273	237	106
			(Thousands)			
Total labour force	20	20	27	17	18	18
Total employment	10	35	46	47	51	51
			(Percentage points)			
Unemployment rate	0.08	-0.15	-0.17	-0.27	-0.29	-0.28
			(Per cent)			
Labour/capital ratio	-0.12	0.14	0.16	0.16	0.19	0.29
Labour productivity	0.44	0.35	0.23	0.14	0.08	0.04
			($ Millions)[1]			
Real disposal income	1,066	1,106	1,362	1,432	1,710	2,029
			($ Millions)[2]			
Corporate profits	-1,068	600	176	440	94	-55
			(Per cent)			
GNE deflator	-0.79	-0.96	-1.02	-0.86	-0.69	-0.44
Price expectations	-0.02	-12.57	-1.21	-0.56	2.34	1.89
			(Per cent)			
Consumer price index	-1.14	-1.26	-1.31	-1.11	-0.95	-0.71
Real wage rate	1.16	0.61	0.62	0.46	0.55	0.55
Exchange rate	0.08	0.58	0.22	0.32	0.29	0.36
			($ Millions)[2]			
Current account balance	-365	-860	-739	-807	-946	-1,168
Long-term capital flows	121	-61	20	154	55	12
			(Percentage points)			
Short-term interest rate	0.35	0.71	1.11	1.54	1.98	2.59
Industrial bond yield	0.06	0.17	0.30	0.46	0.62	0.82
			($ Millions)[2]			
Total government deficit	-1,056	-593	-838	-1,026	-1,393	-2,262
Federal government deficit	-1,193	-968	-1,364	-1,695	-2,231	-3,186
Provincial government deficit	79	366	474	578	688	735
Total government securities outstanding	1,035	1,917	3,209	4,788	6,902	9,945
Provincial and municipal securities held	-135	-420	-906	-1,562	-2,435	-3,507
Provincial and municipal securities held by nonresidents	16	-31	1	104	304	680
Federal interest payments	206	531	963	1,530	2,230	3,243

1 1971 constant dollars.
2 Current dollars.

General Equilibrium Effects of the Policy Changes on the Composition of Savings and Investment

To further compare the benefits and costs associated with the various policy changes under study, we shall now examine their general equilibrium effects on the composition of savings and investment in various sectors of the economy. Table 6-6 shows the effects of the three investment incentives under accommodating monetary policy, while Table 6-7 shows the effects of all five policy changes under nonaccommodating monetary policy.

Table 6-6

General Equilibrium Effects of Policy Changes on the Composition of Savings and Investment under Accommodating Monetary Policy

	Control solution		1985		
	1980	1985	Corporate tax cut	Investment tax credit increase	Tax depreciation increase
			($ Billions)		
Gross domestic capital formation (private and public)	67.5	111.5	114.2	114.1	113.6
			(Per cent)		
Composition of investment:					
Government sector	13.9	12.8	12.6	12.6	12.6
Business sector	82.9	83.7	83.9	83.9	83.9
Inventory change	3.2	3.5	3.5	3.5	3.5
Composition of savings:					
Personal sector	28.5	23.7	23.7	23.8	23.7
Government sector	-1.4	5.5	4.6	4.3	4.4
Federal	-12.0	-5.0	-6.0	-6.3	-5.8
Provincial	4.6	4.3	4.5	4.5	4.0
Municipal	1.8	1.9	1.9	1.9	1.9
Hospital	0.0	0.1	0.1	0.1	0.1
Canada Pension	3.1	3.1	3.0	3.0	3.0
Quebec Pension	1.1	1.1	1.1	1.1	1.1
Business sector	61.1	58.2	58.1	58.4	58.4
Foreign sector	11.3	12.7	13.6	13.6	13.6
Residual	-0.0	-0.0	-0.0	-0.0	-0.0

Table 6-7

General Equilibrium Effects of Policy Changes on the Composition of Savings and Investment under Nonaccommodating Monetary Policy

	Control solution		1985				
	1980	1985	Corporate tax cut	Investment tax credit increase	Tax depreciation increase	Personal tax cut	Manufacturers' sales tax cut
				($ Billions)			
Gross domestic capital formation (private and public)	67.5	111.5	112.1	111.9	111.5	111.4	111.1
				(Per cent)			
Composition of investment:							
Government sector	13.9	12.8	12.9	12.9	12.9	12.9	12.9
Business sector	82.9	83.7	83.7	83.6	83.6	83.5	83.6
Inventory change	3.2	3.5	3.4	3.5	3.4	3.5	3.5
Composition of savings:							
Personal sector	28.5	23.7	24.6	24.7	24.6	24.6	24.6
Government sector	-1.4	5.5	2.8	2.2	2.6	3.5	3.5
Federal	-12.0	-5.0	-8.5	-9.1	-8.2	-7.7	-7.9
Provincial	4.6	4.3	4.8	4.9	4.4	4.8	5.0
Municipal	1.8	1.9	1.9	1.9	1.9	1.9	1.9
Hospital	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Canada Pension	3.1	3.1	3.2	3.2	3.2	3.2	3.2
Quebec Pension	1.1	1.1	1.2	1.2	1.2	1.2	1.2
Business sector	61.6	58.2	58.3	58.7	58.6	58.0	58.1
Foreign sector	11.3	12.7	14.4	14.4	14.3	14.0	13.8
Residual	-0.0	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1

From Table 6-6 it will be observed that under accommodating monetary policy, by 1985, each of the three investment incentives produces a slight, identical reduction in government investment from the control solution; that is, in each case the percentage share of investment is 12.6 compared with 12.8 in the control solution. This small decrease in the percentage of government investment is matched by a corresponding increase in the percentage of business investment, however. In other words, in the case of each of the investment incentives, by 1985 the percentage of business investment increases to 83.9 compared with 83.7 in the control solution. So, since there is no change in the percentage of inventory investment in that year, the main effect of the investment incentives is to produce a slight increase in investment in the business sector at the expense of investment in the government sector.

On the other hand, the investment incentives produce some very interesting changes in the composition of savings. They produce hardly any changes in the percentage share of savings in the personal sector, but they produce very noticeable changes in the percentage of total government savings, federal government dissavings, and savings in the foreign sector (for example, the percentage of foreign sector savings goes from 12.7 in the control solution to 13.6 in the case of each of the incentives). And they generally produce small increases in the percentage of savings in the provincial government and business sectors.

From Table 6-7 it will be observed that the effects of the investment incentives under nonaccommodating monetary policy are different from their effects under accommodating monetary policy. In the case of investment, by 1985 there is a slight increase in the percentage of government investment; but except in the case of the corporate tax cut, there is a slight decrease in the percentage of business investment. Also, except in the case of the tax credit increase, there is a small reduction in inventory change.

In the case of savings, the percentages for the personal, provincial government, business, and foreign sectors are generally higher under nonaccommodating than under accommodating monetary policy; in relative terms, however, the smallest differences in these increases are in the savings of the business sector. Also, total government savings are much smaller and federal government dissavings much larger under nonaccommodating than under accommodating monetary policy. So, generally, under nonaccommodating monetary policy the investment incentives change the composition of savings in such a way that the personal, provincial, and foreign sectors are the main beneficiaries.

A comparison of the effects of the other two policy changes with the effects of the three investment incentives reveals that under nonaccommodating monetary policy the personal tax cut and the manufacturers' sales tax cut affect the composition of investment in a similar way to the investment incentives. That is, they produce a slight increase in the percentage of government investment and – as in the case of the tax credit increase and the tax depreciation increase – a slight decrease in the percentage of business investment.

Finally, with regard to the comparative effects of the five policy changes on the composition of savings, it will be noticed in Table 6-7 that under nonaccommodating monetary policy both the personal tax cut and the manufacturers' sales tax cut produce directional changes in the composition of savings similar to those produced by the investment incentives. In percentage terms, however, they produce higher government savings, lower federal government dissavings, and lower foreign savings, as well as lower business savings, than the investment incentives – in fact, lower business savings than in the control solution.

In summary, as far as investment is concerned, the policy changes mainly produce shifts in the composition of investment between the government and business sectors. (An industry disaggregation of investment would quite likely disclose some more pronounced shifts in the composition of investment at the industry level.) But they produce a few noticeable shifts in the composition of savings. From the policy point of view, the most interesting is the large increase in federal dissavings and in the savings of the foreign sector and, to a lesser extent, the provincial government and business sectors. This is consistent with the results obtained on the effect of the policy changes, and particularly the investment incentives, in increasing federal government deficits, provincial government surpluses, retained earnings, and the balance-of-payment deficits.

Very important, these results imply not only that the investment incentives compare favourably with the other policy changes in terms of their effects on personal savings but that the best distribution of both business investment and savings would be produced by the investment incentives under accommodating monetary policy. (See, also, a comparison of the investment and savings rates for the various policy changes under study, Appendix Table C-1, pp. 75 and 76).

The Effectiveness of the Investment Incentives

Since the investment incentives generate such large revenue losses and hence such large deficits, especially federal government deficits, it seems important to determine how cost-effective they are – that is, how the extra investment they generate compares with the revenue loss or the deficits to which they give rise.

In the literature[2] the effectiveness of investment incentives is usually measured by a benefit/cost ratio, defined as the additional investment stimulated by the incentive(s), divided by the cost of the investment incentive in terms of the revenue that the government forgoes. While we do not believe that measures of this kind can adequately assess the benefits and costs associated with the use of investment incentives or the other policy changes under study (an adequate assessment would require an examination of the general equilibrium effects of the policy changes, as was done above), we shall display in Table 6-8 our estimates of the variables that will enable us to calculate this ratio. We shall also display in that table our estimates of other variables that may be used to obtain alternative measures of the effectiveness of the investment incentives and the other policy changes, as some of these alternative measures appear to be more meaningful.

Column (1) of Table 6-8 shows the accumulated value of business fixed investment over the period 1980-85 for each of the policy changes under study, while column (2) shows the accumulated revenue losses directly attributable to each policy change. The usual cost/benefit ratio discussed in the literature is obtained by dividing column (1) by column (2). Using this ratio it is clear that the only policy change that has a cost/benefit ratio greater than 1 (actually it is 1.05) is the corporate tax cut under accommodating policy. But even so, under this assumption about monetary policy, the other investment incentives have cost/benefit ratios ranging from about 0.85 in the case of the increased investment tax credit to a little over 0.7 in the case of the increased tax depreciation. All of these values are appreciably higher than those reported in previous econometric studies. On the other hand, under nonaccommodating monetary policy the corresponding cost/benefit ratios for these three investment incentives are 0.5, 30, 0.33, and 0.25, respectively, and these values are more in line with econometric estimates reported by Matziorinis.[3] Thus, except for the corporate tax cut under accommodating monetary policy, the use of the above cost/benefit ratio would lead us to conclude that the investment incentives are not effective even though each of these is clearly more effective than any of the other two policy changes (which should not be expected to increase investment as much as the investment incentive anyway).

Table 6-8

Accumulated Business Fixed Investment, Government Revenue Loss, Government Deficit, and Retained Earnings under Various Policy Changes

	Accumulated, 1980-85					
	Investment (1)	Federal revenue loss (2)	Net revenue loss or gain* (3)	Federal deficit (4)	Federal and provincial deficit (5)	Retained earnings (6)
	($ Millions)					
Policy changes						
Under accommodating monetary policy:						
Corporate tax cut	7,559	-7,172	-2,998	-6,130	-4,617	5,610
Increased investment tax credit	6,668	-7,853	-4,051	-6,929	-5,459	6,581
Increased tax depreciation	5,628	-7,885**	-4,745	-4,689	-5,506	5,617
Under nonaccommodating monetary policy:						
Corporate tax cut	4,012	-7,954	-843	-12,650	-10,213	3,507
Increased investment tax cut	2,919	-8,790	-1,702	-14,045	-11,556	4,474
Increased tax depreciation	2,243	-9,088**	-2,735	-10,969	-10,909	3,670
Personal tax cut	147	-3,272	453	-9,850	-7,776	-312
Federal manufacturers' sales tax cut	-430	-8,220	-4,108	-10,583	-7,663	-175

* That is, net loss or gain in total personal, corporate, and indirect taxes.
** Both federal and provincial corporate taxes.

It would appear, however, that a much more meaningful cost/benefit ratio would be that of accumulated business fixed investment divided by accumulated net revenue loss – that is, column (1) divided by column (3). When effectiveness is so defined it is clear that in all cases (except that of increased tax depreciation under nonaccommodating monetary policy) the investment incentives have cost/benefit ratios well in excess of 1. For example, the corporate tax cut under accommodating monetary policy would have a cost/benefit ratio of about 2.5; under nonaccommodating monetary policy, the ratio would be about 4.75! The fact that with this apparently more meaningful definition of the cost/benefit ratio a higher ratio is obtained for the corporate tax cut under nonaccommodating than under accommodating monetary policy only serves, however, to emphasize the inadequacy of relying heavily on these kinds of cost/benefit ratios when assessing the benefits and costs associated with a policy change. For, in spite of obtaining a higher ratio for the corporate tax cut under nonaccommodating monetary policy, we have seen, on the basis of our detailed general equilibrium analysis, that in terms of overall benefits and costs the corporate tax cut is much more effective under accommodating than under nonaccommodating monetary policy. Again, using this second cost/benefit ratio, the personal income tax cut yields a positive net gain in revenue; in spite of this, however, this policy is clearly less cost-effective than the corporate tax cut and the increased investment tax credit under nonaccommodating monetary policy.

Given that the investment incentives produce large increases in retained earnings, it would also appear useful to incorporate this variable into a cost/benefit ratio. (Although retained earnings do not appear as an explanatory variable in the CANDIDE 2.0 investment equation, they could conceivably have an important bearing on investment, at least in some industries.) If this were done, we would obtain a third ratio defined as column (1) plus column (6) divided by column (2), and a fourth ratio defined as column (1) plus column (6) divided by column (3).

Also, instead of using accumulated federal revenue loss or net revenue loss in the denominator of the cost/benefit ratios defined above, we could use accumulated federal deficit or federal plus provincial deficit.

Three findings then emerge upon examining the usual cost/benefit ratio and the alternatives proposed. First, the alternative ratios yield values that are generally greater than 1 in the case of the investment incentives under accommodating monetary policy, and they yield much higher values than those yielded by the ratio usually used in the literature. Second, regardless of which ratio is used, the corporate tax cut and the increased tax credit yield higher values than the other policy changes. Third, regardless of which ratio is used, the most cost-effective of the investment incentives is the corporate tax cut, followed by the increased investment tax credit.

Our results suggest that the much lower cost/benefit ratios for the investment incentives obtained in previous econometric studies reported in the literature may have been due to one or more of the following: the definition of effectiveness used, the quality of the estimates used in calculating the ratios, and the possibility that the incentives may have been operating under unfavourable conditions (such as restrictive monetary policy) which could reduce their effectiveness.

On the basis of the cost/benefit ratios we have obtained, we would have to conclude that at least two of the three investment incentives under study could be made to generate investment well in excess of the revenue loss(es) involved. Further, on the basis of our more detailed general equilibrium analysis, it seems very clear that these two investment incentives could be used to increase growth and reduce inflation in the Canadian economy. And, in the present circumstances, both of these benefits would have to be weighted very highly and both would appear to outweigh all the costs involved in the use of these investment incentives.

7 Summary and Policy Implications

The results we have obtained indicate that, over the simulation period 1980-85, two of the investment incentives – the corporate tax cut and the increased investment tax credit, particularly the former – produce a more satisfactory performance with regard to the growth of investment, GNE, and employment and to the control of inflation than any of the other policy changes considered except reduction of the manufacturers' sales tax.

While by the end of the simulation period all the policy changes lead to a deterioration in the current account balance, the investment incentives generally produce the greatest deterioration. Similarly, the investment incentives generally lead to the largest increases in federal deficits (and, except in the case of the manufacturers' sales tax cut, the largest increases in provincial surpluses), debt, and interest payments.

The investment incentives are clearly the most effective of the policy changes in increasing business investment and retained earnings in relation to revenue losses. In particular, the corporate tax cut, followed by the increased investment tax credit, both generally produce much higher benefit/cost ratios than all the other policy changes. Furthermore, they compare favourably with all the other policy changes in terms of their effect on personal savings; like all those other policy changes, however, they result in a noticeable increase in federal dissavings and in provincial as well as foreign savings, the latter of which contribute to the deterioration in the balance of payments. Nevertheless, they contribute more than any of the other policy changes to increasing the percentage of business savings, as is also evidenced by the large increase in retained earnings to which they give rise. In short, the investment incentives produce the best distribution of personal savings and of business investment and savings.

Under accommodating monetary policy the investment incentives produce more growth, less inflation, smaller current account deficits, and smaller federal deficits, debt, and interest payments than they do under nonaccommodating monetary policy. Indeed, with very few exceptions, the investment incentives produce much better results under accommodating monetary policy, clearly indicating that a very restrictive monetary policy tends to nullify the effectiveness of these investment incentives.

In our evaluation of the above results we have issued a couple of caveats. First, the use of most likely depreciation rules is likely to have resulted in an understatement of the effects of the policy change involving increased tax depreciation. Second, the large reductions in prices that occur in the case of the manufacturers' sales tax cut are likely to be overstated, since, in the real world, it is unlikely that producers would pass on all of these price reductions to consumers.

Given these results and the above caveats, and given that the Canadian economy is currently suffering from an unprecedented slowdown in productivity growth; no, slow, or negative, growth of GNE; double-digit inflation and very high interest rates (until quite recently); high unemployment; and large balance-of-payment and government deficits;[1] and given that most of these problems could remain with us over the next few years, what are the implications of using investment incentives to produce a more satisfactory performance by the Canadian economy?

Since there is a clear need to develop policies that can deal effectively with the problem of stagflation and since our results clearly indicate that at least two of the investment incentives could improve growth and reduce inflation, it appears that a good case could be made for using a corporate tax cut and increased investment tax credits to help deal with the problem of stagflation. But it also appears that the investment incentives could be made more effective generally if they were applied selectively, if the tax system were modified, or if other changes were made to enhance their effectiveness, and if they were supplemented by other policies that could help to reduce inflation, interest rates, the current account deficits, and federal government debt and interest payments.

First, the investment incentives should be used to help increase productivity, the negative growth of which is the key problem currently underlying all of Canada's major economic problems – slow or negative growth of GNE, unemployment, inflation, large balance-of-payment deficits, and large federal deficits. Although the investment incentives under accommodating monetary policy produced only small increases in productivity (and this should not be too surprising given that the fiscal policy changes were designed to result in only a $1-billion loss of revenue during the first year of the simulation period), they can clearly be used to increase productivity. Furthermore, it appears that they can be made more effective in doing so if they are applied in the industries where they will produce the largest increases in productivity. We have found that the effects of increased investment incentives on the productivity of labour and capital vary considerably from industry to industry and that the increased investment tax credit is particularly effective in increasing both types of productivity.[2] So, efforts should be made to carefully identify those industries in which increased investment tax credit and corporate tax cuts are likely to produce the highest increases in productivity,[3] and the size of the incentives given to these industries should be increased since it is likely that increases larger than those designed in this study would be required to produce very satisfactory increases in productivity.[4]

Second, attempts should also be made to modify the Canadian tax system so as to make the investment incentives more effective. For example, the Canadian investment tax credit regulation should be made similar to that in the United States where firms are not required to deduct the investment tax credit from the value of the assets to which they apply, before calculating depreciation. Jorgenson[5] has calculated that the Long Amendment, which existed in the United States between 1962 and 1964 and which is similar to the existing Canadian regulation, reduced the effective tax credit rate by at least 1.5 percentage points. Similarly, consideration should also be given to indexing capital cost allowances, since in the present high inflationary situation this might well increase the effectiveness of increased tax depreciation.[6]

Third, although the large reductions in prices that occur in the case of the manufacturers' sales tax cut seem to be overstated, the favourable results produced by this policy change are certainly indicative of the kind of improvements that could be achieved in inflation, growth, the balance of payments (specific trade policies, like increased productivity and lower prices and wages, could certainly make our exports more competitive and thus improve our balance of payments; but such trade policies could not be discussed here), and a number of other key economic variables if there were such large decreases in prices. So, in addition to reducing inflation through the investment incentives, which, it may be recalled, reduce inflation for only part of the simulation period, efforts should be made to ensure that reductions in the rate of price increases are more widespread and prolonged. And, failing the imposition of some form of wage and price control, which the author feels should be a last resort, it would appear that this would require a considerable increase in co-operation between governments, labour, and business. For example, government could co-operate by slowing the rate of inflation in their wages and prices and by using moral suasion to slow the growth of wages and prices in the private sector; labour could co-operate by accepting lower wage and salary increases or by accepting wage and salary increases consistent with increases in labour productivity; and business could co-operate by ensuring that reductions in costs that result from steps taken by government and labour are translated into lower prices.

Fourth, to help the federal government reduce the relatively large deficits, debt, and interest payments to which the corporate tax cut and the increased investment tax credit give rise, it would appear that the federal government should reduce its expenditures and increase its revenues. Of course, if the federal government wanted to raise additional revenues, it might have to consider increasing selective indirect taxes and/or personal income taxes. But in the present circumstances an increase in personal income taxes should be a last resort, since it could adversely affect growth, inflation (by increasing tax-push inflation), and personal savings, in particular; and should personal income taxes be increased, it would appear that the indexing feature of the personal income tax system, even if modified, should be retained.[7]

Fifth, it is important that appropriate monetary policies be pursued. We have seen that the investment incentives produce much better results under accommodating monetary policy than they do under nonaccommodating monetary policy. Thus it would seem that the preferred policy is one in which the fiscal policy changes recommended above are supported by a monetary policy that is not too restrictive. This means that initially the growth in the money supply (M1) could be held at around the 8 per cent level,[8] but as the economy improved (as a consequence of the changes suggested), monetary policy should become less restrictive, provided, of course, that inflation continues to decline or remains acceptable.

If monetary policy is too restrictive, interest rates will tend to remain high,[9] and, as we have seen, this will nullify some of the beneficial impact that the investment incentives could have on lowering the user cost of capital and increasing investment. This will also have the effect of increasing federal deficits (especially as a result of increased employment benefits and federal interest payments), foreign savings, and the balance-of-payment deficits. And, although this is often overlooked, very high interest rates do result in generally higher costs and higher prices, so they are also inflationary.

Finally, in order to learn more about the effects of investment incentives on the Canadian economy, further work should be done to find ways in which the investment incentives – and, indeed, fiscal policy in general – could be made more effective. In doing this, we should analyse the effects of complete packages of fiscal, monetary, exchange rate, and other policies on the performance of the Canadian economy.[10] It cannot be overemphasized that unless this is done we cannot be very confident that policy changes, which individually appear to increase the effectiveness of the investment incentives or improve the performance of the Canadian economy, will indeed produce the desired effects when they are accompanied by one or more of the other policy changes that may be included in a complete policy package.[11]

Appendix A

The Ampersands (&) in Chart 3-1 of Chapter 3

The ampersands in Chart 3-1 of Chapter 3 are defined as follows:

Nonresidential construction - various industries

& = AGFTC, agriculture, fishing, and trapping
& = FSTYC31.9, forestry
& = MICLC61, coal mining
& = MIPC64+96.9, crude petroleum, natural gas, and services incidental to mining
& = MIMMC51.9, metal mining
& = MINMC71.8, nonmetal mining (excluding coal)
& = MFDC251.9, wood
& = MFDC261.8, furniture and fixtures
& = MFDC291.4, iron and steel
& = MFDC295.8, nonferrous metals
& = MFDC301.9, metal fabricating
& = MFDC311.8, machinery (excluding electrical)
& = MFDC321+326.9, nonautomotive transport equipment
& = MFDC323.4, motor vehicles (excluding parts and accessories)
& = MFDC331.9, electrical products
& = MFDC351.9, nonmetal mining products
& = MFNDC101.9, food and beverages
& = MFNDC151.3, tobacco products
& = MFNDC162.5, rubber and plastic products
& = MFNDC172.9, leather
& = MFNDC181.9, textiles
& = MFNDC231.9, knitting and clothing
& = MFNDC271.4, paper and allied industries
& = MFNDC286.9, printing, publishing, and allied industries
& = MFNDC365.9, petroleum and coal products
& = MFNDC372.9, chemicals and chemical products
& = MFNDC391.9, miscellaneous manufacturing
& = CNSTC, construction
& = TRSPC501.27, transport
& = COMMC543.8, communication
& = FIREC701.37, finance, insurance, and real estate
& = UTILC572.9, utilities
& = TRADC602.99, wholesale and retail trade
& = SVCMC, commercial services
& = SVNCC, other noncommercial services
& = SVHGEDC806, college and university education

Machinery and equipment - various industries

& = AGFTM, agriculture, fishing, and trapping
& = FSTYM31.9, forestry
& = MICLM61, coal mining
& = MIPM64+96.9, crude petroleum, natural gas, and services incidental to mining
& = MIMM51.9, metal mining
& = MINMM71.87, nonmetal mining
& = MFDM251.9, wood
& = MFDM261.8, furniture and fixtures
& = MFDM291.4, iron and steel
& = MFDM295.8, nonferrous metals
& = MFDM301.9, metal fabricating
& = MFDM311.8, machinery (excluding electrical)

& = MFDM321+326.9, nonautomotive transport equipment
& = MFDM323.4, motor vehicles (excluding parts and accessories)
& = MFDM325, motor vehicle parts and accessories
& = MFDM331.9, electrical products
& = MFDM351.9, nonmetal mining products
& = MFNDM101.9, food and beverages
& = MFNDM151.3, tobacco products
& = MFNDM162.5, rubber and plastic products
& = MFNDM172.9, leather
& = FMNDM181.9, textiles
& = MFNDM231.49, knitting and clothing
& = MFNDM271.4, paper and allied industries
& = MFNDM286.9, printing, publishing, and allied industries
& = MFNDM365.9, petroleum and coal products
& = MFNDM372.9, chemicals and chemical products
& = MFNDM391.9, miscellaneous manufacturing
& = CNSTM, construction
& = TRSPM501.27, communication
& = FIREM701.37, finance, insurance, and real estate
& = TRADM602.99, wholesale and retail trade
& = SVCMM, commercial services
& = SVNCM, other noncommercial services
& = SVHGEDM806, college and university education

Appendix B

Assumptions Underlying the Simulations

Solution 1:

Corporate Tax Cut (Accommodating Monetary Policy)

1	Multiply GTF.R.CORP by	0.8660			1980	1985
2	Multiply IET's by	0.9088			1980	1985

Solution 2:

Investment Tax Credit Increase (Accommodating Monetary Policy)

1	Multiply ITC's by	1.8			1980	1985
2	Adjust GRF.DT.CCRP$ by	-875.44	-1,045.4	-1,241.3	1980	1982
		-1,407.2	-1,564.5	-1,722.1	1983	1985

Solution 3:

Tax Depreciation Increase (Accommodating Monetary Policy)

1	Multiply ITD's by	1.27			1980	1985
2	Adjust GTF.V.PCT by	-2,359.	-3,039.	-3,386.	1980	1982
		-3,513.	-3,679.	-3,948.	1983	1985

Solution 4:

Corporate Tax Cut (Nonaccommodating Monetary Policy)

1	Multiply GTF.R.CORP by	0.8660			1980	1985
2	Multiply IET's by	0.9088			1980	1985
3	Exogenize FCURRENCY.PUBLIC FDEP.DDPUB.CB } = M1					
4	Adjust FRATE.FCPAPER3M	1.05454	1.67062	2.38251	1980	1982
		3.11336	3.90952	4.80295	1983	1985

Solution 5:

Tax Credit Increase (Nonaccommodating Monetary Policy)

1	Multiply ITC's by	1.8			1980	1985
2	Exogenize FCURRENCY.PUBLIC FDEP.DDPUB.CB } = M1					
3	Adjust GRF.DT.CCRP$	-875.77	-1,046.0	-1,241.0	1980	1982
		-1,408.1	-1,564.8	-1,725.6	1983	1985
4	Adjust FRATE.FCPAPER3M	1.07631	1.69831	2.41983	1980	1982
		3.22221	4.16143	5.35567	1983	1985

Solution 6:

Tax Depreciation Increase (Nonaccommodating Monetary Policy)

1	Multiply ITD's by	1.27			1981	1985
2	Exogenize FCURRENCY.PUBLIC FDEP.DDPUB.CB } = M1					
3	Adjust GTF.V.PCT	-2,359.	-3,099.	-3,386.	1980	1982
		-3,513.	-3,679.	-3,948.	1983	1985
4	Adjust FRATE.FCPAPER3M	1.01441	1.58946	2.27366	1980	1982
		3.00762	3.81622	4.79276	1983	1985

Solution 7:

Personal Income Tax Cut (Nonaccommodating Monetary Policy)

1	Assume GT.T.REDMIN	0.30			1980	1985
2	Assume GR.R.YREDI	-0.11			1980	1985
3	Exogenize FCURRENCY.PUBLIC FDEP.DDPUB.CB } = M1					
4	Adjust FRATE.FCPAPER3M	0.98923	1.44018	1.95022	1980	1982
		2.48514	3.10092	3.85976	1983	1985

Solution 8:

Manufacturers' Sales Tax Cut (Nonaccommodating Monetary Policy)

1	Assume GTF.R.MSC	0.06048			1980	1985
2	Exogenize FCURRENCY.PUBLIC FDEP.DDPUB.CB } = M1					
3	Adjust FRATE.FCPAPER3M	1.14162	1.73874	2.30476	1980	1982
		2.79925	2.20355	3.82555	1983	1985

Appendix C

Comparative Effects of Policy Changes

(Reproduction of original computer print-outs;
tables have been renumbered to conform to the text.)

Table C-1

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		GROSS NATIONAL EXPENDITURE (GNE)						
3								
4	GNE	CONTROL (FORE.CAND17885)----------	135830.	141128.	145230.	148930.	153805.	159366.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	121.	433.	726.	1061.	1188.	1307.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	197.	478.	712.	898.	1042.	1173.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	72.	330.	474.	652.	702.	813.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	137.	367.	470.	593.	417.	161.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	212.	407.	481.	402.	222.	-50.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	87.	272.	272.	203.	-51.	-311.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	349.	346.	394.	328.	145.	-44.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	478.	888.	872.	833.	778.	720.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.1	0.3	0.5	0.7	0.8	0.8
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.3	0.5	0.6	0.7	0.7
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	0.2	0.3	0.4	0.5	0.5
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.1	0.3	0.3	0.4	0.3	0.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.2	0.3	0.3	0.3	0.1	-0.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.1	0.2	0.2	0.1	-0.0	-0.2
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.3	0.2	0.3	0.2	0.1	-0.0
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.4	0.6	0.6	0.6	0.5	0.5
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		INV BUS NONRES CONSTR NATIONAL ACCTS (IBNACO)						
3								
4	IBNACO	CONTROL (FORE.CAND17885)----------	9073.	9693.	10269.	10792.	11366.	11892.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	30.	94.	183.	326.	364.	326.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	32.	91.	153.	200.	223.	215.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	22.	67.	124.	204.	226.	203.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	30.	84.	142.	225.	173.	21.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	32.	81.	112.	97.	23.	-106.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	23.	59.	88.	113.	44.	-93.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	19.	42.	35.	12.	-54.	-145.
21	SHK1-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	9.	62.	89.	77.	24.	-54.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.3	1.0	1.8	3.0	3.2	2.7
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.4	0.9	1.5	1.8	2.0	1.8
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.2	0.7	1.2	1.9	2.0	1.7
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	0.9	1.4	2.1	1.5	0.2
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.4	0.8	1.1	0.9	0.2	-0.9
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.2	0.6	0.9	1.0	0.4	-0.8
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.2	0.4	0.3	0.1	-0.5	-1.2
42	PSHK1-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.1	0.6	0.9	0.7	0.2	-0.5
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.60~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		INV BUS MACH&EQUIP NATIONAL ACCTS (IBNAM)						
3								
4	IBNAM	CONTROL (FORE.CAND1785)----------	10778.	11423.	11338.	11406.	11824.	12548.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	32.	210.	249.	318.	346.	338.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	76.	184.	286.	361.	402.	396.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	32.	223.	232.	272.	291.	286.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	29.	183.	165.	143.	49.	-105.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	72.	155.	198.	170.	83.	-88.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	29.	200.	156.	101.	4.	-150.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	23.	37.	10.	-35.	-123.	-226.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	33.	138.	101.	61.	-10.	-119.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.3	1.8	2.2	2.8	2.9	2.7
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.7	1.6	2.5	3.2	3.4	3.2
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.3	2.0	2.0	2.4	2.5	2.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	1.6	1.5	1.3	0.4	-0.8
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.7	1.4	1.7	1.5	0.7	-0.7
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.3	1.7	1.4	0.9	0.0	-1.2
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.2	0.3	0.1	-0.3	-1.0	-1.8
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.3	1.2	0.9	0.5	-0.1	-0.9
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		INV MANUF NONRES CONSTR (IMFC)						
3								
4	IMFC	CONTROL (FORE.CAND17885)----------	1127.	1290.	1536.	1746.	1835.	1856.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	1.	11.	28.	40.	52.	62.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	1.	12.	35.	53.	69.	78.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	1.	6.	17.	25.	32.	39.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	2.	11.	25.	30.	31.	25.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	1.	12.	32.	43.	47.	38.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	1.	6.	15.	16.	13.	3.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	2.	6.	10.	11.	5.	-7.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.	8.	26.	35.	34.	24.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.1	0.8	1.8	2.3	2.8	3.3
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.9	2.3	3.0	3.7	4.2
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	0.5	1.1	1.4	1.8	2.1
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.2	0.8	1.6	1.7	1.7	1.3
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.1	0.9	2.1	2.5	2.5	2.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.1	0.5	1.0	0.9	0.7	0.2
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.5	0.6	0.6	0.3	-0.4
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.0	0.7	1.7	2.0	1.9	1.3
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		INV MANUF MACH&EQUIP (IMFM)						
3								
4	IMFM	CONTROL (FORE.CANDI7885)----------	3053.	3393.	3790.	4125.	4356.	4581.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	8.	26.	46.	62.	72.	71.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	32.	90.	152.	189.	220.	215.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	7.	23.	41.	53.	60.	58.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	7.	18.	23.	12.	-14.	-60.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	30.	82.	126.	134.	125.	68.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	6.	17.	20.	6.	-22.	-69.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	4.	4.	-5.	-22.	-50.	-83.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	6.	22.	26.	13.	-10.	-48.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.3	0.8	1.2	1.5	1.7	1.6
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	1.0	2.7	4.0	4.6	5.1	4.7
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.2	0.7	1.1	1.3	1.4	1.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.2	0.5	0.6	0.3	-0.3	-1.3
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	1.0	2.4	3.3	3.3	2.9	1.5
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.2	0.5	0.5	0.2	-0.5	-1.5
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.1	-0.1	-0.5	-1.1	-1.8
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.2	0.7	0.7	0.3	-0.2	-1.0
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.09~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	ITEM	1980	1981	1982	1983	1984	1985
1								
2		GROSS FIXED CAPITAL FORMATION-BUSINESS (GFC.B)						
3								
4	GFC.B	CONTROL (FORE.CAND17885)----------	25252.	26757.	27469.	28062.	29339.	30767.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	83.	348.	489.	713.	789.	753.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	129.	327.	517.	653.	729.	731.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)----------	71.	332.	413.	548.	598.	580.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	76.	279.	296.	338.	179.	-142.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	121.	254.	324.	260.	82.	-234.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	66.	270.	243.	194.	10.	-295.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	61.	94.	49.	-34.	-202.	-407.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	71.	235.	224.	156.	20.	-172.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.3	1.3	1.8	2.5	2.7	2.4
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.5	1.2	1.9	2.3	2.5	2.4
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)----------	0.3	1.2	1.5	2.0	2.0	1.9
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	1.0	1.1	1.2	0.6	-0.5
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.5	0.9	1.2	0.9	0.3	-0.8
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.3	1.0	0.9	0.7	0.0	-1.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.2	0.4	0.2	-0.1	-0.7	-1.3
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.3	0.9	0.8	0.6	0.1	-0.6
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		RES CONSTR INV BUS NATIONAL ACCTS (RCINAB)						
3								
4	RCINAB	CONTROL (FORE.CAND17885)----------	5400.	5641.	5862.	5864.	6149.	6327.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	20.	45.	57.	69.	79.	89.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	22.	52.	77.	93.	105.	119.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	17.	41.	58.	72.	81.	91.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	16.	12.	-12.	-30.	-43.	-57.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	17.	18.	13.	-7.	-25.	-40.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	14.	12.	-0.	-20.	-37.	-53.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	19.	15.	3.	-11.	-26.	-36.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	29.	34.	34.	18.	7.	2.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.4	0.8	1.0	1.2	1.3	1.4
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.4	0.9	1.3	1.6	1.7	1.9
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.3	0.7	1.0	1.2	1.3	1.4
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	0.2	-0.2	-0.5	-0.7	-0.9
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.3	0.3	0.2	-0.1	-0.4	-0.6
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.3	0.2	-0.0	-0.3	-0.6	-0.8
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.4	0.3	0.1	-0.2	-0.4	-0.6
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.5	0.6	0.6	0.3	0.1	0.0
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		MORTGAGE APPROVALS BY TRUSTEMTGE CO (FMAP.TOT)						
3								
4	FMAP.TOT	CONTROL (FORE.CAND17885)----------	17739.	20183.	22588.	24759.	27097.	29721.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	151.	321.	458.	558.	681.	862.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	157.	322.	465.	595.	759.	992.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	133.	293.	433.	541.	666.	840.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	132.	201.	261.	326.	486.	722.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	136.	200.	296.	352.	542.	833.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	117.	182.	279.	312.	460.	688.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	114.	159.	205.	266.	374.	582.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	136.	152.	203.	210.	324.	534.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.9	1.6	2.0	2.3	2.5	2.9
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.9	1.6	2.1	2.4	2.8	3.3
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.7	1.4	1.9	2.2	2.5	2.8
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.7	1.0	1.2	1.3	1.8	2.4
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.8	1.0	1.3	1.4	2.0	2.8
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.7	0.9	1.2	1.3	1.7	2.3
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.6	0.8	0.9	1.1	1.4	2.0
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.8	0.8	0.9	0.8	1.2	1.8
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		CONSUMER EXPENDITURE (C)						
3								
4	C	CONTROL (FORE.CAND17885)----------	86291.	89410.	92371.	94956.	98288.	101805.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	165.	350.	572.	766.	900.	1080.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	201.	334.	488.	612.	750.	935.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	117.	266.	393.	511.	594.	742.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	213.	428.	634.	847.	959.	1108.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	251.	412.	568.	699.	812.	993.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	160.	340.	468.	591.	642.	769.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	496.	549.	737.	827.	895.	963.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	717.	796.	966.	999.	1132.	1277.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.2	0.4	0.6	0.8	0.9	1.1
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.2	0.4	0.5	0.6	0.8	0.9
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	0.3	0.4	0.5	0.6	0.7
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.2	0.5	0.7	0.9	1.0	1.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.3	0.5	0.6	0.7	0.8	1.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.2	0.4	0.5	0.6	0.7	0.8
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.6	0.6	0.8	0.9	0.9	0.9
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.8	0.9	1.0	1.1	1.2	1.3
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.03~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PERSONAL INCOME (PY$)						
3								
4	PY$	CONTROL (FCRE.CANDI7885)----------	236661.	264043.	293368.	323213.	356495.	392920.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	297.	614.	1076.	1959.	3142.	4591.
12	SHKI-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	126.	346.	885.	1808.	3104.	4683.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FCRE.TAXDEPR2)---------	205.	494.	866.	1565.	2504.	3705.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	601.	1384.	2372.	3942.	6136.	9176.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	448.	1139.	2271.	3937.	6426.	9937.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	477.	1206.	2143.	3505.	5447.	8218.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	523.	1171.	2227.	3517.	5245.	7614.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-18.	-75.	413.	1328.	2869.	5168.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.1	0.2	0.4	0.6	0.9	1.2
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.1	0.3	0.6	0.9	1.2
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FCRE.TAXDEPR2)---------	0.1	0.2	0.3	0.5	0.7	0.9
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	0.5	0.8	1.2	1.7	2.3
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.2	0.4	0.8	1.2	1.8	2.5
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.2	0.5	0.7	1.1	1.5	2.1
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.2	0.4	0.8	1.1	1.5	1.9
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.0	-0.0	0.1	0.4	0.8	1.3
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PERS INCOME TAXES/PERS INCOME (GR.DT.RATE * 100.)						
3								
4	GR.DT.RATEX100	CONTROL (FORE.CAND17885)----------	12.88	13.15	13.35	13.63	13.90	14.21
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.01	-0.01	0.01	0.04	0.06	0.09
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.01	-0.00	0.01	0.04	0.06	0.09
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.01	-0.01	0.01	0.03	0.06	0.08
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.01	0.04	0.09	0.13	0.18	0.25
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.01	0.05	0.09	0.14	0.19	0.27
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.01	0.04	0.08	0.12	0.17	0.23
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.40	-0.34	-0.27	-0.22	-0.15	-0.08
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.03	0.10	0.12	0.17	0.20	0.25
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.1	-0.1	0.1	0.3	0.5	0.6
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.1	-0.0	0.1	0.3	0.5	0.6
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.1	-0.0	0.1	0.3	0.4	0.6
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.1	0.3	0.7	1.0	1.3	1.7
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	0.3	0.6	1.0	1.4	1.9
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.1	0.3	0.6	0.9	1.2	1.6
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-3.1	-2.6	-2.1	-1.6	-1.1	-0.6
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.2	0.7	0.9	1.2	1.4	1.7
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 05.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	ITEM	1980	1981	1982	1983	1984	1985
1								
2		PERSONAL DISPOSABLE INCOME (PDY$)						
3								
4	PDY$	CONTROL (FORE.CANDI7885)----------	192492.	213829.	236735.	259423.	284832.	312387.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	301.	566.	904.	1550.	2430.	3491.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	164.	325.	745.	1437.	2412.	3578.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	217.	462.	732.	1233.	1919.	2795.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	518.	1118.	1820.	2983.	4624.	6861.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	394.	893.	1736.	2984.	4844.	7435.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	411.	973.	1645.	2643.	4076.	6116.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	1408.	1926.	2745.	3735.	5034.	6792.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-46.	-282.	87.	733.	1894.	3581.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.2	0.3	0.4	0.6	0.9	1.1
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.2	0.3	0.6	0.8	1.1
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	0.2	0.3	0.5	0.7	0.9
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	0.5	0.8	1.1	1.5	2.2
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.2	0.4	0.7	1.2	1.7	2.4
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.2	0.5	0.7	1.0	1.4	2.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.7	0.9	1.2	1.4	1.8	2.2
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.0	-0.1	0.0	0.3	0.7	1.1
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		REAL DISPOSABLE INCOME (PDY$ / CPI)						
3								
4	PDY$/CPI	CONTROL (FORE.CAN017885)----------	94624.	96714.	99700.	102010.	105114.	108757.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	198.	358.	554.	710.	872.	1053.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	299.	430.	601.	734.	922.	1131.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	180.	324.	466.	574.	696.	857.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	294.	560.	829.	1054.	1303.	1626.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	401.	637.	882.	1105.	1402.	1810.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	266.	513.	726.	912.	1115.	1424.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	687.	815.	979.	1115.	1299.	1509.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1066.	1106.	1362.	1432.	1710.	2029.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.2	0.4	0.6	0.7	0.8	1.0
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.3	0.4	0.6	0.7	0.9	1.0
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.2	0.3	0.5	0.6	0.7	0.8
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	0.6	0.8	1.0	1.2	1.5
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.4	0.7	0.9	1.1	1.3	1.7
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.3	0.5	0.7	0.9	1.1	1.3
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.7	0.8	1.0	1.1	1.2	1.4
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1.1	1.1	1.4	1.4	1.6	1.9
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		INTEREST INCOME - PERSONS (Y.INT.PRSN$)						
3								
4	Y.INT.PRSN$	CONTROL (FORE.CAND17885)----------	19979.	22209.	24202.	25288.	26464.	27879.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	103.	202.	297.	393.	533.	723.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	97.	188.	292.	424.	610.	837.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	84.	173.	268.	364.	495.	660.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	368.	922.	1701.	2679.	4016.	5871.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	379.	928.	1743.	2827.	4382.	6583.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	319.	834.	1592.	2547.	3868.	5678.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	299.	713.	1305.	2055.	3075.	4475.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	382.	801.	1398.	2127.	3053.	4417.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.5	0.9	1.2	1.6	2.0	2.6
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.5	0.8	1.2	1.7	2.3	3.0
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.4	0.8	1.1	1.4	1.9	2.4
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	1.8	4.2	7.0	10.6	15.2	21.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	1.9	4.2	7.2	11.2	16.6	23.6
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	1.6	3.8	6.6	10.1	14.6	20.4
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	1.5	3.2	5.4	8.1	11.6	16.1
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1.9	3.6	5.8	8.4	11.5	15.8
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		EXPORTS MINUS IMPORTS (TEG+SNAW - TMG+SNAW)						
3								
4	EXP-IMP	CONTROL (FORE.CAND17885)----------	-4302.	-4884.	-4548.	-4445.	-4671.	-4786.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-60.	-210.	-297.	-414.	-489.	-528.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-62.	-171.	-267.	-346.	-412.	-479.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-48.	-207.	-266.	-357.	-430.	-470.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-88.	-290.	-414.	-587.	-709.	-811.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-91.	-252.	-390.	-521.	-646.	-796.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-72.	-281.	-379.	-519.	-639.	-741.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-176.	-249.	-350.	-431.	-506.	-603.
21	SHK1-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-192.	-385.	-353.	-373.	-422.	-495.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	1.4	4.3	6.5	9.3	10.5	11.0
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	1.4	3.5	5.9	7.8	8.8	10.0
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	1.1	4.2	5.8	8.0	9.2	9.8
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	2.0	5.9	9.1	13.2	15.2	16.9
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	2.1	5.2	8.6	11.7	13.6	16.6
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	1.7	5.7	8.3	11.7	13.7	15.5
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	4.1	5.1	7.7	9.7	10.8	12.6
42	PSHK1-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	4.5	7.9	7.8	8.4	9.0	10.3
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		TOTAL GOVT EXPEND-CURRENT GOODS&SERV (GE.CGS)						
3								
4	GE.CGS	CONTROL (FORE.CAND17885)----------	23342.	23790.	24191.	24605.	25054.	25534.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-82.	-116.	-106.	-90.	-68.	-46.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-83.	-104.	-104.	-99.	-85.	-75.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-78.	-117.	-114.	-101.	-83.	-73.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-75.	-101.	-79.	-52.	-13.	35.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-76.	-90.	-76.	-61.	-27.	12.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-72.	-105.	-89.	-67.	-32.	2.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-74.	-81.	-54.	-38.	-17.	23.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-87.	-36.	-2.	27.	49.	86.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.4	-0.5	-0.4	-0.4	-0.3	-0.2
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.3	-0.5	-0.5	-0.4	-0.3	-0.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.3	-0.4	-0.3	-0.2	-0.1	0.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.3	-0.4	-0.3	-0.2	-0.1	0.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.3	-0.4	-0.4	-0.3	-0.1	0.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.3	-0.3	-0.2	-0.2	-0.1	0.1
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.4	-0.2	-0.0	0.1	0.2	0.3
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 05.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		GOVT EXPEND - TRANSFERS TO PERSONS (GE.TPE$)						
3								
4	GE.TPE$	CONTROL (FORE.CAN017885)----------	29966.	32619.	36016.	39748.	44072.	48573.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-14.	-78.	-130.	-191.	-143.	-43.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-18.	-106.	-160.	-183.	-111.	-14.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-29.	-95.	-139.	-166.	-105.	-26.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-18.	-68.	-108.	-159.	-88.	73.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-22.	-96.	-144.	-145.	-46.	121.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-34.	-86.	-124.	-131.	-45.	98.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-56.	-42.	-9.	24.	110.	260.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-66.	-347.	-449.	-529.	-514.	-422.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	-0.2	-0.4	-0.5	-0.3	-0.1
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.1	-0.3	-0.4	-0.5	-0.3	-0.0
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.1	-0.3	-0.4	-0.4	-0.2	-0.1
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.1	-0.2	-0.3	-0.4	-0.2	0.2
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.1	-0.3	-0.4	-0.4	-0.1	0.2
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.1	-0.3	-0.3	-0.3	-0.1	0.2
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.2	-0.1	-0.0	0.1	0.3	0.5
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.2	-1.1	-1.2	-1.3	-1.2	-0.9
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		TOTAL LABOUR FORCE (DTOTLF)						
3								
4	DTOTLF	CONTROL (FORE.CAND178E5)----------	11003.	11179.	11376.	11559.	11782.	12012.
5								
6								
7		SHOCK - CENTREL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	1.	3.	7.	11.	17.	23.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	4.	6.	10.	11.	16.	22.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	1.	2.	6.	9.	13.	18.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	1.	2.	3.	2.	1.	-1.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	4.	5.	5.	1.	-1.	-3.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	1.	2.	2.	-0.	-3.	-5.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	8.	13.	18.	14.	13.	11.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	20.	20.	27.	17.	18.	18.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	0.0	0.1	0.1	0.1	0.2
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	0.0	0.1	0.1	0.1	0.2
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	0.0	0.1	0.1	0.1	0.1
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.0	0.0	0.0	0.0	0.0	-0.0
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	0.0	0.0	0.0	-0.0	-0.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.0	0.0	0.0	-0.0	-0.0	-0.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.1	0.2	0.1	0.1	0.1
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.2	0.2	0.2	0.1	0.1	0.2
43								
44								
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Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		TOTAL EMPLOYMENT (NE)						
3								
4	NE	CONTROL (FORE.CAND17885)----------	10178.	10465.	10684.	10872.	11074.	11295.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	3.	12.	22.	36.	42.	46.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	3.	14.	24.	32.	37.	42.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.	8.	14.	22.	25.	29.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	5.	13.	20.	31.	33.	32.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	5.	14.	23.	27.	28.	27.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	2.	9.	14.	18.	17.	15.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	19.	23.	31.	31.	31.	28.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	10.	35.	46.	47.	51.	51.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	0.1	0.2	0.3	0.4	0.4
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	0.1	0.2	0.3	0.3	0.4
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	0.1	0.1	0.2	0.2	0.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.0	0.1	0.2	0.3	0.3	0.3
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	0.1	0.2	0.3	0.2	0.2
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.0	0.1	0.1	0.2	0.2	0.1
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.2	0.2	0.3	0.3	0.3	0.2
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.1	0.3	0.4	0.4	0.5	0.5
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.09~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		UNEMPLOYMENT RATE (DURATE)						
3								
4	DURATE	CONTROL (FORE.CANDI7885)----------	7.50	6.39	6.09	5.95	6.01	5.97
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.02	-0.09	-0.13	-0.22	-0.22	-0.21
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.01	-0.08	-0.13	-0.18	-0.18	-0.17
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.01	-0.05	-0.08	-0.12	-0.11	-0.10
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.03	-0.10	-0.15	-0.26	-0.27	-0.27
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.00	-0.09	-0.15	-0.23	-0.24	-0.24
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.00	-0.07	-0.10	-0.16	-0.16	-0.16
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.10	-0.10	-0.12	-0.15	-0.15	-0.14
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.08	-0.15	-0.17	-0.27	-0.29	-0.28
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.2	-1.3	-2.2	-3.6	-3.6	-3.4
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	-1.2	-2.1	-3.1	-3.0	-2.9
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	-0.8	-1.3	-2.1	-1.8	-1.8
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.3	-1.6	-2.5	-4.3	-4.5	-4.5
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.0	-1.4	-2.5	-3.8	-4.0	-4.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.0	-1.1	-1.7	-2.7	-2.7	-2.7
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-1.3	-1.6	-1.9	-2.5	-2.6	-2.4
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1.0	-2.4	-2.8	-4.6	-4.8	-4.7
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		OUTPUT PER MANHOUR (GNE / ME)						
3								
4	GNE/ME	CONTROL (FORE.CANDI7885)----------	7.36	7.42	7.50	7.58	7.72	7.87
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.01	0.01	0.02	0.03	0.03	0.04
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.01	0.02	0.02	0.03	0.03	0.04
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.00	0.01	0.02	0.02	0.02	0.03
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.00	0.01	0.01	0.01	-0.01	-0.02
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.01	0.01	0.01	-0.00	-0.01	-0.03
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.00	0.01	0.00	-0.00	-0.02	-0.03
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.01	0.01	0.00	-0.00	-0.01	-0.02
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.03	0.03	0.02	0.01	0.01	0.00
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.1	0.2	0.3	0.4	0.4	0.5
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.2	0.2	0.3	0.3	0.4	0.5
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	0.2	0.2	0.3	0.3	0.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.1	0.1	0.1	0.1	-0.1	-0.2
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.1	0.2	0.1	-0.0	-0.1	-0.3
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.1	0.1	0.0	-0.1	-0.2	-0.4
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.1	0.0	-0.0	-0.2	-0.3
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.4	0.4	0.2	0.1	0.1	0.0
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		CORPORATE PROFITS BEFORE TAXES (Y.PROFBT.CORP$)						
3								
4	Y.PROFBT.CORP$	CONTROL (FORE.CAN017885)----------	31478.	37573.	38352.	40679.	44562.	48662.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	1.	274.	304.	568.	365.	83.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-129.	403.	534.	678.	566.	354.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-60.	221.	171.	313.	115.	-66.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-85.	13.	-249.	-158.	-659.	-1307.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-222.	136.	72.	-125.	-524.	-1136.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-137.	-18.	-253.	-428.	-889.	-1443.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	269.	212.	207.	115.	-314.	-525.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1068.	600.	176.	440.	94.	-55.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	P SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	0.7	0.8	1.4	0.8	0.2
33	P SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.4	1.1	1.4	1.7	1.3	0.7
34	P SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.2	0.6	0.4	0.8	0.3	-0.1
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	P SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.3	0.0	-0.6	-0.4	-1.5	-2.7
39	P SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.7	0.4	0.2	-0.3	-1.2	-2.3
40	P SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.4	-0.0	-0.7	-1.1	-2.0	-3.0
41	P SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.9	0.6	0.5	0.3	-0.7	-1.1
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-3.4	1.6	0.5	1.1	0.2	-0.1
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		AVGE HOURLY EARNINGS - TOTAL ECONOMY (W)						
3								
4	W	CONTROL (FORE.CANDI7885)----------	8.92	9.66	10.61	11.61	12.70	13.86
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.00	-0.00	0.01	0.04	0.08	0.13
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.00	-0.01	0.00	0.03	0.07	0.12
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)----------	-0.00	-0.00	0.01	0.03	0.06	0.10
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.00	-0.00	0.00	0.01	0.04	0.09
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.00	-0.01	-0.01	0.00	0.03	0.08
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.00	-0.00	-0.00	0.01	0.03	0.06
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.00	0.00	0.01	0.03	0.06	0.09
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.00	-0.06	-0.07	-0.08	-0.05	-0.02
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	-0.0	0.1	0.3	0.6	1.0
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	-0.1	0.0	0.2	0.6	0.9
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)----------	-0.0	-0.0	0.1	0.2	0.5	0.7
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	-0.0	-0.0	0.0	0.1	0.3	0.6
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	-0.1	-0.1	0.0	0.3	0.6
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.0	-0.0	-0.0	0.1	0.2	0.4
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.0	0.0	0.1	0.3	0.4	0.6
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.0	-0.7	-0.7	-0.6	-0.4	-0.2
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		GROSS NATIONAL EXPENDITURE DEFLATOR (PFGNE)						
3								
4	PFGNE	CONTROL (FORE.CAND17885)----------	211.3	227.8	243.9	260.9	278.0	295.1
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.1	-0.3	-0.5	-0.4	-0.1	0.3
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.3	-0.5	-0.6	-0.3	0.1	0.5
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.1	-0.3	-0.4	-0.2	0.1	0.5
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.1	-0.2	-0.3	0.1	0.9	2.0
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.3	-0.4	-0.2	0.3	1.1	2.3
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.1	-0.2	-0.1	0.3	1.1	2.1
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.0	0.1	0.4	0.9	1.5	2.4
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1.7	-2.2	-2.5	-2.2	-1.9	-1.3
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.1	-0.2	-0.2	-0.2	-0.0	0.1
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.2	-0.2	-0.2	-0.1	0.0	0.2
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.1	-0.1	-0.2	-0.1	0.0	0.2
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.1	-0.1	-0.1	0.0	0.3	0.7
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.1	-0.2	-0.1	0.1	0.4	0.8
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.1	-0.1	-0.0	0.1	0.4	0.7
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.0	0.1	0.2	0.3	0.5	0.8
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.8	-1.0	-1.0	-0.9	-0.7	-0.4
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		CONSUMER PRICE INDEX (CPI)						
3								
4	CPI	CONTROL (FORE.CANDI7885)----------	2.034	2.211	2.374	2.543	2.710	2.872
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.001	-0.002	-0.004	-0.002	0.001	0.004
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.005	-0.006	-0.007	-0.004	-0.001	0.003
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.002	-0.003	-0.004	-0.002	0.000	0.003
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	-0.001	-0.001	-0.001	0.003	0.010	0.020
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.004	-0.005	-0.004	0.002	0.010	0.020
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.001	-0.002	-0.001	0.003	0.010	0.018
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.000	0.001	0.004	0.009	0.014	0.022
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.023	-0.028	-0.031	-0.028	-0.026	-0.020
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	P SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.1	-0.1	-0.2	-0.1	0.0	0.1
33	P SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.2	-0.3	-0.3	-0.2	-0.0	0.1
34	P SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.1	-0.1	-0.2	-0.1	0.0	0.1
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	P SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.0	-0.1	-0.1	0.1	0.4	0.7
39	P SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.2	-0.2	-0.1	0.1	0.4	0.7
40	P SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.1	-0.1	-0.0	0.1	0.4	0.6
41	P SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.0	0.1	0.2	0.3	0.5	0.8
42	P SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1.1	-1.3	-1.3	-1.1	-0.9	-0.7
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		CONSUMER PRICE EXPECTATIONS (.CPIE)						
3								
4	.CPIE	CONTROL (FORE.CAND17885)----------	7.90	6.73	7.77	6.88	6.65	6.29
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	-0.02	0.09	0.14	0.24	0.25
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	-0.15	0.09	0.19	0.28	0.28
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	-0.04	0.09	0.15	0.23	0.23
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.00	-0.03	-0.01	-0.00	0.13	0.20
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.00	-0.16	-0.02	0.07	0.16	0.22
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.00	-0.05	-0.01	0.03	0.12	0.18
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.00	0.01	0.04	0.09	0.12	0.14
21	SHK1-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.00	-0.85	-0.09	-0.04	0.16	0.12
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	-0.3	1.2	2.0	3.6	4.0
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	-2.3	1.2	2.8	4.2	4.4
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	-0.6	1.1	2.1	3.5	3.7
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.0	-0.4	-0.1	-0.1	2.0	3.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.0	-2.4	-0.2	1.0	2.4	3.5
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.0	-0.7	-0.1	0.4	1.8	2.9
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.0	0.1	0.5	1.3	1.9	2.2
42	PSHK1-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.0	-12.6	-1.2	-0.6	2.3	1.9
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		REAL AVERAGE HOURLY WAGE RATE (W / CPI)						
3								
4	W/CPI	CONTROL (FORE.CAND17885)----------	4.384	4.370	4.470	4.566	4.667	4.825
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.002	0.004	0.014	0.019	0.029	0.039
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.010	0.008	0.013	0.018	0.028	0.038
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.003	0.003	0.010	0.015	0.023	0.031
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.001	0.002	0.005	0.000	-0.002	-0.003
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.010	0.006	0.003	-0.001	-0.004	-0.007
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.002	0.001	0.001	-0.003	-0.007	-0.010
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.000	-0.001	-0.002	-0.004	-0.004	-0.007
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.051	0.026	0.028	0.021	0.026	0.026
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	0.1	0.3	0.4	0.6	0.8
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.2	0.2	0.3	0.4	0.6	0.8
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	0.1	0.2	0.3	0.5	0.6
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.0	0.0	0.1	0.0	-0.0	-0.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.2	0.1	0.1	-0.0	-0.1	-0.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.1	0.0	0.0	-0.1	-0.1	-0.2
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.0	-0.0	-0.1	-0.1	-0.1	-0.1
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1.2	0.6	0.6	0.5	0.5	0.5
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	ITEM	1980	1981	1982	1983	1984	1985
1								
2		COMPENSATION OF EMPL/NET NATL INC (WBTOT / NNI$)						
3								
4	WBTOT/NNI$	CONTROL (FORE.CANDI7885)----------	72.5	72.1	73.0	73.9	74.4	74.9
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	-0.0	0.1	0.1	0.2	0.3
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	-0.1	-0.0	0.0	0.1	0.2
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	-0.0	0.0	0.1	0.2	0.2
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.0	-0.0	0.1	0.1	0.1	0.2
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	-0.0	-0.0	0.0	0.0	0.1
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.0	-0.0	0.0	0.0	0.1	0.1
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.1	-0.1	-0.1	-0.0	0.0	0.0
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.0	-0.3	-0.2	-0.3	-0.2	-0.2
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	-0.0	0.1	0.1	0.3	0.4
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.0	-0.1	-0.0	0.0	0.2	0.3
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	-0.0	0.0	0.1	0.2	0.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.0	-0.0	0.1	0.1	0.2	0.3
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	-0.1	-0.0	0.0	0.1	0.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.0	-0.0	0.0	0.1	0.1	0.2
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.1	-0.1	-0.1	-0.1	0.0	0.0
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.0	-0.4	-0.3	-0.3	-0.2	-0.2
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PROFITS/NET NATL INC (Y.PROFBT.CORP$ / NNI$)						
3								
4	CORP$/NNI$	CONTROL (FORE.CAND17885)----------	13.9	14.7	13.6	13.2	13.1	13.0
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	0.1	0.1	0.1	0.0	-0.1
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.1	0.1	0.2	0.2	0.1	-0.0
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.0	0.1	0.0	0.1	-0.0	-0.1
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.0	-0.0	-0.1	-0.1	-0.3	-0.4
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.1	0.0	-0.0	-0.1	-0.2	-0.4
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.1	-0.0	-0.1	-0.2	-0.3	-0.4
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.0	0.0	-0.0	-0.2	-0.2
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.5	0.2	0.1	0.1	-0.0	-0.1
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	0.5	0.6	0.9	0.1	-0.7
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.4	1.0	1.2	1.2	0.6	-0.1
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.2	0.5	0.3	0.5	-0.2	-0.7
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.3	-0.1	-0.8	-0.8	-2.0	-3.4
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.7	0.3	-0.0	-0.6	-1.7	-3.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.4	-0.1	-0.8	-1.2	-2.3	-3.4
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.6	0.3	0.1	-0.3	-1.4	-1.9
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-3.4	1.5	0.5	1.0	-0.0	-0.6
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	ITEM	1980	1981	1982	1983	1984	1985
1								
2		EXCHANGE RATE - C$/US$ (REXCAN)						
3								
4	REXCAN	CONTROL (FORE.CAND17885)----------	1.102	1.119	1.103	1.105	1.098	1.095
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.001	0.002	0.002	0.003	0.003	0.003
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.001	0.003	0.002	0.003	0.003	0.003
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.000	0.002	0.002	0.002	0.002	0.002
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	0.001	0.002	0.002	0.003	0.002	0.002
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.000	0.002	0.002	0.002	0.001	0.001
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.000	0.001	0.001	0.001	0.001	0.000
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.001	0.001	0.001	0.001	0.000	0.000
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.001	0.006	0.002	0.004	0.003	0.004
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.1	0.2	0.2	0.3	0.3	0.3
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.2	0.2	0.3	0.3	0.3
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	0.2	0.1	0.2	0.2	0.2
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	0.1	0.2	0.1	0.2	0.2	0.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	0.2	0.2	0.2	0.1	0.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.0	0.1	0.1	0.1	0.1	0.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.1	0.1	0.1	0.0	0.0
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.1	0.6	0.2	0.3	0.3	0.4
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		CURRENT ACCOUNT BALANCE (TBC.BAL.CAW$)						
3								
4	TBC.BAL.CAW$	CONTROL (FORE.CAND17885)----------	-7284.	-9414.	-9849.	-10848.	-11897.	-13568.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-125.	-490.	-700.	-1032.	-1259.	-1427.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-122.	-393.	-625.	-864.	-1074.	-1310.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-96.	-482.	-621.	-877.	-1088.	-1257.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-177.	-624.	-892.	-1346.	-1673.	-1965.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-177.	-529.	-857.	-1174.	-1516.	-1920.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-142.	-605.	-836.	-1163.	-1479.	-1766.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-354.	-500.	-716.	-938.	-1127.	-1428.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-365.	-860.	-739.	-807.	-946.	-1168.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	1.7	5.2	7.1	9.5	10.6	10.5
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	1.7	4.2	6.3	8.0	9.0	9.7
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	1.3	5.1	6.3	8.1	9.1	9.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	2.4	6.6	9.1	12.4	14.1	14.5
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	2.4	5.6	8.7	10.8	12.7	14.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	1.9	5.4	8.5	10.7	12.4	13.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	4.9	5.3	7.3	8.6	9.5	10.5
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	5.0	9.1	7.5	7.4	8.0	8.6
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 05.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		LONG-TERM CAPITAL FLOWS (TBK.BAL.LTFM$)						
3								
4	TBK.BAL.LTFM$	CONTROL (FORE.CAN017885)----------	634.	169.	393.	850.	921.	1449.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-108.	-139.	-105.	-47.	-35.	10.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-91.	-190.	-151.	-117.	-100.	-88.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	9.	10.	55.	144.	183.	217.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-24.	83.	289.	457.	567.	740.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-2.	35.	234.	408.	569.	711.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	85.	211.	410.	627.	793.	928.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-7.	67.	190.	317.	442.	561.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	121.	-61.	20.	154.	55.	12.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-17.0	-82.5	-26.6	-5.6	-3.8	0.7
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-14.3	-112.9	-38.4	-13.8	-10.9	-6.1
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	1.4	6.1	14.0	17.0	19.8	15.0
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-3.7	48.9	73.4	53.8	61.6	51.1
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.3	21.0	59.6	48.1	61.8	49.1
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	13.4	125.3	104.2	73.8	86.1	64.1
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-1.1	39.8	48.4	37.3	48.0	38.7
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	19.1	-36.1	5.0	18.1	6.0	0.8
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		MONEY SUPPLY(NARROW DEFINITION) (FMONEYSUPPLY)						
3								
4	FMONEYSUPPLY	CONTROL (FORE.CAN07885)----------	27502.	29723.	32091.	34670.	37445.	40435.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	114.	312.	541.	776.	1032.	1345.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	121.	321.	553.	811.	1113.	1497.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	101.	286.	506.	742.	1002.	1316.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.	0.	0.	0.	0.	0.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.	0.	0.	0.	0.	0.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.	0.	0.	0.	0.	0.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.	0.	0.	0.	0.	0.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.	0.	0.	0.	0.	0.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.4	1.1	1.7	2.2	2.8	3.3
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.4	1.1	1.7	2.3	3.0	3.7
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.4	1.0	1.6	2.1	2.7	3.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.0	0.0	0.0	0.0	0.0	0.0
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.0	0.0	0.0	0.0	0.0	0.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.0	0.0	0.0	0.0	0.0	0.0
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.0	0.0	0.0	0.0	0.0	0.0
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.0	0.0	0.0	0.0	0.0	0.0
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.90~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		FINANCE COMPANY PAPER RATE (FRATE.FCPAPER3M)						
3								
4	FRATE.FCPAPER3M	CONTROL (FORE.CANDI7885)----------	9.21	9.51	9.21	8.61	8.05	7.72
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.00	-0.00	-0.01	0.01	0.05	0.09
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.01	-0.02	-0.02	0.02	0.08	0.12
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.01	-0.01	-0.02	-0.00	0.03	0.07
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.36	0.84	1.38	1.95	2.62	3.46
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.37	0.84	1.41	2.06	2.87	3.89
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.31	0.77	1.29	1.87	2.54	3.36
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.30	0.66	1.07	1.50	2.02	2.65
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.35	0.71	1.11	1.54	1.98	2.59
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	-0.0	-0.1	0.1	0.6	1.2
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.1	-0.2	-0.2	0.2	0.9	1.6
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.1	-0.1	-0.2	-0.0	0.4	0.8
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	3.9	8.9	15.0	22.6	32.5	44.8
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	4.0	8.9	15.3	24.0	35.6	50.3
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	3.4	8.1	14.0	21.7	31.5	43.6
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	3.2	6.9	11.6	17.4	25.1	34.3
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	3.8	7.5	12.1	17.9	24.5	33.6
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		INDUSTRIAL BOND YIELD (FRATE.IBOND.10Y)						
3								
4	FRATE.IBOND.10Y	CONTROL (FORE.CAND17885)----------	11.13	11.25	11.30	10.72	10.36	10.01
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.00	-0.00	-0.00	-0.00	0.01	0.02
12	SHKE-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.00	-0.01	-0.01	-0.00	0.01	0.03
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.00	-0.00	-0.00	-0.00	0.00	0.02
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.07	0.19	0.37	0.57	0.80	1.06
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.07	0.20	0.37	0.60	0.86	1.20
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.06	0.17	0.34	0.54	0.77	1.05
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.05	0.15	0.29	0.44	0.62	0.83
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.06	0.17	0.30	0.46	0.62	0.82
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	-0.0	-0.0	-0.0	0.1	0.2
33	PSHKE-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.0	-0.0	-0.1	-0.0	0.1	0.3
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-0.0	-0.0	-0.0	-0.0	0.0	0.2
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.6	1.7	3.3	5.3	7.8	10.6
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.6	1.7	3.3	5.6	8.5	12.0
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.5	1.6	3.0	5.0	7.5	10.5
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.5	1.4	2.5	4.1	6.0	8.3
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.6	1.5	2.7	4.3	6.0	8.2
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		TOTAL GOVERNMENT DEFICIT (GD$)						
3								
4	GD$	CONTROL (FORE.CAND17865)----------	-5569.	-3288.	-2777.	-1751.	-885.	-33.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-627.	-791.	-762.	-623.	-758.	-981.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-865.	-754.	-793.	-816.	-1005.	-1294.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-794.	-853.	-909.	-844.	-988.	-1195.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-878.	-1006.	-1276.	-1499.	-2140.	-3080.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-922.	-983.	-1298.	-1762.	-2525.	-3657.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-839.	-1053.	-1362.	-1694.	-2343.	-3265.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-630.	-736.	-925.	-1183.	-1689.	-2312.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1056.	-593.	-838.	-1026.	-1393.	-2262.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	14.8	24.1	27.4	35.6	85.7	2970.8
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	15.5	22.9	28.6	46.6	113.5	3916.4
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	14.3	25.9	32.7	48.2	111.7	3616.8
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	15.8	30.6	45.9	65.6	241.8	9324.3
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	16.6	29.9	46.7	100.6	285.3	11071.2
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	15.1	32.0	49.0	96.8	264.8	9882.9
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	11.3	22.4	33.3	67.6	190.9	7000.2
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	19.0	18.1	30.2	58.6	157.4	6848.3
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		FEDERAL GOVERNMENT DEFICIT (GDF$)						
3								
4	GDF$	CONTROL (FORE.CAND17885)----------	-9143.	-8185.	-8451.	-8098.	-7683.	-7000.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-862.	-966.	-1008.	-942.	-1076.	-1276.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-888.	-926.	-1049.	-1127.	-1332.	-1607.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-609.	-716.	-792.	-743.	-842.	-988.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-942.	-1256.	-1656.	-2056.	-2626.	-3914.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-975.	-1231.	-1695.	-2321.	-3246.	-4576.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-679.	-985.	-1373.	-1815.	-2543.	-3575.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-759.	-987.	-1274.	-1639.	-2225.	-2965.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1139.	-968.	-1364.	-1695.	-2231.	-3186.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	9.4	11.8	11.9	11.6	14.0	18.2
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	9.7	11.3	12.4	13.9	17.3	23.0
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	6.7	8.7	9.4	9.2	11.0	14.1
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	10.3	15.3	19.6	25.4	36.8	55.9
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	10.7	15.0	20.1	28.7	42.3	65.4
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	7.4	12.0	16.2	22.4	33.1	51.1
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	8.3	12.1	15.1	20.2	29.0	42.4
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	12.5	11.8	16.1	20.9	29.0	45.5
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PROVINCIAL GOVERNMENT SURPLUS (GDP$)						
3								
4	GDP$	CONTROL (FORE.CANDI7885)----------	992.	1804.	1852.	1752.	1538.	1134.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	36.	184.	267.	349.	353.	325.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	23.	176.	265.	326.	346.	335.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-186.	-132.	-104.	-84.	-126.	-184.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	68.	257.	369.	515.	585.	644.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	56.	250.	374.	503.	597.	708.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-158.	-64.	-4.	74.	90.	122.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	136.	260.	332.	414.	448.	484.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	79.	366.	474.	578.	688.	735.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	3.7	10.2	14.4	19.9	23.0	28.6
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	2.3	9.7	14.3	18.6	22.5	29.6
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	-18.7	-7.3	-5.6	-4.8	-8.2	-16.2
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	6.8	14.2	19.9	29.4	38.0	56.7
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	5.6	13.8	20.2	28.7	38.8	62.4
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-15.9	-3.6	-0.2	4.2	5.9	10.7
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	13.8	14.4	17.9	23.6	29.2	42.7
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	7.9	20.3	25.6	33.0	44.8	64.8
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		TOTAL GOVT SECURITIES OUTSTANDING (FGD.TSEC)						
3								
4	FGD.TSEC	CONTROL (FORE.CANDI7885)----------	77822.	87476.	97878.	108073.	118121.	127530.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	834.	1808.	2832.	3778.	4881.	6200.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	866.	1795.	2850.	3984.	5343.	6993.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	593.	1307.	2113.	2864.	3733.	4754.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	825.	2021.	3597.	5528.	8212.	11981.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	861.	2028.	3630.	5819.	8907.	13317.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	581.	1499.	2789.	4481.	6878.	10290.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	641.	1602.	2817.	4372.	6478.	9319.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1035.	1917.	3209.	4788.	6902.	9945.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	1.1	2.1	2.9	3.5	4.1	4.9
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	1.1	2.1	2.9	3.7	4.5	5.5
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.8	1.5	2.2	2.7	3.2	3.7
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC $EX.P3MADJ)----------	1.1	2.3	3.7	5.1	7.0	9.4
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	1.1	2.3	3.7	5.4	7.5	10.4
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.7	1.7	2.8	4.1	5.8	8.1
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.8	1.8	2.9	4.0	5.5	7.3
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1.3	2.2	3.3	4.4	5.8	7.8
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 05.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PREVLMUN SEC HELD BY NONFIN PUBL (FGD.P+MSEC.PUB)						
3								
4	FGD.P+MSEC.PUB	CONTROL (FORE.CAND17885)----------	60589.	65489.	70602.	75943.	81696.	88029.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-15.	-91.	-193.	-322.	-452.	-576.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-7.	-75.	-176.	-301.	-440.	-579.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	85.	152.	214.	272.	349.	449.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-129.	-401.	-875.	-1597.	-2583.	-3861.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-126.	-396.	-904.	-1652.	-2706.	-4120.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-20.	-131.	-441.	-948.	-1692.	-2713.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-146.	-379.	-767.	-1336.	-2088.	-3078.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-135.	-420.	-906.	-1562.	-2435.	-3507.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.0	-0.1	-0.3	-0.4	-0.6	-0.7
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.0	-0.1	-0.2	-0.4	-0.5	-0.7
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.1	0.2	0.3	0.4	0.4	0.5
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-0.2	-0.6	-1.2	-2.1	-3.2	-4.4
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	-0.2	-0.6	-1.3	-2.2	-3.3	-4.7
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	-0.0	-0.2	-0.6	-1.2	-2.1	-3.1
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.2	-0.6	-1.1	-1.8	-2.6	-3.5
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	-0.2	-0.6	-1.3	-2.1	-3.0	-4.0
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		NON-RES PROV & MUNIC SECURITIES (TBK.STK.PRMNSC$)						
3								
4	TBK.STK.PRMNSC$	CONTROL (FORE.CAND17885)----------	28236.	29661.	31125.	32754.	34667.	37021.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-19.	-115.	-249.	-416.	-571.	-695.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-15.	-112.	-252.	-414.	-566.	-694.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	101.	174.	238.	297.	393.	535.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	26.	67.	229.	493.	946.	1624.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	34.	78.	236.	524.	1017.	1762.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	140.	337.	673.	1144.	1829.	2755.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-22.	-21.	79.	271.	622.	1142.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	16.	-31.	1.	104.	304.	680.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	-0.1	-0.4	-0.8	-1.3	-1.6	-1.9
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	-0.1	-0.4	-0.8	-1.3	-1.6	-1.9
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.4	0.6	0.8	0.9	1.1	1.4
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.1	0.2	0.7	1.5	2.7	4.4
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.1	0.3	0.8	1.6	2.9	4.8
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.5	1.1	2.2	3.5	5.3	7.4
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-0.1	-0.1	0.3	0.8	1.8	3.1
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.1	-0.1	0.0	0.3	0.9	1.8
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		FEDERAL GOVT INTEREST PAYMENTS (GEF.INT$)						
3								
4	GEF.INT$	CONTROL (FORE.CAND17885)----------	8290.	9788.	10963.	11758.	12535.	13270.
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	61.	182.	309.	431.	571.	745.
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	58.	175.	304.	451.	634.	848.
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	41.	126.	222.	320.	433.	566.
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	193.	584.	1145.	1871.	2845.	4207.
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	199.	588.	1159.	1963.	3091.	4704.
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	157.	494.	995.	1682.	2609.	3903.
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	156.	457.	889.	1445.	2196.	3210.
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	206.	531.	963.	1530.	2230.	3243.
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.7	1.9	2.8	3.7	4.6	5.6
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.7	1.8	2.8	3.8	5.1	6.4
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.5	1.3	2.0	2.7	3.5	4.3
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	2.3	6.0	10.4	15.9	22.7	31.7
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	2.4	6.0	10.6	16.7	24.7	35.5
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	1.9	5.0	9.1	14.3	20.8	29.4
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	1.9	4.7	8.1	12.3	17.5	24.2
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	2.5	5.4	8.8	13.0	17.8	24.4
43								
44								
45								

Table C-1 (cont.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PRIV NONRES CONSTR+M&E/GNE (IBNACO$+IBNAM$/GNE$)						
3								
4	IBN/GNE$	CONTROL (FORE.CAND17885)----------	14.5	14.8	14.7	14.6	14.6	14.8
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	0.2	0.2	0.4	0.4	0.3
12	SHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.2	0.2	0.3	0.3	0.3
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	0.2	0.2	0.3	0.3	0.2
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.0	0.2	0.2	0.2	0.1	-0.0
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.1	0.1	0.2	0.2	0.1	-0.1
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.0	0.2	0.2	0.1	0.0	-0.1
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.0	0.0	0.0	-0.0	-0.1	-0.2
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.0	0.1	0.1	0.1	-0.0	-0.1
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.3	1.2	1.7	2.4	2.5	2.1
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.4	1.0	1.6	2.0	2.0	1.7
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.2	1.1	1.4	1.8	1.8	1.5
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.3	1.1	1.3	1.6	1.0	-0.2
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.4	0.9	1.2	1.1	0.4	-0.7
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.2	1.0	1.0	1.0	0.3	-0.7
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.0	0.2	0.0	-0.3	-0.8	-1.5
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.1	0.7	0.7	0.5	-0.1	-0.8
43								
44								
45								

Table C-1 (concl.)

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 95.00~~ COMPARISON OF SHOCKED SOLUTIONS

LINE	VAR LABEL	I T E M	1980	1981	1982	1983	1984	1985
1								
2		PERSONAL SAVINGS RATE (PERCENT) (S$ / PDY$)						
3								
4	S$/PDY$	CONTROL (FORE.CAND178P5)----------	9.9	9.3	9.2	8.8	8.6	8.4
5								
6								
7		SHOCK - CONTROL						
8								
9		ACCOMMODATING MONETARY POLICY						
10								
11	SHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.0	0.1	0.1	0.1	0.1	0.1
12	SHKE-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.1	0.0	0.1	0.1	0.1	0.1
13	SHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.0	0.0	0.1	0.1	0.1	0.1
14								
15		NON-ACCOMMODATING MONETARY POLICY						
16								
17	SHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.1	0.1	0.1	0.1	0.1	0.2
18	SHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.1	0.1	0.1	0.1	0.2	0.2
19	SHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.1	0.1	0.1	0.1	0.1	0.1
20	SHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	0.1	0.2	0.1	0.1	0.1	0.1
21	SHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	0.2	0.1	0.1	0.1	0.1	0.2
22								
23								
24								
25								
26								
27								
28		(SHOCK - CONTROL) / CONTROL						
29								
30		ACCOMMODATING MONETARY POLICY						
31								
32	PSHKA-CTL	CORPORATE TAX CUT (CORPORATE.TAX)----------	0.5	0.6	0.8	0.8	1.2	1.3
33	PSHKB-CTL	INVEST TAX CREDIT INCR (TAXCRDT2.REV2)----------	0.5	0.5	0.6	0.8	1.2	1.3
34	PSHKC-CTL	TAX DEPRECIATION INCREASE (FORE.TAXDEPR2)---------	0.4	0.5	0.7	0.6	0.9	1.0
35								
36		NON-ACCOMMODATING MONETARY POLICY						
37								
38	PSHKD-CTL	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	0.7	1.1	1.1	1.0	1.6	2.0
39	PSHKE-CTL	INVESTMENT TAX CREDIT INCREASE (ITC.$EX.P3MADJ)---	0.8	0.9	1.1	1.0	1.8	2.2
40	PSHKF-CTL	TAX DEPRECIATION INCREASE (ITD.$EX.P3MADJ)--------	0.7	0.9	1.2	0.8	1.4	1.7
41	PSHKH-CTL	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	1.5	1.8	0.6	0.6	0.8	1.4
42	PSHKI-CTL	FED MANUFACT SALES TAX CUT (MSTC.$EX.P3MADJ)------	1.7	0.8	1.0	0.7	1.5	2.2
43								
44								
45								

Table C-2

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.01~~ GROSS NATIONAL PRODUCT (1971$) - GNE

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	135830.	141128.	145230.	148930.	153805.	159366.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	121.	554.	1280.	2341.	3529.	4836.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	197.	675.	1387.	2286.	3328.	4500.
12	INVST. TAX DEPRECIATION INCR. (FCRE.TAXDEPR2)----	72.	402.	876.	1528.	2230.	3043.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	137.	504.	974.	1567.	1984.	2145.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	212.	619.	1100.	1502.	1724.	1674.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	67.	359.	631.	833.	782.	471.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	349.	695.	1089.	1417.	1562.	1518.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	478.	1366.	2238.	3071.	3850.	4570.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	70.	340.	920.	1748.	2801.	3946.

Table C-3

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.02~~ INVESTMENT BUSINESS CONSTRUCTION - 1BNACO$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	20137.	23041.	25900.	28814.	32023.	35438.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	57.	257.	682.	1543.	2612.	3685.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	42.	201.	518.	1001.	1624.	2322.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	37.	170.	447.	978.	1640.	2316.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	70.	286.	689.	1424.	2191.	2728.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	54.	230.	529.	888.	1203.	1357.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	48.	198.	462.	885.	1265.	1426.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	53.	187.	357.	548.	667.	666.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-37.	-3.	88.	199.	250.	196.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	70.	175.	431.	922.	1673.	2605.

Table C-4

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.03~~ INVESTMENT BUSINESS MACH & EQUIP - IBNAM$

LINE	I T E M	1980	1981	1982	1983	1984	1985
2	BASE CASE (ACTUAL)	21489.	24661.	26071.	27874.	30394.	33963.
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
8	ACCOMMODATING MONETARY POLICY						
10	CORPORATE TAX CUT (CORPORATE.TAX)	65.	504.	1086.	1908.	2864.	3874.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)	135.	526.	1184.	2098.	3188.	4346.
12	INVST. TAX DEPRECIATION INCR. (FDRE.TAXDEPR2)	56.	510.	1031.	1712.	2485.	3312.
14	NON-ACCOMMODATING MONETARY POLICY						
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)	58.	441.	827.	1229.	1440.	1284.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)	127.	457.	925.	1381.	1675.	1563.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)	50.	452.	809.	1081.	1137.	817.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)	62.	167.	231.	208.	-32.	-519.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)	-99.	46.	95.	75.	-131.	-626.
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)	256.	461.	1001.	1717.	2718.	3885.

Table C-5

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.64~~ INVESTMENT BUSINESS TOTAL - IBNACO$+IBNAM$

LINE	ITEM	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	41627.	47701.	51971.	56688.	62417.	69401.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	122.	761.	1768.	3452.	5475.	7559.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	177.	727.	1702.	3099.	4811.	6668.
12	INVST. TAX DEPRECIATION INCR. (DEPRE.TAXDEPR2)----	93.	680.	1478.	2690.	4125.	5628.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	127.	727.	1516.	2653.	3630.	4012.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	182.	687.	1454.	2270.	2679.	2919.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	98.	656.	1271.	1966.	2401.	2243.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	115.	354.	588.	757.	635.	147.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-136.	43.	183.	274.	120.	-430.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	326.	636.	1432.	2639.	4391.	6490.

Table C-6

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.05~~ INVESTMENT BUSINESS CONSTRUCTION (1971$) - IBNACO

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	9073.	9693.	10269.	10792.	11366.	11892.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	30.	124.	307.	632.	996.	1322.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	32.	123.	276.	476.	699.	914.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	22.	89.	213.	417.	643.	845.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	30.	115.	257.	482.	655.	676.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	32.	113.	225.	322.	345.	239.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	23.	81.	169.	282.	326.	233.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	19.	61.	96.	108.	55.	-90.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	9.	71.	159.	236.	260.	205.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	15.	43.	119.	278.	502.	754.

Table C-7

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 9K.06~~ INVESTMENT BUSINESS MACH & EQUIP (1971$) - IBNAM

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	10778.	11423.	11338.	11406.	11824.	12548.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	32.	242.	491.	809.	1155.	1493.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	76.	260.	546.	906.	1308.	1704.
12	INVST. TAX DEPRECIATION INCR. (FURE.TAXDEPR2)----	32.	255.	487.	759.	1050.	1336.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	29.	212.	378.	520.	569.	464.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	72.	227.	425.	595.	679.	591.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	29.	229.	384.	485.	489.	339.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	23.	59.	70.	35.	-88.	-314.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	33.	171.	273.	334.	324.	205.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	11.	38.	180.	385.	670.	985.

Table C-8

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

TABLE 98.07 INVESTMENT BUSINESS TOTAL (1971$) - IBNACD+IBNAM

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	19651.	21116.	21607.	22198.	23193.	24449.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	62.	366.	797.	1441.	2151.	2815.
11	INVST. TAX CREDIT INCREASED (TAXCRD12.REV2)------	108.	383.	822.	1382.	2007.	2618.
12	INVST. TAX DEPRECIATION INCR. (FIRE.TAXDEPR2)----	54.	344.	699.	1176.	1692.	2181.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	60.	327.	634.	1002.	1224.	1140.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	104.	340.	651.	917.	1024.	830.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	52.	310.	553.	767.	814.	572.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	42.	120.	166.	143.	-33.	-405.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	42.	242.	432.	570.	583.	410.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	26.	81.	299.	663.	1172.	1739.

Table C-9

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.C8~~ TOTAL EMPLOYMENT - NE

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	10178.	10465.	10684.	10872.	11074.	11295.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	3.	15.	37.	73.	114.	161.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	3.	17.	40.	72.	109.	151.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	0.	8.	23.	45.	70.	100.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	5.	17.	38.	69.	102.	135.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	5.	19.	42.	70.	97.	124.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	2.	11.	25.	43.	60.	75.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	19.	42.	73.	104.	134.	162.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	10.	45.	92.	139.	190.	242.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	2.	2.	9.	25.	46.	75.

Table C-10

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.09~~ FEDERAL GOVERNMENT DEFICIT - GDF$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	-9143.	-8185.	-8451.	-8098.	-7683.	-7000.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	-862.	-1628.	-2836.	-3778.	-4854.	-6130.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	-888.	-1815.	-2864.	-3990.	-5322.	-6929.
12	INVST. TAX DEPRECIATION INCR. (FCRE.TAXDEPR2)----	-609.	-1324.	-2116.	-2859.	-3701.	-4689.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-942.	-2197.	-3853.	-5909.	-8735.	-12650.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	-975.	-2206.	-3901.	-6222.	-9469.	-14045.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	-679.	-1663.	-3036.	-4851.	-7395.	-10969.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-759.	-1747.	-3021.	-4660.	-6885.	-9850.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1139.	-2107.	-3471.	-5166.	-7397.	-10583.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	668.	1150.	2162.	3307.	4707.	6316.

Table C-11

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 99.10~~ FEDERAL & PROVINCIAL GOVERNMENT DEFICIT - GDF$+GDP$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	-5151.	-6381.	-6599.	-6346.	-6145.	-5865.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	-826.	-1606.	-2349.	-2942.	-3665.	-4617.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.FEV2)------	-866.	-1616.	-2400.	-3201.	-4187.	-5459.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	-795.	-1643.	-2539.	-3366.	-4334.	-5506.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-874.	-1873.	-3160.	-4701.	-6942.	-10213.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	-919.	-1901.	-3221.	-5039.	-7688.	-11556.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	-836.	-1885.	-3262.	-5003.	-7456.	-10909.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-623.	-1350.	-2293.	-3518.	-5295.	-7776.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1060.	-1662.	-2552.	-3669.	-5212.	-7663.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	622.	1081.	2075.	3201.	4509.	5980.

Table C-12

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

TABLE 98.11 UNREMITTED PROFITS OF CORPORATIONS - Y.URPROF.CORP$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	14358.	17234.	16972.	17905.	19723.	21740.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	721.	1646.	2570.	3668.	4677.	5610.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	640.	1647.	2778.	4040.	5295.	6581.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	666.	1646.	2614.	3671.	4637.	5617.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	657.	1414.	2031.	2759.	3260.	3507.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	573.	1414.	2303.	3158.	3894.	4474.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	608.	1435.	2180.	2858.	3344.	3670.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	132.	184.	228.	209.	-18.	-312.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-606.	-163.	-113.	56.	-99.	-175.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	799.	873.	1387.	1642.	2102.	2211.

Table C-13

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.12~~ FEDERAL DIRECT TAXES CORPORATIONS - GRF.DT.CCRP$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	7500.	8741.	9165.	9762.	10500.	11125.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	-991.	-2111.	-3265.	-4450.	-5740.	-7172.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	-996.	-2086.	-3317.	-4659.	-6141.	-7852.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	-695.	-1564.	-2507.	-3455.	-4466.	-5614.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-1002.	-2161.	-3412.	-4744.	-6242.	-7954.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	-1010.	-2148.	-3477.	-4996.	-6730.	-8790.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	-706.	-1617.	-2649.	-3759.	-5003.	-6470.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	45.	102.	165.	215.	170.	57.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-171.	-151.	-127.	-32.	114.	94.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	238.	435.	740.	1029.	1221.	1414.

Table C-14

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.13~~ FED & PROV DIRECT TAXES CORP - GRF.DT.CCRP$+CRP.DT.CCRP$

LINE	ITEM	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	10541.	12285.	12880.	13718.	14755.	15632.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	-991.	-2093.	-3219.	-4352.	-5594.	-7005.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	-1005.	-2072.	-3259.	-4533.	-5941.	-7608.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	-976.	-2197.	-3521.	-4853.	-6273.	-7885.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-1007.	-2167.	-3434.	-4783.	-6331.	-8152.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	-1024.	-2159.	-3483.	-5006.	-6769.	-8923.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	-991.	-2272.	-3721.	-5280.	-7028.	-9088.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	64.	143.	231.	302.	238.	80.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-240.	-212.	-179.	-45.	160.	132.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	334.	611.	1039.	1445.	1715.	1985.

Table C-15

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.14~~ FEDERAL DIRECT TAXES, PERSONAL INCOME TAX - GRF.DT.PINC$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	18082.	20630.	23298.	26253.	29609.	33417.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	6.	41.	148.	387.	797.	1418.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	-14.	9.	105.	334.	743.	1374.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	1.	29.	118.	318.	659.	1172.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	59.	230.	577.	1169.	2101.	3513.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	43.	205.	549.	1152.	2138.	3673.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	49.	201.	519.	1060.	1913.	3201.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-917.	-1765.	-2487.	-3035.	-3330.	-3272.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	36.	191.	452.	900.	1593.	2664.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	-145.	-274.	-326.	-283.	-86.	297.

Table C-16

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.15~~ FEDERAL INDIRECT TAXES, MANUF SALES TAX - GRF.IT.MSAL$

LINE	ITEM	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	4774.	5397.	6020.	6622.	7338.	8082.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	12.	43.	98.	191.	312.	459.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	5.	25.	63.	124.	209.	324.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	7.	29.	66.	129.	210.	313.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	15.	51.	105.	196.	312.	451.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	9.	32.	74.	134.	216.	325.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	10.	36.	77.	139.	215.	310.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	33.	75.	136.	212.	300.	407.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1016.	-2166.	-3454.	-4881.	-6467.	-8220.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	14.	38.	75.	137.	227.	345.

Table C-17

CANDIDE MODEL 2.0 - ECONOMIC COUNCIL OF CANADA

~~TABLE 98.16~~ GOVT DIRECT & INDIRECT TAXES - GR.DT.P$+GR.DT.C$+GR.IT$

LINE	I T E M	1980	1981	1982	1983	1984	1985
1							
2	BASE CASE (ACTUAL)----------	86710.	98022.	108436.	119991.	132863.	146954.
3							
4							
5	ALTERNATIVE (CUMULATIVE DIFFERENCE FROM BASE CASE)						
6	----------						
7							
8	ACCOMMODATING MONETARY POLICY						
9							
10	CORPORATE TAX CUT (CORPORATE.TAX)----------	-962.	-1910.	-2684.	-3101.	-3215.	-2998.
11	INVST. TAX CREDIT INCREASED (TAXCRDT2.REV2)------	-1023.	-1995.	-2899.	-3568.	-3948.	-4051.
12	INVST. TAX DEPRECIATION INCR. (FORE.TAXDEPR2)----	-967.	-2067.	-3122.	-3900.	-4437.	-4745.
13							
14	NON-ACCOMMODATING MONETARY POLICY						
15							
16	CORPORATE TAX CUT (CTC.$EX.P3MADJ)----------	-880.	-1648.	-2172.	-2243.	-1862.	-843.
17	INVST. TAX CREDIT INCREASED (ITC.$EX.P3MADJ)-----	-939.	-1733.	-2358.	-2679.	-2518.	-1702.
18	INVST. TAX DEPRECIATION INCR. (ITD.$EX.P3MADJ)---	-895.	-1835.	-2629.	-3090.	-3166.	-2735.
19	PERSONAL TAX CUT (PTC.$EX.P3MADJ)----------	-691.	-1195.	-1374.	-1200.	-675.	453.
20	MANUFATURER SALES TAX CUT (MSTC.$EX.P3MADJ)------	-1234.	-2116.	-3027.	-3690.	-4031.	-4108.
21							
22							
23	MONEY SUPPLY INCREASED (INCR.MONEY.ADJ1)----------	203.	380.	946.	1787.	2929.	4594.

Notes

CHAPTER 1

1 A list of these studies include the following: J. F. Helliwell, *Taxation and Investment: A Study of Capital Expenditure Decisions in Large Corporations*, Study No. 3, Royal Commission on Taxation (Ottawa: Queen's Printer, 1966); J. D. May, "An Econometric Study into the Effects of Post-War Fiscal Policy on Investment Expenditures in Canadian Manufacturing," unpublished Ph.D thesis, University of York, England, 1971; R. M. Hyndman, "The Efficiency of Recent Corporate Income Tax Reductions for Manufacturing," *Canadian Tax Journal* XXII, no. 1 (January-February 1974):84-97; Tax Measures Review Committee, *Corporate Tax Measures Review: Interim Report* (Ottawa: Information Canada, March 1974); P. Grady, "Estimated Effects of Corporate Tax Measures in May 1972 Budget," Bank of Canada, May 1974 (mimeo); F. C. Braithwaite, "Investment, Tax Laws and the CANDIDE Model," Economic Council of Canada, May 1974, mimeo; F. C. Braithwaite, "The Effects of Recent Tax Policy Changes on Investment in Canadian Manufacturing: Further Results," Economic Council of Canada, December 1974, mimeo; Tax Measures Review Committee, *Corporate Tax Measures Review: Final Report* (Ottawa: Information Canada, June 1975); F. C. Braithwaite, "The Effects of Recent Tax Policy Changes in Canadian Manufacturing," Economic Council of Canada, December 1975, mimeo; J. D. May and D. G. McFetridge, "The Effect of Some Recent Corporate Tax Changes on Investment and Employment," a paper presented at the Tenth Annual Meeting of the Canadian Economic Association, Laval University, Quebec, June 1976; D. G. McFetridge and J. D. May, "The Effects of Capital Cost Allowances on Capital Accumulation in the Canadian Manufacturing Sector," *Public Finance Quarterly* (July 1976):307-22; J. Mendelsohn and C. E. Beigie, *Tax Concessions to Boost Investment: A Perspective* (Montreal: C. D. Howe Research Institute, December 1978); Francis J. Harman, "An Analysis of Investment Incentive Policies in Canada," unpublished Ph.D thesis, McMaster University, London, Ontario, 1977; Jean-Pierre LeGoff, "Impact des incitations à l'investissement du gouvernement fédéral canadien dans le secteur manufacturier, de 1965 à 1974," *L'Actualité économique* (July-September 1977):307-89; F. J. Harman and J. A. Johnson, "An Examination of Government Tax Incentives for Business Investment in Canada," *Canadian Tax Journal* XXVI, no. 6 (November-December 1978):691-704; Jean-Pierre LeGoff, "Government Investment Assistance Programs in Canada: A Review of the Impact Results and a General Assessment," Economic Council of Canada, May 1979, mimeo; J. Douglas May, "Investment Incentives as Part of an Industrial Strategy," *Canadian Public Policy* (Winter 1979):70-79; J. Fortin, "The Impact of Tax Incentives on Private Investment: A Review of the Econometric Evidence," Economic Council of Canada, March 1979, mimeo; J. A. Johnson and W. M. Scarth, "Tax Expenditures for Business Investment: Their Effectiveness and Their Beneficiaries," *Canadian Taxation: A Journal of Tax Policy* 1, no. 3 (Fall 1979):4-8; Ernst and Whinney, Chartered Accountants, "Government Incentive Programs in Canada: Are They an Effective Tool in Stimulating Investment in Productive Plant and Equipment?" Economic Council of Canada, Discussion Paper 152, February 1980; and Kenneth N. Matziorinis, "Tax Expenditure for Capital Investment," *Canadian Taxation: A Journal of Tax Policy* 2, no. 3 (Fall 1980):172-79.

2 The only exceptions to this are the fiscal policy simulations that are reported by R. S. Preston in his paper "CANDIDE 2.0 Policy Simulations" presented at the Seminar on Policy Simulations sponsored by the Fiscal Policy Division of the Department of Finance, May 29, 1979.

3 Descriptions of this model are contained in D. W. Jorgenson, "Capital Theory and Investment Behaviour," *American Economic Review* 53, no. 2 (May 1963):247-59; D. W. Jorgenson, "The Theory of Investment Behaviour," in *Determinants of Investment Behaviour*, ed. Robert Ferber (New York: National Bureau of Economic Research, 1967), pp. 129-55; and R. E. Hall and D. W. Jorgenson, "Tax Policy and Investment Behaviour," *American Economic Review* 57 (June 1967):391-414.

CHAPTER 2

1 The optimality condition for labour is thus ignored. More will be said about this later.

2 See, for example, F. C. Braithwaite, "An Econometric Analysis of the Determinants of Investment in Canadian Manufacturing," unpublished Ph.D thesis, Queen's University, Kingston, 1971, pp. 7-35; J. F. Helliwell, "Aggregate Investment Equations: A Survey

of Issues," in *Aggregate Investment: Selected Readings*, ed. J. F. Helliwell (Markham: Penguin Education, 1976), pp. 13-53; L. R. Klein, "Issues in Econometric Studies in Investment Behaviour," *Journal of Economic Literature* 12 (1974):43-49; and T. Kollintzas and R. Rowley, "Nonstatic Expectations, Nonexponential Decay and the Post Tax Rental Cost of Capital," Research Paper 80-1, Social Sciences Statistical Laboratory, McGill University, Montreal, August 1980.

3 See, for example, Dale W. Jorgenson, "Capital, Investment and Production: A Survey," a paper presented at the winter meeting of the Econometric Society, Toronto, December 1972.

4 See, for example, C. W. Bischoff, "Hypothesis Testing and the Demand for Capital Goods," *Review of Economics and Statistics* 51 (1969):354-60; and J.C.R. Rowley, "Investment Functions: Which Production Function?" *American Economic Review* 60 (December 1970):1008-12.

5 See C. W. Bischoff, "Investment Behaviour: A Model of Non-Residential Construction in the United States," *American Economic Review* 60, no. 2 (May 1970), p. 12; and Braithwaite, "An Econometric Analysis," p. 19.

6 J. H. Helliwell and G. Glorieux in "Forward Looking Investment Behaviour," *Review of Economic Studies* 37 (1970):499-516, express doubt about the existence of any meaningful distinction between expansion or net investment and replacement investment.

7 A theoretical rationale for this is provided by A. L. Hempenius in "On the Specification of an Investment Function," Econometric Institute, Netherland School of Economics, *Reprint Series* 120, no. 152 (November 1972); and this specification is used in R. S. Preston, *The Wharton Annual and Industry Forecasting Model*, Studies in Quantitative Economics, No. 7, Wharton School, University of Pennsylvania, 1972. On the other hand, M. S. Feldstein and D. K. Foot, in "The Other Half of Gross Investment: Replacement and Modernization Expenditures," *The Review of Economics and Statistics* 53 (February 1971), relate replacement investment explicitly to economic factors similar to those which determine expansion investment.

8 See Jorgenson, *The Theory of Investment Behaviour*, p. 141; and Braithwaite, "An Econometric Analysis," p. 19.

9 See, for example, C. W. Bischoff, "The Effect of Alternative Lag Distributions," in *Tax Incentives and Capital Spending*, ed. G. Fromm, The Brookings Institution (New York: North-Holland, 1971).

10 See Bert G. Hickman, *Investment Demand and U.S. Economic Growth* (Washington: The Brookings Institution, 1965); and Braithwaite, "An Econometric Analysis," pp. 78-79.

11 Cf. D. W. Jorgenson and S. S. Handel, "Investment Behaviour in U.S. Regulated Industries," *The Bell Journal of Economics and Management Service* 2, no. 1 (Spring 1971):213-64.

12 For example, see R. M. Coen and B. G. Hickman, "Constrained Joint Estimation of Factor Demand and Production Functions," *Review of Economics and Statistics* 52 (1970):287-300.

13 Cf. Braithwaite, "An Econometric Analysis"; Peter K. Clark, "Investment in the 1970s: Theory, Performance and Prediction," *Brookings Papers on Economic Activity* 1, 1979; and T. Kollintzas and R. Rowley, "Financial Constraints and the Post Tax Rental Cost of Capital," Research Paper 80-2, Social Sciences Statistical Laboratory, McGill University, Montreal, August 1980.

14 M. H. Miller and F. Modigliani, "Estimates of the Cost of Capital Relevant to Investment Decisions under Uncertainty," in *Determinants of Investment Behaviour*, ed. Robert Ferber (New York: National Bureau of Economic Research, 1967).

15 Some data on this variable have been developed here at the Economic Council of Canada.

16 The simulation results will not be discussed here, but there is usually a close correspondence between the estimation and simulation results. The latter is discussed in R. S. Preston and P. S. Rao, "An Analysis of the Major Dynamic Properties of CANDIDE Model 2.0," a paper presented at the Comparative Models Seminar held at the Bank of Canada, Ottawa, July 1982.

CHAPTER 3

1 See R. M. Coen, "The Effects of Tax Policy on Investment in Manufacturing," *American Economic Review* 58, no. 2 (May 1968):200-11.

2 While it was convenient to follow Coen's derivation of the user cost of capital, because of its simplicity and the time constraints under which the user-cost-of-capital series were developed, it is recognized that the expressions for the user cost of capital in equations (3.6), (3.7), and (3.8) are based on a number of restrictive assumptions. The most obvious ones are that there is no change in the future values of P, q, u and that the value for δ is constant.

For attempts at modifying these kinds of restrictive assumptions, see Kollintzas and Rowley, "Nonstatic Expectations," and "Financial Constraints," Research Papers 80-1 and 80-2, respectively.

CHAPTER 4

1 See Shirley Almon, "The Distributed Lag Between Capital Appropriations and Expenditures," *Econometrica* (January 1965):178-96.

2 Instructions on the use of this search technique are contained in the DAMSEL Manual, published by Wharton Econometric Forecasting Associates Inc. and Boeing Computer Services Inc., October 1976.

3 This is a rough test based on the fact that in Jorgenson's neoclassical model, which is in some ways similar to Model I, the coefficient of the lagged capital stock provides an estimate of the economic depreciation rate.

4 These individual coefficients are not shown in Tables 4-1 and 4-2, but they are displayed in Sections 4 and 5

of *CANDIDE 2.0: Model Description*, Volumes I and II, Economic Council of Canada (Ottawa: Supply and Services Canada, October 1979).

CHAPTER 5

1 While the two are not strictly equivalent, in this study, "general equilibrium" effects mean "full model simulation" effects.

CHAPTER 6

1 Of course, it would be interesting to explore what happens after 1985, say up to 1990, not only to prices and interest rates but also to the other variables studied in the simulation results displayed in this section. Because of our interest in the medium term and our greater confidence in the model results between 1980 and 1985 than between 1985 and 1990, we have truncated the simulations in 1985. But it should be stressed that the full responses of the model to the policy changes, especially the investment incentives, go beyond 1985.

2 See, for example, Matziorinis, "Tax Expenditure," p. 178.

3 It must be emphasized, however, that while the econometric estimates of the cost/benefit ratios reported in Matziorinis, "Tax Expenditure," are in this range, those estimates measure the cost-effectiveness over the period 1972-75 of actual combinations of changes in the corporate tax rates and depreciation allowances introduced in 1972. On the other hand, our estimates are for individual investment incentives (in this case, the corporate tax cut) involving specified revenue loss in the initial year and implemented under an explicit assumption about monetary policy.

CHAPTER 7

1 The National Energy Program and the new energy agreement between the federal government and the province of Alberta are not incorporated in the simulations underlying this study, but it is clear from recent developments that these will not produce the originally expected increase in revenues, and thus decrease in federal government deficits, in the near future.

2 F. C. Braithwaite, "The Effects of Increased Investment Incentives on the Productivity of Labour and Capital," Economic Council of Canada, June 1980, mimeo.

3 Two interesting papers on the potential contribution of investment incentives to increasing productivity and on the identification of industries in which the largest increases in productivity are likely to be achieved are, respectively: D. W. Jorgenson, "Energy Prices and Productivity Growth" in *Productivity: Prospects for Growth*, ed. Jerome M. Rosow (New York: Van Nostrand/Work in America Institute, forthcoming); and D. W. Jorgenson and B. M. Fraumeni, "Relative Prices and Technical Change," 1980, mimeo.

4 See Ernst and Whinney, "Government Incentive Programs."

5 See "A Tax Credit to Check Inflation and Recession," *Business Week*, November 16, 1974.

6 J. Bossons and G. V. Jump, in a recent paper entitled "The Effects of Indexing Capital Cost Allowances," prepared for the Joint Industry Committee on Taxation, showed that indexing increases the effectiveness of capital cost allowances.

7 For some arguments in favour of maintaining indexing, see Carlton Braithwaite, "The Effects of Indexing on the Built-In Stability of the Canadian Economy," Economic Council of Canada, Discussion Paper 65, 1976.

8 For a critical analysis of the monetarist policies pursued by the Bank of Canada in the period 1975-79, see A. W. Donner and D. D. Peters, *The Monetarist Counter-Revolution: A Critique of Canadian Monetary Policy, 1975-1979* (Toronto: James Lorrimer and Company, 1979). For comments on this monograph and two other monographs recently published by the Institute for Economic Policy, see Myron J. Gordon, "The Post-Keynesian Debate: A Review of Three Recent Contributions," Canadian Institute for Public Policy, Occasional Paper No 2, December 1980.

9 Of course, it is recognized that U.S. interest rates, in particular, have an important bearing on Canadian interest rates. And because the former were until quite recently at high levels, the latter had been held at even higher levels by the Bank of Canada in order to avoid a large drop in the exchange rate of the Canadian dollar. But, leaving aside the issue as to whether a decline in the value of the Canadian dollar and its effect on inflation should be avoided at the cost of higher interest rates and their effect on the economy, it is clear that high interest rates adversely affect growth in the Canadian economy (and in the U.S. and a number of other economies for that matter). So every effort should be made, domestically and through international co-operation, to reduce the high interest rates that have been plaguing these economies.

10 For an analysis of alternative economic packages, using the target-instrument framework, see the Economic Council of Canada Eighteenth Annual Review, *Room for Manoeuvre* (Ottawa: Supply and Services Canada, 1981). See, also, H. M. Saiyed and R. S. Preston, "Optimal Control: An Application Using CANDIDE 2.0," Economic Council of Canada, Discussion Paper 215, March 1982.

11 For example, our results suggest that given the large federal deficits, debt, and interest payments to which the investment incentives give rise, the federal government should reduce its deficits by reducing its expenditures and increasing its revenues. But, given the controversy that exists over whether government deficits should be reduced or increased in a period of stagflation, it would be useful to determine – using the optimal control approach with a complete (and realistic) policy package included in CANDIDE 2.0 – whether, to what extent, and in what direction, government deficits should be changed. It might well be preferable to accept increases in the deficits in the short run but to reduce these deficits in the medium term as the economy's recovery from stagflation becomes greater.

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