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THE EFFECT OF THE EXCHANGE RATE REGIME ON UNEMPLOYMENT AND GDP

By

Majed El-Helou

A thesis submitted in partial fulfillment of
the requirements for the degree of

Master of Arts in Economics

University of Ottawa

University of Ottawa

Abstract

THE EFFECT OF THE EXCHANGE RATE REGIME ON UNEMPLOYMENT AND GDP

By Majed El-Helou

Chairperson of the Supervisory Committee: Ronald G. Bodkin
Department of Economics

The issue to be examined is whether flexible exchange rates result in less variability in GDP and unemployment rates. Basically, with a fixed exchange rate governments cannot allow the exchange rate to fluctuate in response to external shocks to the economy, nor are they as able to use monetary and/or fiscal policy to respond to external shocks. Since an external shock cannot be accommodated by a nominal change in the exchange rate or through monetary policy, such shocks must be accommodated by changes in real economic activity, i.e., changes in GDP and unemployment. With a flexible exchange rate, an external shock can be accommodated by a change in the exchange rate, or through monetary and/or fiscal policy and should thus have less impact on unemployment and GDP. This hypothesis is theoretically studied and explained more widely in the thesis and is tested with the data available.

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ACKNOWLEDGMENTS

I dedicate this thesis to my parents, whose sincere prayers have guided me throughout my life, may God protect them, and I would like to thank my wife for her continuous support and encouragement. I think there are no words in any language that describe part of what they have done and are doing for me.

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PREFACE

The exchange rate states the price, in terms of one currency, at which another currency can be bought. The main difference between flexible[1] rates and fixed[2] rates is that with the former the government is not committed to defending a publicly announced rate; it can resist changes it thinks are transitory and yield to changes it believes are the result of long run forces. Until the 1970s most governments maintained fixed exchange rates.

Throughout the 1950s and 1960s a long debate raged among economists and bankers about the relative merits of fixed versus floating exchange rates. The argument (with a few major exceptions) was more notable for the passions involved than for the objectivity used in assessing empirical evidence. The supporters of fixed rates held that the stability of such rates was conducive to trade and that

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[1] Floating or flexible exchange rate, an exchange rate that is not pegged by monetary authorities but allowed to change in response to changing demand and supply conditions. If government and central banks withdraw completely from the exchange markets, the float is clean. (that is, the exchange rate is freely flexible). A float is dirty when governments or central banks intervene in exchange markets by buying or selling foreign currencies in order to influence exchange rates, either with regard to trend or fluctuations.

[2] Fixed exchange rate, an exchange rate that is held within a narrow band by the monetary authorities.

floating rates might fluctuate so erratically as to disturb the free flow of international trade and to impair long-run industrial planning based on a reasonable assessment of a country's ability to sell goods abroad. In the event, exchange rates were freed in the early 1970s. None of the predicted drastic consequences ensued. Exchange rates have fluctuated, but in the main their movements have followed long-run trends due to such factors as economic activity. Short-term fluctuations have occurred, but they do not seem to have been of sufficient magnitude to upset seriously the rising flows of worldwide international trade. On the other hand, it could be noted that, in general, growth in world trade and in real output in general was more vigorous in the Bretton Woods era than in the past three decades, which suggests an opposite conclusion.

INTRODUCTION

For the last two decades exchange rates have been at the centre of policy debates in developing and developed economies. This paper deals with the relationship between the exchange rate regime and economic activity. To be more precise, this paper focuses on the effect of the exchange rate regime on unemployment and GDP. The issue to be examined is whether flexible exchange rates result in less variability in GDP and unemployment rates.

With a fixed exchange rate, governments cannot allow the exchange rate to fluctuate in response to external shocks, nor are they as able to use monetary[3] and/or fiscal[4] policy. Since external shocks cannot be accommodated by a nominal change in the exchange rate or through monetary policy, such shocks must be accommodated by changes in real economic activity, i.e., changes in GDP and unemployment, which can be large, and of long duration. With a

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[3] Monetary policy described as a central bank policy aimed at changing the rate of growth of the monetary stock or level of interest rates; for example, open market operations or changes in required reserve ratios.

[4] The adjustment of tax rates or government spending in order to affect aggregate demand.

flexible exchange rate, external shocks can in principle be accommodated by changes in the nominal exchange rate, or by monetary policy, with more moderate and less prolonged changes in real economic activity.

In the theoretical discussion, I hypothesize that with flexible exchange rates we should have less fluctuation and a smaller variance in real economic activity, GDP, and unemployment than under a fixed exchange rate regime. In the empirical analysis I use a large cross-country and time series data set to analyze empirically the effect of the exchange rate regime on the standard deviation of the unemployment rate and the standard deviation of the GDP growth rate to determine if this theoretical hypothesis is confirmed.

In chapter 2 the literature is reviewed, showing how the optimal choice of exchange rate regime is a long-standing problem in open economy macroeconomics and how various authors, from their point of view, describe the issue of the effect of the exchange rate regime on economic activity. In chapter 3 the theory behind the

hypothesis is described and I examine the theoretical effect of the exchange rate regime on economic activity, particularly unemployment and GDP. Chapter 4 presents the model to be tested and the empirical results, in order to test the hypothesis. Finally, in Chapter 5 I provide conclusions and recommendations concerning the choice of exchange rate systems.

Chapter 1

THE OPENING

If a country wishes to attain greater economy stability, should it let its exchange rate flexible or would it be better off fixing its exchange rate?

1.1 STATEMENT OF PROBLEM

I hypothesize that with flexible exchange rates we should have less fluctuation and smaller variance in real economic activity, as measured by GDP and unemployment than under a fixed exchange rate regime.

1.2 PURPOSE OF STUDY

The purpose of this paper is to investigate the insulating properties of the exchange rate regime by examining the effect of the exchange rate regime on unemployment and GDP.

Chapter 2

LITERATURE REVIEW

Should countries adopt fixed or flexible exchange rates? One-way to tackle this age-old question is to consider which exchange rate regime provides greater economic stability. The optimal choice of exchange rate system is a long-standing problem in open economy macroeconomics. The modern literature on exchange rate regimes has emphasized the existence of important tradeoffs between fixed and flexible regimes. Frankel (1995) deals with selection of an exchange rate regime, and discusses the choices faced by rapidly growing middle-income countries. He argues that the degree of openness of the country will largely determine whether it is worthwhile to adopt a fixed exchange rate and to give up monetary independence. Frankel points out that the availability of alternative means of adjustment should also be an important ingredient in deciding on what type of exchange rate regime to adopt. Frankel deals also with the selection of a nominal anchor for monetary

policy and argues that, under a given set of conditions, nominal GNP dominates the nominal exchange rate, money supply, and the price level. Argy (1992) also tackles the important issue of choosing an exchange rate regime. He points out the appropriate regime for a particular country will depend on the structural characteristics of the economy, and especially on the degree of labour market and wage rate flexibility. Edwards (1996) tackles a number of policy questions related to exchange rates. The main hypothesis of the Edwards study can be summarized in a few lines: A fundamental principle of open economy macroeconomics is that, in order to have a sustainable macroeconomic equilibrium, it is necessary that monetary and fiscal policies be consistent with the chosen exchange rate regime. This means that the selection of an exchange rate system imposes certain limitation on the extent of macro policies. Modern analysis of this issue dates back to Friedman (1953), who argued that flexible exchange rates are preferred to fixed exchange rates on the grounds that they provide greater insulation from external shocks. Under fixed exchange rates a country must

accommodate external shocks, if it is to maintain the peg, through changes in real economic activity. But floating rates blunt the impact of a foreign shock. A foreign monetary expansion[5] for example will not be transmitted to the home country because high foreign demand drives up the relative price of home goods, thereby offsetting the potentially expansionary transmission[6] of the foreign shock. Friedman wrote at a time during which there was little capital mobility[7] (Devereux & Engel 1998) among even the richest countries. Floating exchange rates maintained a zero current account balance, thus cushioning the channel for the transmission of foreign shocks. This leads to the conclusion that a flexible exchange rate regime would be a relatively stable one, while a fixed exchange rate would be more unstable. For example, to quote Friedman (1953, p. 164) "Because the exchange rate (fixed) is changed infrequently and only to meet substantial difficulties a change tends to come well after the onset of difficulty, to be postponed as long as possible, and

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[5] Monetary expansion may be described as the phase of the business cycle when output and employment are increasing.

[6] The mechanism whereby a recession in one part of the world economy spreads to other countries.

[7] Each capital can be moved with ease from one country to another.

to be made only after substantial pressure on the exchange rate has accumulated. In consequence there is seldom any doubt about the direction in which the exchange rate will be changed, if it is changed. In the interval between the suspicion of a possible change in the rate and the actual change there is every incentive to sell the country's currency if devaluation is expected or to buy it if an appreciation is expected; either can be done without exchange loss and will mean an exchange gain when and if the rate changes".

Also to quote Sohmen (1961, p. 189) "When exchange rates are not allowed to adjust to whatever level is indicated by market forces, but are held back by central bank intervention as long as there is even a slight hope that the parity can be maintained, uncertainty may at times become over-whelming".

In contrast, flexible exchange rates were regarded as offering a more stable exchange rate environment. The stable nature of a floating rate system may be illustrated in the following way. Say, for some temporary exogenous reason, a currency depreciates from its

equilibrium value. Speculators would recognize the move as temporary and would therefore buy the currency, since they expect it to appreciate in the future (i.e. they expect to be able to sell the currency for more in the future), and in so doing stabilize the exchange rates' actual movements. Thus the exchange rate, as shown in figure 1, would be expected to follow the paths denoted. The issue of whether speculators would behave in a stabilizing or destabilizing way in a regime of flexible rates became the key issue of contention between the protagonists of fixed and flexible. Friedman's position was that, for speculators

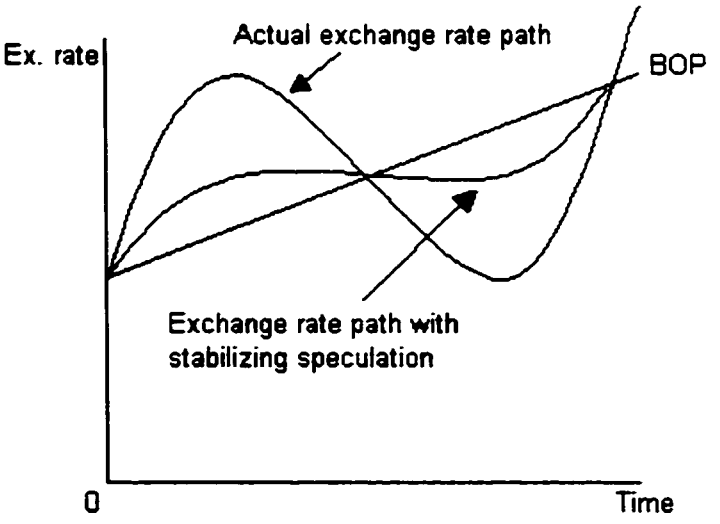

FIGURE 1 The exchange rate and speculation

to destabilize an exchange rate, they would eventually lose money and go out of business, leaving the stable speculators to determine the exchange rate. The stabilizing behavior of speculators led to the picture of a floating exchange rate regime being a tranquil one compared to the fixed exchange rate system.

One of the supposed advantages of floating exchange rates was in terms of the insulation properties offered by such a system. Both Friedman (1953) and Sohmen (1961) argued that a floating exchange rate would isolate a country from shocks emanating from the rest of the world. For example, with fixed exchange rates, a fall in demand for a country's exports would lead to a domestic recession. With a floating exchange rate, the exchange rate would depreciate to maintain competitiveness and therefore the level of overall demand.

A corollary of the last point gives an argument for floating exchange rates, namely the independence they give a country in pursuing monetary policy. Both Sohmen (1961) and Mundell (1963) argued that with fixed exchange rates an expansionary monetary policy

would result in a balance of payments deficit, which would automatically result in an eventual reversal of the policy. With floating exchange rates, however, the exchange rate would move to maintain the balance of payments in equilibrium, thus allowing the country to enjoy the effects of the expansionary monetary policy in its domestic economy.[8] In a series of papers, (Mundell 1961,1963) demonstrated that the insulating properties of a floating exchange rate diminished in the presence of capital mobility.

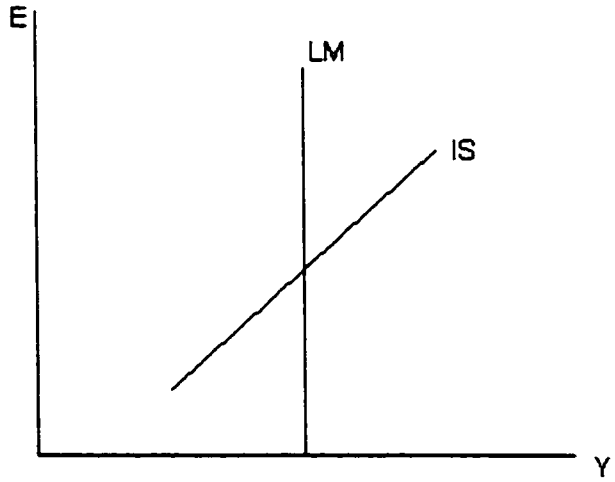

FIGURE 2 The Mundell model with flexible exchange rates

[8] For monetarists, the independence that a country obtains from flexible rates is simply in terms of its ability to pursue an inflation rate, which differs from the world rate.

The fact that the LM curve in figure 2 is vertical means that GDP for a given price level, that is, the position of the AD curve, is determined entirely in the money market (Romer 1996). Note that in the figure, E is expressed as domestic currency units per foreign currency units, so that an increase in E represents a devaluation or depreciation.

Suppose that government spending increases; this change shifts the IS curve to the right as shown in figure 3; however, at a given price level, commodity prices for instance, this leads only to an appreciation of the exchange rate and has no effect on GDP. Thus the aggregate demand curve will not move.

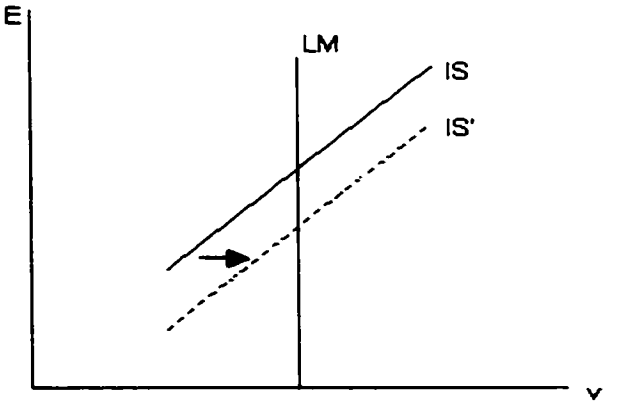

FIGURE 3 The effect of an increase in government spending with a flexible exchange rates

Assume that a fixed exchange rate regime was adopted. This requires two changes, first, to peg the exchange rate at some level E* such as E=E* as shown in figure 4, and second, the money supply becomes an endogenous variable rather than an exogenous one as in a flexible exchange rate regime. For the government to fix the exchange rate, it must be ready to buy or sell domestic currency in exchange for foreign currency at the rate E*. Therefore the regime cannot independently set M, but must let it adjust to ensure that the exchange rate remains at E*. The aggregate demand side of the regime with a fixed exchange rate consists of the LM, IS, interest rate, and exchange rate.

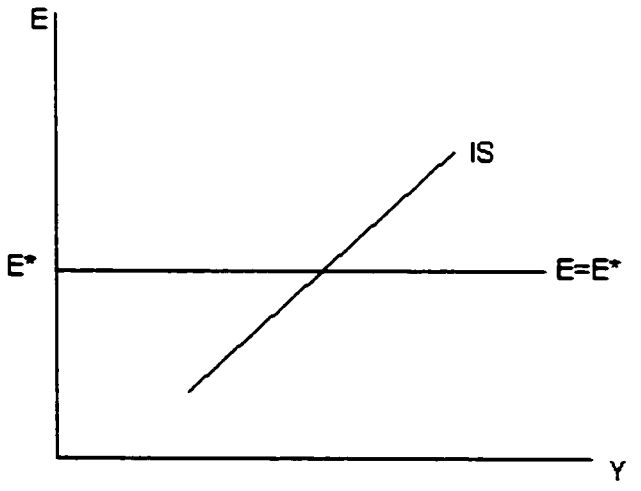

FIGURE 4 The Mundell model with fixed exchange rates

The results of this case are the opposite of these for a flexible exchange rate. Changes in government expenditures now affect aggregate demand. A rise in government spending will increase GDP for a given price level as shown in figure 5.

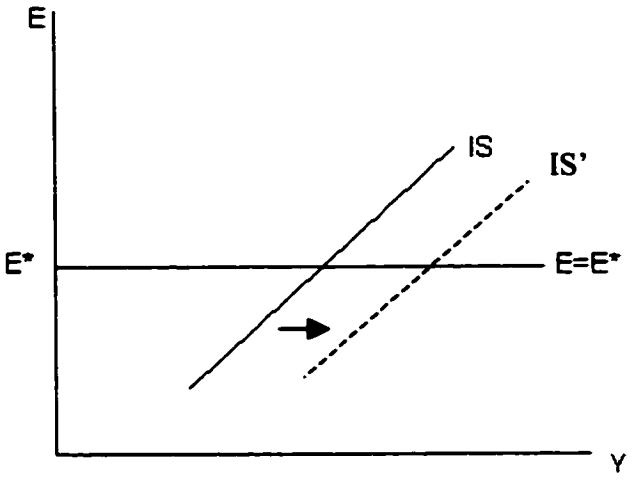

FIGURE 5 The effects of an increase in government spending with a fixed exchange rates

Disturbances in the money market, in contrast, have no effect on GDP for a given price level. A rise in the demand for money, for example, leads only to an increase in the money supply.

Finally with a fixed exchange rate, the exchange rate itself is a policy instrument. For example, devaluation stimulates net exports and thus increases aggregate demand.

The answer to the question of which is better, fixed or floating exchange rates, becomes more complicated, depending on whether the source of shocks is monetary or real; the degree of capital and other factor mobility; and the relative size of countries. Both Friedman and Mundell assumed nominal prices are sticky in the short run. Friedman argued that the choice of the exchange rate system would be irrelevant if all nominal prices adjusted instantaneously to shocks. Subsequent to Friedman and Mundell, a large number of authors examined the choice of exchange rate regime under the assumption of some sort of nominal price or wage stickiness[9]. These studies extended Mundell's analysis by incorporating the expectations of future price and exchange rate changes.

In that analysis, the choice of exchange rate regime was based on criteria, such as the minimization of the variance of output and the variance of the unemployment rate.

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[9] When wages and/or prices are slow to adjust to a situation of excess supply or demand in the labour market or product market, respectively.

In this paper I investigate the optimum exchange rate regime from a GDP and unemployment variance minimization standpoint. I am not the first to study the GDP and unemployment properties of alternative exchange rate systems. Prior studies include Enders and Lapan (1980), Helpman (1981), Aizenman (1994), and Neumeyer (1998).

The purpose of the Enders and Lapan paper is to present a theoretical analysis of the choice between exchange rate regimes. They introduce an "intergenerational" model, in which each generation lives for two periods. They derive the consumption demand for individuals of each generation under expected utility-maximizing behavior. Using these demand functions, Enders and Lapan determine the macro equilibrium under each exchange rate regime. As opposed to attaching normative significance to the stability of aggregate consumption, the authors analyze the effect of each exchange rate regime on the expected utility of individuals. While individuals are concerned about the expected value of their utility, social welfare will also depend upon the variance of utility

levels. The choice between exchange rate regimes cannot be simply related to the source of disturbances (Enders and Lapan 1980). They have shown the following points to be true. 1) If disturbances are real and internal, individual expected utility is higher under fixed exchange rates. 2) If foreign price disturbances occur, then the choice between exchange rate regimes hinges upon the degree of risk aversion. 3) Individual utility is likely to be more variable under fixed exchange rates, even if only internal disturbances are present. It was shown by Enders and Lapan that the variability of the individual's utility need not be the same as the variability of aggregate variables. And it seems that the form of the utility function and the sources of disturbances are crucial in determining which exchange regime is preferable.

There is also another aspect of exchange rate regimes, which has received little attention in a welfare context, but which is of major importance, and this is the strategic behavior of governments (Helpman 1981). Helpman has shown that the equilibrium allocation of consumption is efficient in every exchange rate regime

and that, in flexible exchange rate regimes as well as in a fixed exchange rate regimes, it corresponds to the equilibrium allocation of consumption in a barter economy. A crucial assumption on which these results are based is that expectations are self-fulfilling; that is, there are no surprises. In particular, the transfer policies are announced at the very beginning, and each government honors its declared policy.

The investigation of Helpman is based on a specification of the role of money. Helpman's framework of analysis, which incorporates money in the way that money can be used as a store of value, but it also has to be used in every market transaction, into an intertemporal model in which utility levels depend only on consumption levels. The model is used to investigate both flexible and fixed exchange rate regimes. Both regimes are evaluated and compared by Helpman in terms of efficiency and welfare levels. In a flexible exchange rate regime the perfect foresight equilibrium allocation coincides with equilibrium of a costless barter economy. In a fixed exchange rate regime there is a different equilibrium

allocation for each combination of exchange rate levels and monetary policies.[10]

Aizenman argues that the quest for a stable exchange rate may come from a different cost of exchange rate volatility. Exchange rate flexibility may affect the patterns of domestic and foreign direct investment. While private gains from marginal investment are easily interpreted, their ultimate welfare assessment is complex. Aizenman's (1994) paper examines the implications of foreign direct investment and domestic investment on the welfare ranking of exchange rate regimes. It concludes that productive capacity and employment considerations diminish the relative advantage of flexible exchange rates. This conclusion applies to both real and monetary shocks. In addition to the ranking of exchange rate regimes, Aizenman investigates the welfare effects of attempts to curb foreign direct investment by capital controls. And his model predicts that the patterns of investment may differ among exchange

[10] See also the further discussion of this paper, later on in the chapter (pp. 29-30).

rate regimes in the presence of a Phillips curve[10], the expected GNP is lower under floating exchange rate regime than under a fixed exchange rate regime, and the employment and productive capacity effects reduce the relative attractiveness of flexible exchange rates. Applying the framework adopted by Aizenman, it follows that a fixed exchange rate regime is more conductive to domestic investment and foreign investment relative to a flexible exchange rate; this conclusion applies for both real and monetary shocks. Attempts to reduce foreign investment by capital controls will tend to reduce welfare.

Welfare analysis turns out to be important. Neumeyer (1998) develops a general equilibrium model in which the issues of currency unions are designed with the purpose of eliminating exchange rate variability and insulating monetary policy from political pressures and describes an economic environment where eliminating excessive monetary variability improves welfare.

[10] The curve tracing out the relationship between the unemployment rate (on the horizontal axis) and the inflation rate or the rate of change of money wages (on the vertical axis). The long-run Philips curve is the curve (or line) tracing out the relationship between the unemployment rate when the inflation rate is stable and correctly anticipated.

Neumeyer's paper compares a monetary union with exchange rate regimes. It is shown that the adoption of a monetary union involves a trade-off between the benefits of reducing "excessive" exchange rate risk and the cost of reducing the number of assets in the economy.

In spite of the general belief that "excessive" exchange rate variability harms the economy, proving this in a formal setting has been difficult. This difficulty arises because fluctuations in exchange rates that reflect economic shocks actually help to allocate resources efficiently.

The adoption of a fixed exchange rate regime has costs. When fluctuations in the value of money reflect economic shocks, some exchange rate variability is "good" because, by making the real payoffs of nominal assets denominated in different currencies distinct, it increases the insurance opportunities available through trade in nominal assets. The loss of monetary independence entailed by fixed exchange rate regimes, or currency union, is socially costly

because it makes the real payoff of assets denominated in different currencies equivalent, effectively reducing the number of financial instruments with which economic agents can share risks.

The main result of Neumeyer's paper is that switching from a monetary regime with national central banks to a currency union increases welfare when the gain from eliminating excess monetary volatility exceeds the cost of reducing the number of financial instruments in the economy.

Devereux and Engel (1998) investigated the welfare properties of fixed and floating exchange rate regime using a two country, dynamic, infinite-horizon model. The feature of this model is that consumers maximize expected lifetime utility. They take prices and wages as given. The primary focus of Devereux and Engel's investigation is how the nature of price setting affects the optimal choice of exchange rate regime. Friedman and Mundell assumed that producers set prices in their own currency, and that those prices do not adjust when exchange rates changes. Indeed, in their models,

the law of one price holds for all goods. The type of price stickiness may be of critical importance in the analysis of fixed versus floating exchange rates. The intuition that underlies analyses reaching back to Friedman is that floating exchange rates play a stabilizing role by allowing the relative price of home goods to foreign goods to adjust, even when nominal prices remain rigid. Devereux and Engel conclude that under flexible exchange rates foreign monetary shocks do no affect domestic consumption and by contrast, they find that flexible exchange rates will always be preferable to fixed exchange rates. This introduces a channel through which the foreign shocks can affect domestic consumption. The larger the share of foreign goods in consumption, the more vulnerable will consumption be to foreign shocks.

The optimal exchange rate regime may depend on the currency of price setting. When prices are set in producer's currencies, a trade-off between flexible and fixed exchange rates is found. The variance of domestic consumption is lower under floating exchange rates, as suggested by Friedman's argument. But the volatility of the

exchange rate (Devereux and Engel 1998) under floating exchange rates will actually reduce the average level of consumption.

The paper by Devereux and Engel has addressed an old theme in open macroeconomics; the optimal choice of exchange rate regime. The novel aspect of their paper is that the comparison of regimes is done within an expected utility maximizing framework in the presence of nominal price rigidity. The exchange rate regime matters in the authors' framework for the same reasons that it did in the models of Friedman and Mundell. But they found that the normative analysis of exchange rate regimes is quite different in their framework. Different exchange rate regimes have implications not just for the variability of output, but also for the average value of this variable.

These papers however did not directly investigate the effect of the exchange rate regime on the variance of macroeconomic variables. Therefore, they don't follow directly in the tradition of Friedman and Mundell.

The framework that I adopt is a model setting the standard deviation of output and unemployment as the dependent variables and the exchange rate regime and other important variables as explanatory variables. The primary focus of the investigation is to determine how the choice of exchange rate regimes affects the standard deviation of GDP growth rate and unemployment.

In terms of unemployment, the labor market effects of exchange rates are an open question. Analysis, using data through the mid 1980's, shows that exchange rates have had significant implications for wages (Revenga 1992). When a fixed exchange rate is used as a nominal anchor, a perverse situation could result where the real wage declines, yet increases in terms of imported goods, automatically deflecting shrinking domestic demand towards imports. Revenga (1992) raised the issue that wage controls during such a period automatically lead to a preference for imported consumption on relative price grounds alone. The exchange rate may have to be adjusted to preserve some neutrality in domestic-foreign relative prices.

A recent cross industry study (Burgess and Knetter 1996) found statistically significant effects of exchange rates on employment with the sizes of these effects related to wages. However, recent work by (Campa and Goldberg 1999) found weaknesses in the implication of exchange rates for employment in US but more pronounced effects for wages. They have provided evidence on the effects that real exchange rate movements have on investment activity by manufacturing industries at the two-digit level of industrial aggregation in the United States, Japan, the United Kingdom, and Canada. The magnitude of these effects significantly evolves with the changing export and input of imports orientation of producers. The importance of each of these exposure channels for the marginal profitability of capital and implications of exchange rates depend on a set of pass-through and demand elasticities.

Specifically, the exposure of producer profitability and investment to exchange rates, 1) declines to the extent that exporters pass through exchange rate movements into the local currency prices of their exports, 2) increases in relation to the price elasticity of foreign

demand, 3) increases in relation to the exchange rate elasticity of producer prices in domestic markets, 4) declines in relation to the price elasticity of demand in domestic markets, and 5) declines to the extent that the producer relies on imported inputs into production and to the extent that exchange rate movements are passed through into the domestic currency price of these imported inputs. Campa and Goldberg examine the implications of exchange rates theoretically and empirically. They show that investment responsiveness to exchange rates varies over time, positively in relation to sectorial reliance on export share and negatively with respect to the share of imported inputs in production.

In general, there has been little work comparing the properties of exchange rate regimes since the classic paper by Helpman (1981), who showed that the choice of exchange rate regime is essentially immaterial. Moreover, there is a great deal of informal discussion on the connection between exchange rate regimes and economic activity, though I am aware of no formal analysis of this link. In order to carry out an interesting comparison of the effect of fixed

and flexible exchange rates on economic activity. I attempt, in this paper, to fill this gap by studying specifically, theoretically and empirically, the effects of exchange rate regimes on unemployment and GDP.

The argument is based on the observation that under flexible rates we might be expected to have less fluctuation in economic activity, such as unemployment. Pegged currency regimes appear to have more fluctuation in macroeconomic activity behavior than flexible regimes, which are able to absorb external shocks by depreciation or appreciation of the currency rather than through changes in real economic activity.

It can be noted that the existing literature on the choice of exchange rate regime and its role in the macroeconomic policy framework in a given country is extensive. There is considerable discussion in the literature as well on the cushioning effect of a floating exchange rate regime in the presence of external shocks. While theoretical examination of this topic is extensive, there is little empirical work

that has been undertaken to confirm this stabilizing effect of floating exchange rates, or to confirm the inverse, the economic volatility that one might expect under a fixed exchange rate regime. In particular, no past work has been found that empirically measures the effect of the choice of exchange rate regime on the variability of real GDP growth or unemployment. As such, this thesis aims to fill this gap in the literature by empirically measuring the effect of the exchange rate regime on the standard deviation of real GDP growth and unemployment.

Chapter 3

CONCEPTUAL FRAMEWORK

The debate on the desirability of alternative exchange rate regimes stems largely from the fact that exchange rates are perceived as playing two different rules. On the one hand, exchange rates, jointly with other policies, play an important role in helping maintain international competitiveness. On the other hand, they help in promoting macroeconomic stability and low inflation. In a way, when making decisions regarding exchange rate action, economic authorities face a classic policy dilemma.

3.1 THE THEORY

The purpose of this paper is to investigate the insulating properties of the exchange rate regime by examining the effect of the exchange rate regime on unemployment and GDP.

Past analysis emphasized the ability of a flexible exchange rate to isolate domestic economies from economic disturbances originating

abroad. Flexible exchange rate systems allow countries to use fiscal and/or monetary policies, independent of balance of payments[11] concerns, to pursue domestic macroeconomic goals, i.e. unemployment and GDP.

One of the major reasons cited for the breakdown of fixed exchange rate regimes in the past was the unwillingness of countries to import recessions from the rest of the world in order to maintain a stable exchange rate. However, recently, the insulating properties of flexible exchange rates in relation to fixed exchange rates have been viewed with increasing skepticism in the academic literature.

Therefore it is interesting to examine flexible versus fixed exchange rates during the 1960 - 1997 period and their effect on economic activity, namely unemployment and GDP.

With a fixed exchange rate governments cannot allow the exchange rate to fluctuate in response to external shocks, nor are they as able to use monetary and/or fiscal policy. Since external shocks cannot

[11] The summary figure calculated from balance of payments credits less balance of payments debits, with certain transactions excluded from the calculation.

be accommodated by a nominal change in the exchange rate or through monetary policy, such shocks must be accommodated by changes in real economic activity, i.e. changes in GDP and unemployment, which can be large and of long duration.

With flexible exchange rates, external shocks can be accommodated by changes in the nominal exchange rate, or by monetary policy, with more moderate and less prolonged changes in real economic activity.

Consider the aggregate demand and aggregate supply space. Suppose we receive a negative external demand shock that will put our economy into a recession and let's consider what will happen under a floating exchange rate and under a fixed exchange rate. Under a floating exchange rate the economy is going to enter a recession, and the monetary authorities may respond with monetary policy that increases the money supply and decreases the interest rate. This will increase aggregate demand, offsetting the original

negative external shock, returning the economy to the original equilibrium. (see figure 6)

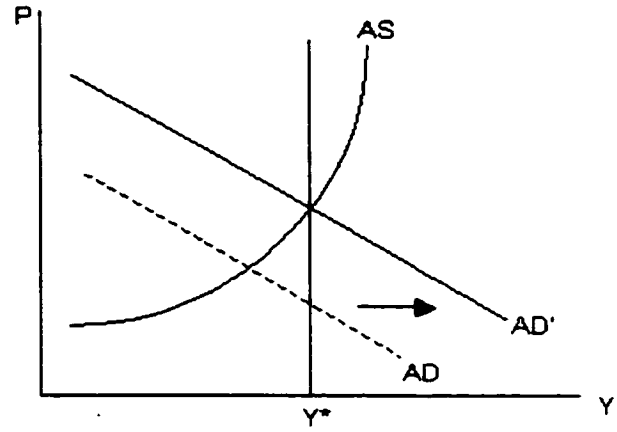

FIGURE 6 Flexible exchange rate regime

Furthermore, some of the negative external shock could be accommodated by a depreciation in the exchange rate. This would increase exports, decrease imports and sustain demand. Therefore a recession, because of intervention by the monetary authority and the effect of the exchange rate, should be short and minor.

Under a fixed exchange rate and the same negative aggregate demand shock, the exchange rate is unable to adjust. Therefore there will not be any depreciation in the exchange rate so there will be no increase in exports or imports, to offset this shock. Also the

monetary authority cannot use monetary policy to increase aggregate demand to bring the economy back to long run equilibrium. What is required is a sustained period of unemployment that will put downward pressure on wages. As wages fall, the supply response will increase aggregate supply and bring the economy back to the full employment level of output, but at lower real wages (see figure 7). Therefore under a fixed exchange rate the recession is going to be long, as it takes a longer time for wages to adjust because wages are sticky, and because the authority cannot intervene and bring us back quickly to full employment. So therefore, I hypothesize that the variation of GDP and unemployment will be higher under fixed exchange rates.

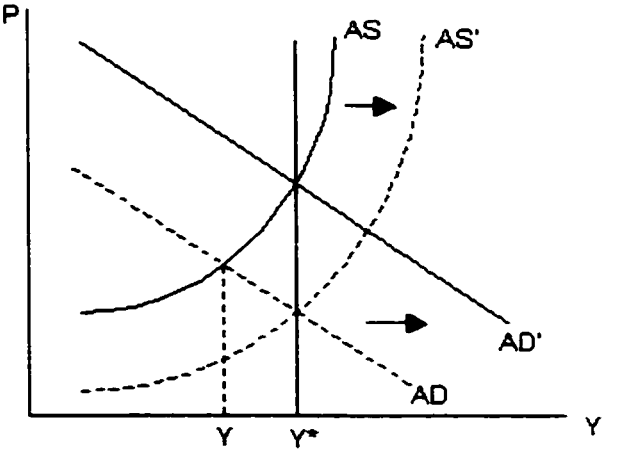

FIGURE 7 Fixed exchange rate regime

Similarly, we could make an argument based on a positive external shock on the economy. If aggregate demand increased under a flexible exchange rate, the monetary authority can use restrictive monetary policy to bring aggregate demand back to its original state. Therefore, the boom would be of short duration. Under a fixed exchange rate this is not possible because independent monetary policy is not possible. Therefore, in this case low unemployment will push wages up, which decreases aggregate supply. This will tend to happen faster than a wage decrease, because people will accept a wage increase much faster than a wage decrease, but there is still going to be more variation likely under a fixed exchange rate.

Much of the preceding argument is based on the fact that monetary policy cannot be used under fixed exchange rates.

Again, consider the aggregate demand and aggregate supply model and assume that the economy is in long run equilibrium. If there is an increase in the money supply, (an independent monetary policy action) and a resultant domestic price increase, under fixed exchange

rates the prices of domestic goods will rise and there would be a substitution toward imported goods, a fall in exports and an unsustainable balance of payments deficit would develop. However under floating rates, rather than a balance of payment deficit arising, the currency will depreciate, clearing the foreign exchange market. This means, of course that government authorities can choose any rate of increase in the money supply they desire and differences between domestic inflation[12] and foreign inflation will be accommodated by changes in the exchange rate.

It also should be recognized that some of the external shocks could be reflected in price changes[13] not only GDP changes. This will depend on the slope of the aggregate supply curves (see figure 8). For the purpose of this paper, however, we are mainly concerned with real fluctuations, and therefore will focus on GDP and unemployment rather than prices.

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[12] A continuous increase in the average level of prices.

[13] See, for example, Romer(1996) and Branson (1989). Also empirical evidence has been presented by Dornbusch and Krugman (1976).

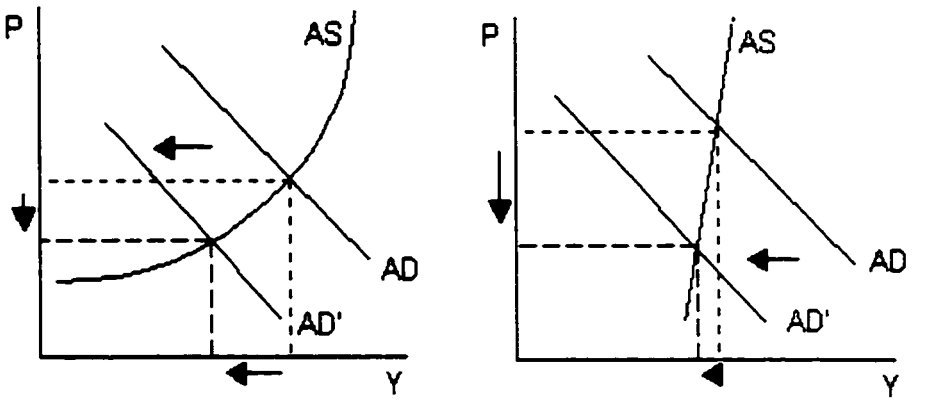

FIGURE 8 The impact of external shocks on price level

The discussion up to this point has provided a fairly straightforward, simplistic approach to why economic activity should be more variable under a fixed exchange rate regime. Of course, reality is significantly more complicated than this and the following discussion delves into the issue in greater detail.

3.2 Flexible Versus Fixed Rates

The advantage of fixed rate versus flexible exchange rates has been widely debated throughout the post-war period. Initially, flexible exchange rates were viewed as providing an extra degree of freedom that would speed up adjustment and allow internal and external equilibrium to be achieved simultaneously. In practice, flexible

exchange rates proved more variable than expected and displayed an apparent tendency to overshoot the equilibrium range, thereby complicating the task of stabilization policy and introducing unnecessary variability into asset prices. In addition, rigid real wages led to inflationary concerns and wage-price spirals following depreciation in some countries.

Positive arguments then emerged in favor of a regime of fixed exchange rates: disinflation could be speeded up and made less costly if high inflation countries credibly fixed their exchange rate to that of a low inflation country; fixed exchange rates could limit the undesirable strategic use of exchange rate policy, if coordination of macroeconomic policies could not be achieved; and fixed exchange rates would reduce the costs of foreign exchange transactions and enable investors in different countries to pursue real economies of scale and specialization unencumbered by long run concerns about exchange rates and relative input costs and output prices in different countries. The disinflation argument of course presupposes that one

is pegging to a hard currency, one that exhibits strong monetary discipline and has a history of low inflation.

In spite of these considerations, exchange rate flexibility may, nevertheless, aid adjustment over the short to medium term under some conditions. First, over-valuations lead to lost foreign markets and fixed re-entry costs may make over-valuation an expensive path to disinflation as compared with a combination of depreciation and domestic demand tightening. More generally, however, fixed re-entry costs argue against over-valuation as a disinflation device. Second, if the supply of tradable goods responds more vigorously to an increase in profit margins than does the supply of non-tradable (say because non-tradable markets are less competitive), then a depreciation may be able to improve the short run (but not the long run) inflation-output trade-off. Third, it is sometimes argued that workers are more willing to accept a common real wage decline stemming from exchange rate depreciation than to negotiate slower wage growth on a settlement-by-settlement basis. Where consensus can be reached, a nominal depreciation that translates into a real

depreciation may be viewed as a relatively quick and fair method of lowing real wages. Fourth, when the starting point is low or moderate inflation and nominal wages are sticky in the downward direction, the effectiveness of unemployment in lowering real wages may be limited. Fifth, small commodity-exporting economies subject to large terms of trade[14] shocks may be better able to stabilize inflation by allowing the exchange rate to buffer the effects of shifts in the terms of trade. None of these considerations suggest the depreciation of the exchange rate on a consistent basis is desirable or effective, but they indicate that there may be circumstances when the degree of freedom given up by fixing exchange rates may be costly.

Empirical models of behaviour under fixed and flexible exchange rates produce mixed results[15]. Flexible exchange rates are found

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[14] The average price of goods sold divided by the average price of goods bought. Often used to refer to the prices of a country's export and import goods.

[15] This appears to be the intuition behind the differing results found in the literature comparing outcomes under fixed and flexible exchange rate regimes. For example, Minford, Rastogi and Hughes-Hallett (1991) find that, if the objective function is defined in terms of output and inflation, none of the EMS countries would choose to enter into EMU, although some would if exchange rate stability were given enough weight. In Frenkel, Goldstein and Masson (1989) monetary policy cannot target nominal GDP very well in the short term, so there is no unambiguous ranking of regimes. McKibbin and Sachs (1989) also find ambiguous rankings of the various policy rules.

superior in responding to disturbances when: i) labor market expectations are mainly adaptive or backward looking; ii) the benefits of strict policy coordination are small; iii) domestic variables, such as output and inflation, are affected more by domestic monetary policy than by exchange rates; iv) the variability of domestic output does not accommodate inflationary shocks; and, v) the variability of domestic asset prices increases in response to fixed exchange rates. The first three conditions are features of most structural macro-econometric models and are often believed to obtain in the real world. Hence, as a generalization, such models will suggest that a fixed exchange rate regime is superior in responding to shocks only if targeting the exchange rate has a much higher degree of credibility than targeting domestic variables, so that neither (i) nor (v) hold, and the domestic monetary authorities are thought largely unable to anchor successfully the price level so that (iv) does not hold.

Policy makers across OECD countries appear to attach widely differing weights to exchange rate targeting. Obviously, many ERM

countries were constrained by the exchange rate bands in their ability to target domestic variables directly. Increasingly, non-EC countries are also tying their currencies of those countries of the Euro. In other open economies (Canada and New Zealand), monetary authorities have explicit inflation targets, which may not be consistent in the short to medium term with a stable exchange rate. The largest two countries, the U.S. and Japan, by and large appear to target domestic indicators in the stance of monetary policy.

The empirical evidence does not provide a strong basis for concluding that adjustment to disturbances under fixed exchange rates can be achieved as easily as under flexible rates. It is doubtful that credibility greatly lowers the cost of disinflation. Englander and Egebo (1992) were able to find little evidence that the relative stability of exchange rates within the ERM in the years prior to EURO led to a downward shift in inflation expectations; a result consistent with most other studies. The initial members of the ERM experienced sharp declines in inflation during the 1980s that were

specially pronounced in those countries which entered the ERM with high inflation rates. At the same time, however, significant increases in unemployment also occurred that were only partially reversed during the upturn from 1987 to 1990. The simultaneous rise in unemployment and decline in inflation makes it difficult to assess whether the benefits of EMR membership came primarily in the form of enforcing disinflationary policies via an exchange rate constraint, or whether such a constraint itself contributed to improving the credibility of the commitment to lowering inflation rates and served to directly reduce inflation expectations. Nor does policy coordination, in the strict sense of setting joint quantitative targets, appear to produce greatly improved outcomes.

3.3 EXCHANGE RATE AND ECONOMIC ACTIVITY LINKAGES

Concerns about fixed exchange rates deepened in the wake of the recent financial crises in Asia. Fixed exchange rate experiments have been criticized for other reasons as well, such as encouraging real appreciation that may restrain growth. In view of such criticisms [Dornbusch and Warner (1994)], policies geared towards keeping

the real exchange rate competitive not only help to avoid balance of payment crises, but also encourage output growth. The belief that a competitive exchange rate encourages exports, and hence growth, is a fundamental tenet of the conventional wisdom of macroeconomic management. However, many developing countries have tended to resist devaluation, partly because of concerns that such a policy would be contractionary, not expansionary. This view derives from the experience of countries such as Mexico (Kamin and Klau (1995)), where real depreciations of the currency have consistently been associated with declines in output and employment, while real appreciation have been linked to expansion. Among the East Asian countries more recently, the collapse in currency values has taken place along side a sharp slowing of economic activity. The possibility that devaluations are contractionary has received considerable theoretical attention (see, among others, Diaz-Alejandro (1988), Cooper (1971), Krugman and Taylor (1978), and Lizondo and Montiel (1989)). Theoretical treatments of currency devaluation generally conclude that is stimulates economic activity.

The initial increase in the price of foreign goods relative to home goods is presumed to produce an excess demand for home goods. The possibility that price movements caused by devaluation will create enough losers in real terms to cause an initial excess supply of home goods is almost always left out (Krugman and Taylor 1978). The dominant view was that the substitution effects engendered by a real devaluation were likely to prove sufficiently strong so as to assure that the net effect on output and employment would be expansionary, in spite of a countervailing negative real balance effect and problematical income distribution effects. The Krugman and Taylor paper formalized several channels of contractionary influence likely to prove particularly relevant in developing countries, and gave rise to a burgeoning literature exploring these and a variety of other macroeconomic channels through which a nominal devaluation could cause output to contract. This oversight persists, even though there is substantial empirical evidence suggesting that devaluation often reduces aggregate demand (Cooper 1971). Even a few theorists like Diaz-Alejandro and Cooper were among the first to

raise the possibility that devaluation could prove contractionary in developing countries, and others have suggested that falling output and employment after devaluation are quite frequently to be expected.[16] These analyses, however, have had little impact on thinking about exchange rates.

As discussed further below, many empirical analyses[17], both multi-country panel regressions and models applied to individual countries, also support the hypothesis that devaluation leads to contraction rather than expansion. Edwards (1989) regresses real GDP for 12 developing countries on the nominal and real exchange rate, government spending, the terms of trade and measures of money growth. He finds that even holding other factors constant, devaluations tended to reduce output in the short run; his results for the long run effects of a real devaluation were more mixed. Agenor

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[16] International economists have known the possibility that devaluation will produce a fall in output for many years, but theoretical treatments are rare. It's argued that when trade is not initially in balance, this made a contractionary effect from devaluation more likely starting from an initial deficit. This argument was confirmed in a general equilibrium model by Cooper (1971). Diaz-Alejandro (1988) advanced another argument for contraction following devaluation, arising from the redistribution of income from wages to profits.

[17] In the panel regression studies, tests have been implemented by summing coefficients on a few lags of the exchange rate (Edwards (1989), Agenor (1991)); however, this may not be adequate if the lags in the effects of exchange rate changes are quite long, as suggested by Morley (1992).

(1991) uses a pooled sample of 23 developing countries to regress output growth on lagged levels of the real exchange rate and on deviations of actual from expected changes in the real exchange rate, government spending, the money supply and foreign income. He finds that surprises in real exchange rate depreciation actually boost GDP growth. And Morley (1992) analyses the effect of real exchange rates on GDP during 28 devaluations in developing countries, holding constant the terms of trade, import growth, money supply and the fiscal balance. He finds that depreciations of the level of the real exchange rate reduce output over a period of two years. However, in this regard, attempts to maintain unsustainable pegs and subsequent devaluations may also increase the variance of GDP and unemployment.

3.4 Supply Side Effects of Exchange Rates

Two of the biggest macroeconomic shocks to occur in the last quarter of a century were the dramatic changes in the world prices of primary commodities and in the level of US interest rates. What are the effects of these external events (or of any shock in the terms

of trade) on a small, open economy? To answer questions concerning raw material prices, we must modify the structure of the model so that imports are intermediate products. This modification permits exchange rate changes to affect the position of the aggregate supply curve. A similar modification of the basic model also allows a fuller analysis of foreign interest rate increases; any resulting depreciation in the domestic currency can have stagflationary[18] effects since it raises the cost curves of domestic firms.

Supply side effects of exchange rates imply that a depreciation of the domestic currency raises the cost of production directly. Thus, even if the aggregate supply curve is horizontal, its position shifts up as a result of the depreciation in the domestic currency. This effect causes higher prices and lower output. The overall effect on output is ambiguous, however, since this contractionary effect on aggregate supply competes with the standard expansionary effect of domestic currency depreciation on aggregate demand. In explaining the effect

[18] The coexistence of a high rate of unemployment (stagnation) and inflation.

on GDP and unemployment, this will increase variation in GDP and unemployment under flexible exchange rates.

Thus demand-side effects should mean the standard deviation in GDP and unemployment is less under flexible exchange rates but the supply-side effects mean the standard deviation in GDP and unemployment is higher under flexible rates. These are offsetting effects, but we should think that demand-side shocks would be the prevalent ones and of greater effect.

Chapter 4

METHODOLOGY

Disagreements can arise about the variables used to measure economic stability, the theoretical structure of the model used to compare exchange rate regimes, and the relative importance and influence of various other variables on economic stability. No one model would satisfy all of these various concerns. The model proposed here is one attempt to provide some evidence and insight as to the effect of the exchange rate regime on economic stability. There are no doubt other models that could also be proposed. Nonetheless, the model proposed here is believed to be unique and to present an approach that has not been previously used to address this issue.

4.1 THE MODEL

I want to examine the effect of the exchange rate regime on economic activity, and how macroeconomic activity fluctuates in

response to economic shocks. So the model constructed has the standard deviation[19] of economic activity, for example unemployment and GDP growth, as the dependent variable, and the exchange rate regime and other important determinants of GDP and unemployment variability as explanatory variables.

The model[20] used is as follows,

$$\sigma_{Unemployment} = \gamma + \beta_1 D_{Xrate} + \beta_2 D_{Oil} + \beta_3 \sigma_R + \beta_4 \left(\frac{X+M}{GDP} \right) + \beta_5 GDP_{PC} + \varepsilon$$

$$\sigma_{GDP} = \gamma + \beta_1 D_{Xrate} + \beta_2 D_{Oil} + \beta_3 \sigma_R + \beta_4 \left(\frac{X+M}{GDP} \right) + \beta_5 GDP_{PC} + \varphi$$

where

γ : is the constant term;

σ *Unemployment* : is the standard deviation of unemployment;

σ *GDP* : is the standard deviation of the growth rate of GDP;

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[19] For a random sample of size n from a distribution with mean μ and variance σ^2. The sample standard deviation is defined to be the nonnegative square root of the sample variance.

[20] For the model constructed, in the regression analysis, I used in some regressions the initial GDP, which is illustrates the GDP per capita at the beginning of the observation period, and have the same measurements for GDP per capita.

Dcrate : is the exchange rate dummy variable, which = 1 if flexible and = 0 if fixed;

Doil : is the Oil shocks dummy variable, which = 1 if the observation period involve the years 1973 or 1978 and = 0 otherwise;

σR : is the standard deviation of interest rate;

(X+M)/GDP : is the value of exports and imports as a function of GDP and represents the degree of openness of the economy; and

Per Capita GDP : is the GDP per capita for 1980.

It should be noted that I used a variable representing the variation of monetary policy (the interest rate), which could have an independent effect on the variation of GDP and unemployment. One could also consider the effect of the other main tool of government, fiscal policy. Variations in fiscal policy, perhaps as measured by government expenditures, could also reasonably be expected to influence the variance of GDP and unemployment. Unfortunately, fiscal policy data (government expenditure) is not reliable and is difficult to measure, especially for developing

Therefore, I thought it better to leave this variable out rather than include a variable with considerable measurement error and missing observations.

4.2 THE CHOICE OF DEPENDENT VARIABLES

This thesis has focused attention upon the relationship between the exchange rate regime and the variance in the level of real economic activity. The concern is that the choice of exchange rate regime may affect the variability of unemployment and GDP. Therefore, growth of real GDP and the unemployment rate were selected as the two variables most reflective of overall economic activity. Since it is the variability of these variables that is of interest, the standard deviation of these variables over the observation period are used as the left hand side variables.

4.3 THE CHOICE OF INDEPENDENT VARIABLES

Oil shocks: There are several shocks that could cause GDP and unemployment variation, and because of the importance of oil as a source of power, the skyrocketing price of oil had a powerful effect

on all oil-importing countries' economic activity, such as unemployment and GDP. In a brief period during 1973, the Organization of Petroleum Exporting Countries (OPEC) doubled and then redoubled the prices that importers had to pay for oil. In 1978, world oil prices more than doubled again. I used oil shocks as a dummy variable where D = 1 if the observation period includes 1973 or 1978 and = 0 otherwise.

Interest rate: Fluctuating interest rates may affect GDP and unemployment through the effect of monetary policy on the rate of interest, and then the effect of interest rates on investment demand for example, while investment demand, which causes a change in aggregate demand, affects GDP and unemployment.

Degree of openness[21]: The degree of openness of an economy might also have an effect on the variance of GDP and unemployment. The more open an economy is, the more vulnerable it is to external shocks. This vulnerability will result in greater

[21] An open economy is an economy where exports and imports are large relative to domestic or national product. Exports and imports are large in relation to GDP and unemployment, and they are important in determining aggregate expenditures.

variation in GDP and unemployment. This is an effect independent from the choice of exchange rate regime. Therefore, the variable, defined as exports plus imports as a percentage of GDP, is included to correct for the independent influence.

Per capita GDP[22] ***(1980)*****:** Countries with lower levels of GDP per capita tend to exhibit greater variation in GDP than wealthier countries with higher GDP per capita. Most developing countries exhibit considerable variation in GDP growth; growing at rates up to 10% in some years while having significantly negative growth rates in other years. Developed countries, on the other hand, tend to exhibit more stable growth patterns, achieving neither the spectacular positive growth rates of developing countries nor the significant negative growth periods of developing countries. Therefore, including GDP per capita should correct for this perceived greater variation in GDP growth rates among poorer countries.

[22] As noted previously, some regressions were undertaken using GDP per capita as measured at the beginning of the observation period, called initial GDP.

It should be noted that this variable is problematic for observations that include many years, because the GDP level can change significantly over the observation period. As such, Canada whose observation period is from 1975 to 1997 spans 23 years, over which GDP grew considerably. Germany on the other hand, has an observation period of 1992 to 1997. In the data, these two countries appear to be at a similar level of development using 1980 GDP per capita. Of course, Canada at the beginning of its observation period had a considerably lower level of GDP per capita than Germany at the beginning of its observation period. This problem is addressed by also including in some tests initial GDP per capita, to indicate relative levels of development for specific observation periods. However this alternate variable is also imperfect, because the level of development as measured by GDP per capita can change significantly over long observation periods.

4.4 DATA SOURCES AND MEASUREMENTS[23]

For 151 countries in the period 1960-1997, all the data used in the tables are from ILO database, ILO's yearbook of labor statistics, IMF (International Monetary Fund), WB (World Bank) data and statistical books, World Development Indicators (WDI) and Statistics Canada.

GDP Growth (annual %): This is measured as the annual percentage rate of growth of GDP at market prices based on constant local currency. Aggregates are based on constant 1995 U.S. dollars. GDP measures the total output of goods and services for final use occurring within the domestic territory of given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser values (market prices) is the sum of gross value added by all resident and non-resident producers in the economy plus any taxes and minus any subsidies not included in the value of the products.

[23] For more information on the data measurements consult the indicated sources.

Unemployment: Unemployment, total (%of total labor force). Unemployment is the share of the labor force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country.

Exchange rate: For flexible exchange rate regimes I used a dummy variable = 1 and = 0 for fixed exchange rate regimes. For multiple exchange rate regimes, 1 is used for flexible exchange rate observation periods and 0 for fixed exchange rate observation periods. (A dirty float is treated as a flexible rate regime.)

Oil shocks: There is an effective oil shock to all observations in the years 1973 and 1978. Thus the dummy variable = 1 if the observation includes one of or both of these years.

Interest rate: Real interest rate (%). Real interest rate is the standard deviation of the deposit interest rate less the rate of inflation as measured by the GDP deflator.

Degree of openness: Exports of goods and services (%GDP) plus imports of goods and services (%GDP). Exports and imports of

goods and services represent the value of all other market services provided to or received from the rest of the world. Included is the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. Labour and property income is excluded. Transfer payments are excluded from the calculation of GDP.

Per capita GDP[24]: GDP per capita is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollars in the United States. GDP measures the total output of goods and services for final use occurring within the domestic territory of given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser values (market prices) is the sum of gross value added by all resident and non-resident producers in the economy plus any taxes and minus any subsidies not included in the value of the products.

[24] Initial GDP is based on purchasing power parity (PPP) and have the same measurements for GDP per capita.

4.5 DATA ANALYSIS

We used an oil shock dummy because there are several shocks that could cause GDP and unemployment variation. Shocks could cause GDP and unemployment to vary considerably. Therefore, some observation periods that included the oil shock years should be expected to have more GDP and unemployment variation. This variation is thought to be independent of the exchange rate regime. Inclusion of this dummy variable for oil shocks corrects the data for those shocks and we chose the dummy 1 in the periods 1973 and 1978. If the observation spans any one of those years, then that observation got 1 for the dummy variable.

Fluctuating domestic interest rates can affect GDP and unemployment, and we want to make sure that variation arising from interest rate changes is accounted for in the data and that variation in GDP and unemployment, resulting from interest rate changes, don't get attributed to the choice of exchange rate regime. We drop the interest rate in some regressions because while interest rates determine GDP variation and variation in unemployment, it is

also true that variation in unemployment can cause changes in interest rate because, when GDP falls, the authorities may try to lower the interest rate. If there is a large change in GDP and unemployment, the monetary authority may be expected to change interest rates.

Initial GDP or GDP per capita was included because we might expect countries that have lower GDP per capita to be more volatile, whereas, in large economies with large GDP per capita, we might see smaller changes in GDP and unemployment. When developed countries go into recession, a -0.5% fall in GDP might be the result. However, when developing countries go into recession, a -10% fall in GDP is not uncommon. Therefore part of that variability is a function of the size of economy and GDP per capita. This variable is dropped when the sample was only OECD countries and we drop it when the sample is limited to developing countries because these countries' GDP levels are more similar.

Chapter 5

FINDINGS AND DISCUSSION

In this section, the model constructed in chapter 4 is applied to examine and analyze the effect of the exchange rate regime on unemployment and GDP. I then check the robustness of the results represented in the following tables extensively.

5.1 DESCRIPTION OF FINDINGS[25]

*All Countries

Table 1 *Dependent Variable: σ GDP*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	5.20	.954	5.451	0
DXRate	-1.40	.764	-1.84	.068
Doil	.518	.735	.705	.482
σR	.010	.010	1.04	.298
Opnss.	.008	.069	.123	.902
P.C. GDP	-.214	.109	-1.96	.053

R-SQUARE = .1040

[25] See appendices for more details.

Table 2 *Dependent Variable: σ Unemployment*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	1.545	.571	2.706	.009
DXRate	-.165	.347	-.477	.635
Doil	.154	.363	.423	.674
σR	.070	.040	1.75	.086
Opnss.	-.015	.027	-.561	.577
P.C. GDP	.007	.051	.146	.884

R-SQUARE = .0794

*Developed Countries

Table 3 *Dependent Variable: σ GDP*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	1.907	1.360	1.40	.180
DXRate	-.013	.397	-.034	.973
Doil	-.444	.406	-1.09	.291
σR	.196	.100	1.960	.068
Opnss.	.066	.046	1.41	.177
P.C. GDP	-.057	.094	-.601	.556

R-SQUARE = 0.3666

Table 4 *Dependent Variable: σ Unemployment*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	1.894	2.113	.896	.385
DXRate	.675	.528	1.278	.222
Doil	.382	.434	.882	.393
σR	.135	.187	.725	.480
Opnss.	.044	.091	.482	.637
P.C. GDP	-.174	.132	-1.32	.208

R-SQUARE = 0.3694

*Developing Countries

Table 5 *Dependent Variable: σ GDP*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	4.954	1.178	4.20	0
DXRate	-1.448	.953	-1.52	.132
Doil	1.059	.985	1.07	.285
σR	.011	.011	.970	.334
Opnss.	-.030	.089	-.335	.738
P.C. GDP	.027	.291	.093	.926

R-SQUARE = 0.0642

Table 6 *Dependent Variable: σ Unemployment*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	1.369	.678	2.02	.054
DXRate	-.536	.464	-1.156	.258
Doil	.593	.621	.955	.348
σR	.062	.044	1.396	.175
Opnss.	-.056	.035	-1.624	.116
P.C. GDP	.295	.152	1.943	.063

R-SQUARE = 0.2566

*Multiple Exchange Rate Countries

Table 7 *Dependent Variable: σ GDP*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	5.182	.853	6.078	0
DXRate	-.549	.752	-.730	.469
Doil	-.580	.836	-.694	.491
σR	.005	.006	.778	.441
Opnss.	-.076	.057	-1.33	.189
P.C. GDP	-.108	.120	-.897	.374

R-SQUARE = 0.1001

Table 8 *Dependent Variable: σ Unemployment*

Variable	Coefficient	Std.Error	t-Stat.	Prob.
Constant	.569	.888	.641	.532
DXRate	-.345	.628	-.549	.592
Doil	-.813	.783	-1.04	.317
σR	.178	.071	2.48	.026
Opnss.	.002	.031	.075	.941
P.C. GDP	.071	.090	.782	.447

R-SQUARE = 0.4205

Tables 1 through 8 present the results from ordinary least squares[26] estimation of the equation constructed in chapter 4. Using the standard deviation of GDP growth as a dependent variable, in Table 1, which includes all countries and all observations regression results, we found that the effect of the exchange rate regime was significant at 10% level and of the correct sign to what we expected. This indicates that fixed exchange rates lead to greater variation in GDP growth. The coefficients of the other variables, interest rate, degree of openness and GDP per capita, were of the right sign, the oil shock variable was of the wrong sign, though none were significant at the 10% level. It must be admitted that Table 3, which

[26] The method of least squares has statistical properties that have made it one of the most powerful and popular methods of regression analysis. See "*Basic Econometrics*" by Gujarati, D. for more details.

presents the regression results for developed countries only were not conclusive. The coefficient on the exchange rate variable was not significant, though it was of the correct sign. The other variables were similarly not significant. The results obtained in Table 5 for developing countries, were similar indicating that the effect of the exchange rate regime is not significant though it was of the correct sign to what we expected. The other coefficients for the other variables were of the right sign, but also, not significant at the 10% level. In Table 7, which represents the regression results for the countries that have a multiple exchange rate regime, those that had observations under a fixed and flexible exchange rate regime, we found that, except for the degree of openness of the economy and the oil shock coefficients, the coefficients were of the correct sign, but again none were significant.

The results using the standard deviation of the unemployment rate as the dependent variable are illustrated in Tables 2, 4, 6 and 8. These results do not support the hypothesis. The exchange rate variable which of the correct sign in all but Table 4, was not

significant in any of the equations. The other variables exhibited very mixed results, often of the wrong sign and rarely significant. This perhaps can be explained because variation in the labour market can be measured by changes in either wages or the unemployment rate. Therefore, the effect of the variables may not be fully expressed by unemployment alone.

In short, in the GDP equations, the exchange rate regime is both significant and of the right sign, therefore, the results are not very robust and inconclusive. In the unemployment equations, the results provide no evidence in support of the hypothesis.

We also ran some other tests leaving out the standard deviation of interest rate, degree of openness, initial GDP, P.C.GDP or combination of these variables, and in many of the results, as shown in appendix 2, the exchange rate regime was significant and of the right sign in the GDP equations. While the results for GDP in the entire sample and in the sub-sample of developing countries are fairly robust, the results are not as a robust nor as in-line with the

hypothesis as hoped for. This may be because there are many omitted variables in the equation. There are many factors that affect GDP, such as the political situation in a country, commodity prices, world commodity prices, financial crises, banking failure, fiscal policy effects, etc. There are clearly many things that we are unable to measure and we are unable to use in our model, and therefore this allows room for omitted variable bias[28] to enter in the equation.

The fact that in a couple of the equations the coefficient on the exchange rate variable was significant and of the right sign, and the signs on other independent variables were generally of the correct sign, negative or positive, leads us to think that there is some validity in the results showing that flexible exchange rates lead to more stability in GDP, though admittedly this evidence is weak. In the unemployment equation there is no evidence that the choice of exchange rate regime affects the standard deviation of unemployment rate.

[28] If a "true" model had been defined by a set of coefficients omitting one or more of the independent variables from the model would have produced biased estimates.

Also the coefficients of determination[28], R^2, which is a measure of the fit of the model and the success of the regression, are quite low. This is to be expected when using growth variables like GDP growth. Nonetheless, these R^2s are fairly low, which means that there are many things not accounted for in the equations, leading us to believe that there are some omitted variables in our model.

5.2 SUMMARY

This paper suggests an answer to the question of whether flexible exchange rates results in less variability in real economic activity, as measured by GDP and unemployment rates. Within the context of the model constructed in this thesis, there is some slight evidence that under a flexible exchange rate regime, external shocks can be accommodated by changes in the nominal exchange rate, or by monetary policy, with more moderate and less prolonged changes in real economic activity. A flexible exchange rate system allows a country to adjust monetary policy without worrying about the

[28] Although R^2 and adjusted R^2 are overall measures of how the constructed model fits a given set of data, their importance should not be overplayed. What is critical is the underlying theoretical expectations about the model in terms of a priori signs of the coefficients of the variables entering the model and their statistical significance.

exchange rate. Provided that domestic wages and prices do not immediately adjust to offset any exchange rate move, it also allows them to respond to an external shock, such as oil price increases, through a change in the exchange rate rather than a more painful domestic adjustment.

There are two snags, however. Floating exchange rates can be highly volatile. This can cause price instability that harms prospects for unemployment and GDP. Under a floating exchange rate system, a government may also be tempted to pursue an excessively loose monetary policy, which results in higher inflation. Fixed exchange rate regimes avoid both these problems; but at the cost of making it harder for countries to adjust to external shocks.

5.3 RECOMMENDATION

Questions related to the appropriateness of exchange rates have for a number of years been at the center of discussion on emerging economies. The modern literature on exchange rate regimes has emphasized the existence of important tradeoffs between fixed and

flexible regimes (Frankel (1995), Argy (1992), Edwards (1996)). In doing this, however, most theoretical analysis has considered two highly simplified extreme cases: 1) A flexible exchange rate, 2) a fixed exchange rate. According to this, a flexible exchange rate regime allows a country to have an independent monetary policy, providing the economy with flexibility to accommodate domestic and foreign shocks. This flexibility, however, usually comes at the cost of some loss in credibility and thus, tends to be associated with higher inflation. Alternatively, fixed exchange rates reduce the degree of flexibility of the system but impart (in theory) a higher degree of credibility to policy makers. Since the public believes that under fixed rates, the primary goal of monetary policy is to preserve the exchange rate parity, they moderate their wage and price expectation, thus allowing the economy to attain a lower rate of inflation. This analysis assumes that under a fixed exchange rate regime the authorities are always more disciplined and thus, that the fixed exchange rate is never abandoned, that is, devaluations are not an option. This is of course is an over simplification. In fact, as

history has shown again and again, fixed exchange rates often fail to impose macroeconomic discipline and end up in major devaluation crises (Cooper (1971), Kamin (1988), and Edwards (1989)). For this reason, a number of analysts that favor fixed over flexible rates increasingly argue that fixed exchange rates are a necessary, but not sufficient condition for achieving macro economic stability, for example, the fluctuation of macroeconomic variables such as unemployment and GDP, and that additional institutional constraints on policy makers, even at the constitutional level, have to be devised.

5.4 REMINDER OF THE ADVANTAGES OF FLEXIBLE VS. FIXED

The hypothesized advantages of exchange rate stability per se constitute too large a subject even for the sort of capsule summary we are pursuing here. In trying not to enter into an extended discussion of the advantages of fixed and floating exchange rates, the main points can be stated succinctly. The two big advantages of fixing the exchange rate, for any country, are: 1) to reduce transaction costs and exchange rate risk which can discourage trade

and investment, which will lead to a direct effect on the unemployment level and GDP growth, 2) to provide a credible nominal anchor for monetary policy. The big advantage of a floating exchange rate, on the other hand, is the ability to pursue an independent monetary policy.

Twenty or thirty years ago, the argument most often made against floating currencies was that higher exchange rate variability would create uncertainty; this risk would in turn discourage international trade and investment. Fixing the exchange rate in terms of a large neighbor would eliminate exchange rate risk, and so encourage international trade and investment. Going one step further, and actually adopting the neighbor's currency as one's own, would eliminate transaction costs as well, and thus promote trade and investment still more.

Most academic economists tend to downplay this argument today. One reason is that exchange rate risk can be hedged, through the use of the forward exchange market and other instruments. (There

are costs to hedging, both in terms of the bid-ask spread and in terms of a possible exchange risk premium. These are generally, not necessarily for agents with small transactions, thought to be small, however). Another reason is that there have been quite a few empirical studies of the effect of exchange rate volatility on trade, and some on investment; most of them find small adverse effects, if they find any at all.

Nevertheless, this argument still carries some weight. It looms large in the minds of European policymakers and businesspeople. Promoting trade and investment in Europe was certainly a prime motivation for the European Monetary Union. However, there has not been any satisfactory testing of the proposition that trade and investment are substantially boosted by full monetary union, in which circumstance even the possibility of a future change in the exchange rate is eliminated, along with all transactions costs.

Of the advantages of fixed exchange rates, academic economists tend to focus most on the nominal anchor for monetary policy. The

argument is that there can be an inflationary bias when monetary policy is set with full discretion. A central bank that wants to fight inflation can commit more credibly by fixing the exchange rate, or even giving up its currency altogether. Workers, firm managers, and others who set wages and prices then perceive that inflation will be low in the future, because the currency peg will prevent the central bank from expanding even if it wanted to. When workers and firm managers have low expectations of inflation, they set their wages and prices accordingly. The result is that the country is able to attain a lower level of inflation, for any given level of output. This is an argument by countries like Italy, Spain, and Portugal, which had high inflation rates in the 1970s, and were eager to tie their currencies to those of Germany and the rest of EMS countries. In essence, they hoped to import the inflation fighting credibility of the Bundesbank. The nominal anchor argument of course presupposes that one is pegging to a hard currency, one that exhibits strong monetary discipline.

The advantages of flexible exchange rates can all be grouped under one major property: it allows the country to pursue independent monetary policy. The argument in favor of monetary independence, instead of constraining monetary policy by the fixed exchange rate, is the classic argument for discretion, instead of rules. When the economy is hit by disturbances, such as a shift in worldwide demand away from the goods it produces, the government would like to be able to respond, so that the country does not go into recession. Under fixed exchange rates, monetary policy is always diverted, at least to some extent, to dealing with the balance of payments. Under the combination of fixed exchange rates and complete integration of financial markets, monetary policy becomes completely powerless. Under these conditions, the domestic interest rate is tied to the foreign interest rate. An expansion in the money supply has no effect: the new money flows out of the country, via a balance of payments deficit, just as quickly as it is created. In the face of adverse disturbances, the country must simply live with the effects. After the fall in demand for example, the recession may last until

wages and prices are bid down, or until some other automatic mechanism of adjustment takes hold.

By freeing up the currency, on the other hand, the country can respond to a recession by means of monetary expansion and depreciation of the currency. This stimulates demand for domestic products and returns the economy to desired levels of employment and output more rapidly than would be the case under the automatic mechanisms of adjustment on which a fixed rate country must rely. The argument for stabilizing the exchange rate is sometimes buttressed by reference to an increasingly evident disadvantage of free floating: a tendency toward volatility that does not always derive from macroeconomic fundamentals, including occasional speculative bubbles (possibly rational, possibly not) and crashes. However, the argument for flexibility is correspondingly sometimes buttressed by reference to an increasingly evident disadvantage of pegging: a tendency toward borrowers' effectively unhedged exposure in foreign currency, ending badly in speculative attacks and

multiple equilibrium overvaluation and excessive volatility, which are possible in either regime.

Which factors are likely to dominate, the advantages of fixed exchange rates or the advantages of floating? There is no one right answer for all countries. The answer must depend, in large part, on characteristics of the country in question. If the country is subject to many external disturbances, then it is more likely to want to float its currency. In this way it can insulate itself from the foreign disturbances, to some degree. As this study has shown, there is some evidence that floating exchange rates lead to less volatility in GDP growth. On the other hand, if the country is subject to many internal disturbances, then it is more likely to want to peg its currency.

5.5 POLITICS AND EXCHANGE RATES

There is a substantial literature on the relation between business cycles[29] and political elections. It's possible that the management of

[29] The more or less regular upward and downward movement of economic activity over a period of years. A cycle has four phases: recession, trough, expansion, and peak.

the exchange rate may help a government achieve political goals Dornbusch (1987). If a government follows a policy of maintaining its exchange rate at an overvalued level (the price of foreign currency too low), it lowers the price of imported goods and thereby reduces the price level and raises real GDP. Hence it is popular with the voters. Over time, however, the substitution of imports for domestically produced goods reduces domestic GDP and employment and loss of competitiveness in world markets results.

When a large country with a flexible exchange rate tightens monetary policy, this has an immediate disinflationary effect because of the appreciation of the value of its currency. Such a policy is equivalent to exporting inflation. Unless countries coordinate their monetary policies, competitive exchange rate policies may be engaged in, which are both disruptive of world trade patterns and political stability, as well as causing major impacts on world financial markets.

EPILOGUE

This thesis addresses and examines a critical issue that has been at the center of policy debates in developing and developed economies and has been raised both within the economics and within political circles as well, flexible and fixed exchange rate regimes, which is best?. This paper deals with the relationship between the exchange rate regime and economic activity. To be more precise, this paper focuses on the effect of the exchange rate regime on unemployment and GDP, and the issue to be examined is whether flexible exchange rates results in less variability in GDP and unemployment rates. Needless to say, the topic covered does not exhaust the subject. There are many important problems that have not been tackled in this thesis, or elsewhere in the literature.

FUTURE RESEARCH

The determinants of the exchange rate system deserve further analysis. Increased interest has been shown in recent months regarding the feasibility and potential advantage of a common

currency for Canada and the United States. My interest as my area of future research, is to explore the arguments for and against such an arrangement and attempt to determine whether it would offer any significant advantages for Canada compared to the present flexible exchange rate system.

The focus of my concern in this area is to examine theoretically and empirically a number of concerns that arose about the behavior of the current flexible exchange rate system. These concerns include: its susceptibility to destabilizing speculation; the depressing effect it might have on trade and investment flow; the encouragement it might provide for lax fiscal policies; and, the harmful effect it might have on productivity.

In sum, my ambition is to find and support by evidence the answer to this critical issue that has been raised both within the economics profession and within political circles as well;

What system would be best for Canada?.

GLOSSARY

European Community (EC). A customs union formed in the 1950s by a number of European nations (Britain become a member in the 1970s). The EC provides for tariff-free trade in goods and services, as well as free flows of investment and a common labor market, among the member nations; its ultimate objective is to move toward some form of political union. Known earlier as European Economic Community (EEC).

European monetary union (EMU). An agreement among some of the countries of the European Common Market and some other European countries to restrict the fluctuations among participating currencies to a given maximum spread.

European monetary system (EMS). See Exchange rate mechanism (ERM).

Exchange Rate Mechanism (ERM, also known as the European Monetary System or EMS). An agreement designed to limit fluctuations in the exchange rates between the currencies of the EC member nations. The ultimate goal is to have single currency in the EC.

Gross domestic product (GDP). Personal consumption expenditure plus government purchases of goods and services plus gross domestic investment plus net exports of goods and services. The basic measure of aggregate economic activity; it comprises the total value of goods and services proceed in a country, excluding double counting.

International monetary fund (IMF). An international organization founded as part of the 1945 Bretton Woods Agreement, with the task of overseeing the world's monetary and exchange rate system. Played a particularly important role in managing the adjustable peg system 1945 - 1973.

Less developed countries (LDC's). Refers to the world's non-industrialized nations with low per capita incomes. Most LDC's are in Africa, Asia, and Latin America.

World bank. An international bank founded after the 1945 Bretton Woods conference. Its principal activity is to lend money for economic development projects in Third World countries. Affiliated with the International Monetary Fund.

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Appendix A

INPUT RESULTS[*]

1. All Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment
2. Developed Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment
3. Developing Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment
4. Multiple Exchange Rate Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment

[*] Only in the tables of all countries for GDP and unemployment, the relevant years are indicated.

All Countries

Dependent Variable : σ GDP

	STD GDP %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
Australia	1.97293	1	1	4.66015	4.22	9.52	5.7	1975-1997
Belgium	1.58704	1	0	1.66808	14.13	10.31	10.61	1981-1997
Canada	2.26088	1	1	2.70456	7.97	11.17	6.6	1975-1997
Chile	4.93095	1	1	11.817	5.61	2.61	2.51	1977-1997
Denmark	1.58915	1	1	1.54723	6.86	9.81	7.49	1978-1997
France	1.42057	1	1	3.20161	4.94	9.55	6.1	1975-1997
India	3.12955	1	1	2.72328	2.48	0.64	0.43	1978-1997
Indonesia	1.42292	1	0	4.61472	5.60	.079	1.42	1986-1997
Ireland	3.10572	1	1	4.85086	14.15	5.45	3.36	1976-1997
Italy	1.56534	1	1	3.66266	5.03	9.08	6.46	1978-1997
Japan	1.63869	1	1	1.40115	2.10	9.03	5.24	1975-1997
Latvia	8.24278	1	0	3.53699	11.04	4.06	3.23	1993-1997
Luxembourg	3.21022	1	0	2.18736	18.64	10.48	9.47	1980-1996
Netherlands	1.421	1	1	1.97953	10.49	9.51	7.11	1978-1997
New Zealand	2.55196	1	1	6.15008	5.71	8.68	5.92	1977-1997
South Africa	2.94068	1	1	5.23594	4.84	5.89	3.38	1975-1997
Spain	1.7503	1	1	3.51082	5.56	6.43	5.07	1978-1997
United Kingdom	2.04735	1	1	4.92581	5.78	8.43	5.43	1975-1997
United States	2.18617	1	1	2.69506	2.56	12.67	8.02	1975-1997
Uruguay	4.98482	1	1	24.2618	4.54	4.42	2.78	1976-1997
Bangladesh	1.93241	0	1	8.43683	3.10	0.05	0.26	1976-1997
Belize	4.17728	0	0	3.1155	10.57	2.01	2.2	1986-1997
Benin	3.82633	0	1	7.051	5.84	0.47	0.46	1977-1997
Botswana	4.2869	0	0	9.9586	7.87	1.51	1.98	1980-1997
Burundi	5.01299	0	1	8.01969	2.42	0.05	0.36	1978-1997
Cameron	6.6208	0	0	7.68911	4.77	0.99	1.18	1979-1997
Central African	4.88382	0	1	10.6611	4.44	0.81	0.85	1978-1997
Chad	12.3815	0	1	13.5736	5.23	0.38	0.47	1978-1997
Comoros	1.28277	0	0	3.85397	5.51	1.02	1.23	1983-1997
Congo Rep	8.00164	0	1	16.6319	14.47	0.55	0.56	1978-1997
Cote d'Ivoire	4.88128	0	1	9.80787	8.64	1.19	1.11	1977-1997
Dominica	6.66568	0	1	5.02211	11.58	1.53	1.15	1978-1997

Fiji	5.26022	0	1	5.49322	11.63	2.41	1.37	1975-1997
Gabon	8.98859	0	1	15.3065	10.60	4.41	4.32	1978-1997
Grenada	3.32996	0	1	4.51261	10.13	1.76	1.15	1978-1997
Jordan	5.21953	0	0	3.30357	12.56	1.81	2.81	1990-1997
Lesotho	5.91133	0	0	6.42396	16.04	0.65	0.68	1980-1997
Malta	4.92701	0	1	2.69212	17.86	3.35	1.72	1975-1997
Nepal	3.40718	0	1	6.25099	6.40	0.47	0.31	1975-1997
Niger	7.16878	0	1	9.00111	4.00	0.67	0.35	1977-1997
Panama	6.27625	0	0	2.92737	8.29	2.63	5.04	1986-1996
Senegal	4.97992	0	1	5.0884	7.35	0.74	0.78	1977-1997
St. Kitts and N	3.45156	0	0	4.56855	12.58	2.42	2.27	1981-1996
St. Vincent	39.6128	0	1	34.2899	11.81	1.39	0.85	1977-1996
Swaziland	4.53103	0	1	6.04947	17.81	1.70	1.03	1975-1997
Togo	5.76242	0	1	7.80082	7.60	1.11	0.74	1977-1997
Argentina	5.82236	0	0	2.30264	2.33	6.43	9.53	1994-1997
Bahrain	3.61602	0	0	7.26695	19.47	10.05	11.52	1986-1996
Bulgaria	5.57096	1	0	22.5552	11.83	2.47	4.28	1991-1997
China	3.91548	0	0	3.14506	4.16	0.42	0.45	1980-1997
-	3.27173	1	0	3.94537	4.16	0.42	0.94	1986-1997
Colombia	1.37237	1	0	3.45105	3.33	3.29	4	1986-1997
Costa Rica	3.66935	1	0	11.4824	9.35	3.12	3.4	1982-1997
Dominican Rep.	2.7225	1	0	12.6875	6.76	1.99	3.39	1991-1997
Ecuador	3.56154	1	0	15.195	5.90	1.81	2.91	1982-1997
Egypt	3.6869	0	1	6.11459	4.51	1.08	0.62	1976-1997
-	1.44931	1	0	5.99519	4.51	1.08	1.98	1977-1997
El Salvador	2.33851	1	0	3.80565	5.86	2.21	1.81	1987-1997
Finland	3.28663	0	1	2.95111	7.08	8.74	5.57	1977-1997
-	3.89418	1	0	2.73065	7.08	8.74	16.12	1977-1997
Gambia	4.31171	0	1	11.0756	10.09	0.91	0.73	1978-1997
-	1.67793	1	0	8.75141	10.09	0.91	1.81	1986-1997
Ghana	7.48629	0	0	20.9909	6.24	1.03	0.86	1982-1997
-	0.42004	1	0	4.74978	6.24	1.03	1.03	1986-1997
-	5.43206	1	1	8.81103	6.24	1.03	0.8	1983-1997
Greece	2.11804	1	1	5.78193	3.96	6.58	3.59	1975-1997
Guatemala	2.95518	0	1	8.11229	4.16	2.16	1.93	1978-1997
-	0.67881	1	0	7.81844	4.16	2.16	3.15	1989-1997
Guyana	4.27497	0	1	17.8138	20.73	1.95	1.33	1978-1997
-	1.43977	1	0	22.7847	20.73	1.95	1.82	1991-1997
Hungary	5.07081	0	0	3.64838	9.15	5.16	6.61	1989-1997
Iceland	2.51009	0	0	3.65861	7.22	11.37	18.11	1989-1997
-	3.03671	1	1	7.14835	7.22	11.37	7.62	1978-1997

Jamaica	3.69372	0	0	5.31728	11.50	1.88	1.77	1979-1997
-	3.33427	1	0	10.7379	11.50	1.88	2.01	1983-1997
Kenya	2.15515	0	1	2.52013	6.37	0.58	0.52	1978-1997
-	1.90173	1	0	8.27027	6.37	0.58	1.1	1991-1997
Madagascar	3.10956	1	0	9.12884	5.18	0.64	0.92	1989-1997
Malawi	4.37188	0	0	4.03152	5.90	0.34	0.41	1983-1997
-	9.68471	1	0	13.3943	5.90	0.34	0.62	1993-1997
Malaysia	3.16189	0	1	6.05033	18.55	2.62	1.35	1976-1997
-	0.69449	1	0	1.96213	18.55	2.62	5.68	1992-1997
Mali	5.43269	0	1	6.43705	6.13	0.45	0.33	1978-1997
Mauritania	3.36467	0	0	1.72086	8.85	0.93	1.01	1980-1997
-	2.36042	1	0	3.13777	8.85	0.93	1.33	1987-1997
Mauritius	2.31646	0	0	2.83974	13.07	2.19	2.79	1982-1997
-	0.5?945	1	0	1.9433	13.07	2.19	8.01	1994-1997
Mexico	5.15768	1	0	4.35069	6.08	4.24	7.72	1993-1997
Namibia	3.18365	0	0	3.20846	11.08	3.22	4.68	1992-1997
Nicaragua	5.15474	0	0	389.615	11.86	1.63	1.7	1989-1997
-	11.6739	1	0	12.5052	11.86	1.63	1.79	1993-1997
Nigeria	2.9207	0	0	13.2394	7.52	0.49	0.89	1993-1997
-	6.42256	1	1	11.6097	7.52	0.49	0.41	1975-1997
Norway	1.90654	0	0	4.59253	7.55	9.94	7.8	1979-1997
Paraguay	1.14803	1	0	6.79268	9.51	2.66	3.28	1990-1997
Peru	10.9756	0	0	17.8663	2.95	2.68	3.35	1986-1997
-	5.87249	1	0	34.2363	2.95	2.68	2.88	1990-1997
Philippines	3.93785	1	1	4.27826	10.85	2.24	1.57	1978-1997
Poland	6.27496	0	0	25.1023	5.56	3.47	3.7	1985-1997
-	4.9019	1	0	3.22457	5.56	3.47	4.37	1991-1997
Portugal	1.79372	0	1	2.51618	7.15	5.36	3.84	1978-1997
-	2.49062	1	0	3.21045	7.15	5.36	5.72	1982-1997
Sierra Leone	3.74255	0	0	13.1539	3.12	0.57	0.51	1985-1997
-	8.67982	1	0	12.8819	3.12	0.57	0.65	1989-1997
-	1.47639	1	1	2.29828	3.12	0.57	0.37	1978-1997
Singapore	3.1942	0	1	3.14378	31.56	5.47	4.42	1978-1997
-	1.66237	1	0	1.88329	31.56	5.47	17.47	1991-1997
Sri Lanka	1.41058	1	1	4.4918	8.01	0.99	0.61	1978-1997
Sweden	1.37045	0	1	2.12514	8.06	9.81	7.17	1978-1997
-	2.46799	1	0	3.08686	8.06	9.81	17.42	1992-1997
Switzerland	0.78423	1	0	0.50733	7.53	13.33	23.54	1992-1997
Thailand	3.15741	0	1	3.48205	9.48	1.42	1.12	1978-1997
Trinidad	7.36519	0	0	11.133	11.02	4.96	4.66	1980-1997
-	2.22073	1	0	4.61653	11.02	4.96	5.81	1993-1997

Tunisia	3.17796	0	1	4.42656	9.03	2.28	1.67	1978-1997
Venezuela	2.73372	0	0	11.3082	4.91	3.91	5.25	1984-1997
-	5.57695	1	0	17.7454	4.91	3.91	6.8	1989-1997
Zambia	3.68429	0	1	5.00851	6.87	0.61	0.64	1978-1997
-	4.2536	1	0	23.8974	6.87	0.61	0.91	1990-1997
Zimbabwe	5.54977	1	0	10.8103	8.22	1.44	2.09	1990-1997
	STD GDP %	**Dummy Ex. Rate**	**Dummy Oil Shks.**	**STD Interest**	**Openes. Degree**	**GDP P. Capita**	**Initial GDP**	

All Countries

Dependent Variable : σ Unemployment

	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
Australia	1.79375	1	1	4.66015	4.22	9.52	5.7	1975-1997
Belgium	1.89498	1	0	1.32466	14.13	10.31	10.61	1983-1997
Canada	1.26422	1	0	1.73984	7.97	11.17	12.47	1984-1997
Chile	4.37637	1	1	11.817	5.61	2.61	2.51	1977-1997
Denmark	0.6377	1	0	1.00662	6.86	9.81	20.99	1994-1997
France	2.64493	1	1	3.20161	4.94	9.55	6.1	1975-1997
Ireland	2.019	1	0	2.53048	14.15	5.45	6.16	1983-1997
Italy	1.62445	1	1	3.66266	5.03	9.08	6.46	1978-1997
Japan	0.43023	1	1	1.40115	2.10	9.03	5.24	1975-1997
Latvia	2.57248	1	0	3.53699	11.04	4.06	3.23	1994-1997
Netherlands	2.12509	1	1	1.97953	10.49	9.51	7.11	1978-1997
New Zealand	2.49452	1	0	1.88457	5.71	8.68	12.1	1986-1997
Spain	4.77761	1	1	3.51082	5.56	6.43	5.07	1978-1997
United Kingdom	1.47086	1	0	1.48139	5.78	8.43	14.11	1987-1997
United States	1.24762	1	1	2.69506	2.56	12.67	8.02	1975-1997
Uruguay	0.83293	1	0	9.55268	4.54	4.42	5.1	1986-1997
Fiji	1.34508	0	0	3.1837	11.63	2.41	2.25	1982-1997
Panama	1.92596	0	0	2.92737	8.29	2.63	5.04	1986-1996
Argentina	2.52653	0	0	2.30264	2.33	6.43	9.53	1994-1997
Bulgaria	2.01039	1	0	22.5552	11.83	2.74	4.28	1991-1997
China	1.21888	0	0	3.14506	4.16	0.42	0.45	1980-1997
"	0.38139	1	0	3.94537	4.16	0.42	0.94	1986-1997
Colombia	1.71747	1	0	3.45105	3.33	3.29	4	1986-1997
Costa Rica	1.61873	1	0	11.4824	9.35	3.12	3.4	1982-1997
Dominican Rep.	2.07903	1	0	12.6875	6.76	1.99	3.39	1991-1997
Ecuador	1.38885	1	0	16.4989	5.90	1.81	3.46	1987-1997
Egypt	1.19373	0	1	6.83895	4.51	1.08	0.7	1987-1997
"	1.59105	1	0	3.73315	4.51	1.08	2.22	1989-1997
El Salvador	0.9716	1	0	3.96647	5.86	2.21	1.95	1988-1997
Finland	0.97649	0	1	2.95111	7.08	8.74	5.57	1992-1997

-	1.96715	1	0	2.73065	7.08	8.74	16.12	1992-1997
Greece	1.6012	1	0	5.57814	3.97	6.58	6.23	1981-1997
Hungary	5.45653	0	0	3.64838	9.15	5.16	6.61	1989-1997
Iceland	1.09118	0	0	1.12322	7.22	11.37	18.88	1991-1997
Jamaica	0.74386	0	0	5.31728	11.50	1.88	1.77	1979-1997
-	4.38919	1	0	9.72854	11.50	1.88	2.01	1983-1997
Malaysia	1.29725	0	0	6.6249	18.55	2.62	3.08	1984-1997
-	0.44272	1	0	1.96213	18.55	2.62	5.68	1992-1997
Norway	1.46364	0	0	4.59253	7.55	9.94	7.8	1979-1997
Paraguay	0.80312	1	0	6.20718	9.51	2.66	3.28	1990-1997
Philippines	1.78899	1	1	4.27826	10.85	2.24	1.57	1978-1997
Poland	1.72327	1	0	2.52339	5.56	3.47	4.37	1991-1997
Portugal	0.1893	0	1	2.51618	7.15	5.36	3.84	1978-1997
-	1.515	1	0	3.21045	7.15	5.36	5.72	1982-1997
Singapore	1.21597	0	1	3.14378	31.56	5.47	4.42	1978-1997
-	0.34503	1	0	1.88329	31.56	5.47	17.47	1991-1997
Sri Lanka	1.21204	1	0	4.03402	8.01	0.99	1.65	1990-1997
Sweden	0.63246	0	1	2.12514	8.06	9.81	7.17	1978-1997
-	1.15528	1	0	3.08686	8.06	9.81	17.42	1992-1997
Switzerland	0.87636	1	0	0.50733	7.53	13.33	23.54	1992-1997
Thailand	1.98756	0	1	3.48205	9.48	1.42	1.12	1978-1997
Trinidad	4.868	0	0	11.133	11.02	4.96	4.66	1980-1997
-	1.55349	1	0	5.0883	11.02	4.96	5.81	1993-1997
Venezuela	2.4974	0	0	11.3082	4.91	3.91	5.25	1984-1997
-	1.47164	1	0	16.1663	4.91	3.91	6.8	1989-1997
	STD Unempl. %	**Dummy Ex. Rate**	**Dummy Oil Shks.**	**STD Interest**	**Openes. Degree**	**GDP P. Capita**	**Initial GDP**	

Developed Countries

Dependent Variable : σ GDP

	STD GDP %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
Australia	1.97293	1	1	4.66015	4.22	9.52	5.7	*Australia*
Canada	2.26088	1	1	2.70456	7.97	11.17	6.6	*Canada*
Denmark	1.58915	1	1	1.54723	6.86	9.81	7.49	*Denmark*
France	1.42057	1	1	3.20161	4.94	9.55	6.1	*France*
Ireland	3.10572	1	1	4.85086	14.15	5.45	3.36	*Ireland*
Italy	1.56534	1	1	3.66266	5.03	9.08	6.46	*Italy*
Japan	1.63869	1	1	1.40115	2.10	9.03	5.24	*Japan*
Luxembourg	3.21022	1	0	2.18736	18.64	10.48	9.47	*Luxembourg*
Netherlands	1.421	1	1	1.97953	10.49	9.51	7.11	*Netherlands*
New Zealand	2.55196	1	1	6.15008	5.71	8.68	5.92	*New Zealand*
Spain	1.7503	1	1	3.51082	5.56	6.43	5.07	*Spain*
United Kingdom	2.04735	1	1	4.92581	5.78	8.43	5.43	*United Kingdom*
United States	2.18617	1	1	2.69506	2.56	12.67	8.02	*United States*
Finland	3.28663	0	1	2.95111	7.08	8.74	5.57	*Finland*
-	3.89418	1	0	2.73065	7.08	8.74	16.12	-
Greece	2.11804	1	1	5.78193	3.97	6.58	3.59	*Greece*
Iceland	2.51009	0	0	3.65861	7.22	11.37	18.11	*Iceland*
-	3.03671	1	1	7.14835	7.22	11.37	7.62	-
Norway	1.90654	0	0	4.59253	7.55	9.94	7.8	*Norway*
Sweden	1.37045	0	1	2.12514	8.06	9.81	7.17	*Sweden*
-	2.46799	1	0	3.08686	8.06	9.81	17.42	-
Switzerland	0.78423	1	0	0.50733	7.53	13.33	23.54	*Switzerland*
	STD GDP %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	

Developed Countries

Dependent Variable : σ Unemployment

	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
Australia	1.79375	1	1	4.66015	4.22	9.52	5.7	*Australia*
Canada	1.26422	1	0	1.73984	7.97	11.17	12.47	*Canada*
Denmark	0.6377	1	0	1.00662	6.86	9.81	20.99	*Denmark*
France	2.64493	1	1	3.20161	4.94	9.55	6.1	*France*
Ireland	2.019	1	0	2.53048	14.15	5.45	6.16	*Ireland*
Italy	1.62445	1	1	3.66266	5.03	9.08	6.46	*Italy*
Japan	0.43023	1	1	1.40115	2.10	9.03	5.24	*Japan*
Netherlands	2.12509	1	1	1.97953	10.49	9.51	7.11	*Netherlands*
New Zealand	2.49452	1	0	1.88457	5.71	8.68	12.1	*New Zealand*
Spain	4.77761	1	1	3.51082	5.56	6.43	5.07	*Spain*
United Kingdom	1.47086	1	0	1.48139	5.78	8.43	14.11	*United Kingdom*
United States	1.24752	1	1	2.69506	2.56	12.67	8.02	*United States*
Finland	0.97649	0	1	2.95111	7.08	8.74	5.57	*Finland*
-	1.96715	1	0	2.73065	7.08	8.74	16.12	-
Greece	1.6012	1	0	5.57814	3.97	6.58	6.23	*Greece*
Iceland	1.09118	0	0	1.12322	7.22	11.37	18.88	*Iceland*
Norway	1.46364	0	0	4.59253	7.55	9.94	7.8	*Norway*
Sweden	0.63246	0	1	2.12514	8.06	9.81	7.17	*Sweden*
-	1.15528	1	0	3.08686	8.06	9.81	17.42	-
Switzerland	0.87636	1	0	0.50733	7.53	13.33	23.54	*Switzerland*
	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	

Developing Countries

Dependent Variable : σ GDP

	STD GDP %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
Chile	4.93095	1	1	11.817	5.61	2.61	2.51	*Chile*
India	3.12955	1	1	2.72328	2.48	0.64	0.43	*India*
Indonesia	1.42292	1	0	4.61472	5.60	0.79	1.42	*Indonesia*
Latvia	8.24278	1	0	3.53699	11.04	4.06	3.23	*Latvia*
South Africa	2.94068	1	1	5.23594	4.84	5.89	3.38	*South Africa*
Uruguay	4.98482	1	1	24.2618	4.54	4.42	2.78	*Uruguay*
Bangladesh	1.93241	0	1	8.43683	3.10	0.50	0.26	*Bangladesh*
Belize	4.17728	0	0	3.1155	10.57	2.01	2.2	*Belize*
Benin	3.82633	0	1	7.051	5.84	0.47	0.46	*Benin*
Botswana	4.2869	0	0	9.9586	7.87	1.51	1.98	*Botswana*
Burundi	5.01299	0	1	8.01969	2.42	0.40	0.36	*Burundi*
Cameron	6.6208	0	0	7.68911	4.77	0.99	1.18	*Cameron*
Central African	4.88382	0	1	10.6611	4.44	0.81	0.85	*Central African*
Chad	12.3815	0	1	13.5736	5.23	0.38	0.47	*Chad*
Comoros	1.28277	0	0	3.85397	5.51	1.02	1.23	*Comoros*
Congo Rep	8.00164	0	1	16.6319	14.47	0.55	0.56	*Congo Rep*
Cote d'Ivoire	4.88128	0	1	9.80787	8.64	1.19	1.11	*Cote d'Ivoire*
Dominica	6.66568	0	1	5.02211	11.58	1.53	1.15	*Dominica*
Fiji	5.26022	0	1	5.49322	11.63	2.41	1.37	*Fiji*
Gabon	8.98859	0	1	15.3065	10.60	4.41	4.32	*Gabon*
Grenada	3.32996	0	1	4.51261	10.13	1.76	1.15	*Grenada*
Jordan	5.21953	0	0	3.30357	12.56	1.81	2.81	*Jordan*
Lesotho	5.91133	0	0	6.42396	16.04	0.65	0.68	*Lesotho*
Malta	4.92701	0	1	2.69212	17.86	3.35	1.72	*Malta*
Nepal	3.40718	0	1	6.25099	6.40	0.47	0.31	*Nepal*
Niger	7.16878	0	1	9.00111	4.00	0.67	0.35	*Niger*
Panama	6.27625	0	0	2.92737	8.29	2.63	5.04	*Panama*
Senegal	4.97992	0	1	5.0884	7.35	0.74	0.78	*Senegal*
St. Kitts and N	3.45156	0	0	4.56855	12.58	2.42	2.27	*St. Kitts and N*
St. Vincent	39.6128	0	1	34.2899	11.81	1.39	0.85	*St. Vincent*
Togo	5.76242	0	1	7.80082	7.60	1.11	0.74	*Togo*

Argentina	5.82236	0	0	2.30264	2.33	6.43	9.53	*Argentina*
Bahrain	3.61602	0	0	7.26695	19.47	10.05	11.52	*Bahrain*
Bulgaria	5.57096	1	0	22.5552	11.83	2.74	4.28	*Bulgaria*
China	3.91548	0	0	3.14506	4.16	0.42	0.45	*China*
-	3.27173	1	0	3.94537	4.16	0.42	0.94	-
Colombia	1.37237	1	0	3.45105	3.33	3.29	4	*Colombia*
Costa Rica	3.66995	1	0	11.4824	9.35	3.12	3.4	*Costa Rica*
Dominican Rep.	2.7225	1	0	12.6875	6.76	1.99	3.39	*Dominican Rep.*
Ecuador	3.56154	1	0	15.195	5.90	1.81	2.91	*Ecuador*
Egypt	3.6869	0	1	6.11459	4.51	1.08	0.62	*Egypt*
-	1.44931	1	0	5.99519	4.51	1.08	1.98	-
El Salvador	2.33851	1	0	3.80565	5.86	2.21	1.81	*El Salvador*
Gambia	4.31171	0	1	11.0756	10.09	0.91	0.73	*Gambia*
-	1.67793	1	0	8.75141	10.09	0.91	1.81	-
Ghana	7.48629	0	0	20.9909	6.24	1.03	0.86	*Ghana*
-	0.42004	1	0	4.74978	6.24	1.03	1.03	-
-	5.43206	1	1	8.81103	6.24	1.03	0.8	-
Guatemala	2.95518	0	1	8.11229	4.16	2.16	1.93	*Guatemala*
-	0.67881	1	0	7.81844	4.16	2.16	3.15	-
Guyana	4.27497	0	1	17.8138	20.73	1.95	1.33	*Guyana*
-	1.43977	1	0	22.7847	20.73	1.95	1.82	-
Hungary	5.07081	0	0	3.64838	9.15	5.16	6.61	*Hungary*
Jamaica	3.69372	0	0	5.31728	11.50	1.88	1.77	*Jamaica*
-	3.33427	1	0	10.7379	11.50	1.88	2.01	-
Kenya	2.15515	0	1	2.52013	6.37	0.58	0.52	*Kenya*
-	1.90173	1	0	8.27027	6.37	0.58	1.1	-
Madagascar	3.10956	1	0	9.12884	5.18	0.64	0.92	*Madagascar*
Malawi	4.37188	0	0	4.03152	5.90	0.34	0.41	*Malawi*
-	9.68471	1	0	13.3943	5.90	0.34	0.62	-
Malaysia	3.16189	0	1	6.05033	18.55	2.62	1.35	*Malaysia*
-	0.69449	1	0	1.96213	18.55	2.62	5.68	-
Mali	5.43269	0	1	6.43705	6.13	0.45	0.33	*Mali*
Mauritania	3.36467	0	0	1.72086	8.85	0.93	1.01	*Mauritania*
-	2.36042	1	0	3.13777	8.85	0.93	1.33	-
Mauritius	2.31646	0	0	2.83974	13.07	2.19	2.79	*Mauritius*
-	0.57945	1	0	1.9433	13.07	2.19	8.01	-
Mexico	5.15768	1	0	4.35069	6.08	4.24	7.72	*Mexico*
Namibia	3.18365	0	0	3.20846	11.08	3.22	4.68	*Namibia*
Nicaragua	5.15474	0	0	389.615	11.86	1.63	1.7	*Nicaragua*
-	11.6739	1	0	12.5052	11.86	1.63	1.79	-
Nigeria	2.9207	0	0	13.2394	7.52	0.49	0.89	*Nigeria*

-	6.42256	1	1	11.6097	7.52	0.49	0.41	-
Paraguay	1.14803	1	0	6.79268	9.51	2.66	3.28	*Paraguay*
Peru	10.9756	0	0	17.8663	2.95	2.68	3.35	*Peru*
-	5.87249	1	0	34.2363	2.95	2.68	2.88	-
Philippines	3.93785	1	1	4.27826	10.85	2.24	1.57	*Philippines*
Poland	6.27496	0	0	25.1023	5.56	3.47	3.7	*Poland*
-	4.9019	1	0	3.22457	5.56	3.47	4.37	-
-	2.49062	1	0	3.21045	5.56	3.47	5.72	-
Sierra Leone	3.74255	0	0	13.1539	3.12	0.57	0.51	*Sierra Leone*
-	8.67982	1	0	12.8819	3.12	0.57	0.65	-
-	1.47659	1	1	2.29828	3.12	0.57	0.37	-
Singapore	3.1942	0	1	3.14378	31.56	5.47	4.42	*Singapore*
-	1.66237	1	0	1.88329	31.56	5.47	17.47	-
Sri Lanka	1.41058	1	1	4.4918	8.01	0.99	0.61	*Sri Lanka*
Thailand	3.15741	0	1	3.48205	9.48	1.42	1.12	*Thailand*
Trinidad	7.36519	0	0	11.133	11.02	4.96	4.66	*Trinidad*
-	2.22073	1	0	4.61653	11.02	4.96	5.81	-
Tunisia	3.17796	0	1	4.42656	9.03	2.28	1.67	*Tunisia*
Venezuela	2.73372	0	0	11.3082	4.91	3.91	5.25	*Venezuela*
-	5.57695	1	0	17.7454	4.91	3.91	6.8	-
Zambia	3.68429	0	1	5.00851	6.87	0.61	0.64	*Zambia*
-	4.2536	1	0	23.8974	6.87	0.61	0.91	-
Zimbabwe	5.54977	1	0	10.8103	8.22	1.44	2.09	*Zimbabwe*
	STD GDP %	**Dummy Ex. Rate**	**Dummy Oil Shks.**	**STD Interest**	**Openes. Degree**	**GDP P. Capita**	**Initial GDP**	

Developing Countries

Dependent Variable : σ Unemployment

	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
Chile	4.37637	1	1	11.817	5.61	1.61	2.51	*Chile*
Latvia	2.57248	1	0	3.53699	11.04	4.06	3.23	*Latvia*
Uruguay	0.83293	1	0	9.55268	4.54	4.42	5.1	*Uruguay*
Fiji	1.34508	0	0	3.1837	11.63	2.41	2.25	*Fiji*
Panama	1.92596	0	0	2.92737	8.29	2.63	5.04	*Panama*
Argentina	2.52653	0	0	2.30264	2.33	6.43	9.53	*Argentina*
Bulgaria	2.01039	1	0	22.5552	11.83	2.74	4.28	*Bulgaria*
China	1.21888	0	0	3.14506	4.16	0.42	0.45	*China*
-	0.38139	1	0	3.94537	4.16	0.42	0.94	-
Colombia	1.71747	1	0	3.45105	3.33	3.29	4	*Colombia*
Costa Rica	1.61873	1	0	11.4824	9.35	3.12	3.4	*Costa Rica*
Dominican Rep.	2.07903	1	0	12.6875	6.76	1.99	3.39	*Dominican Rep.*
Ecuador	1.38885	1	0	16.4989	5.90	1.81	3.46	*Ecuador*
Egypt	1.19373	0	1	6.83895	4.51	1.08	0.7	*Egypt*
-	1.59105	1	0	3.73315	4.51	1.08	2.22	-
El Salvador	0.9716	1	0	3.96647	5.86	2.21	1.95	*El Salvador*
Hungary	5.45653	0	0	3.64838	9.15	5.16	6.61	*Hungary*
Jamaica	0.74386	0	0	5.31728	11.50	1.88	1.77	*Jamaica*
-	4.38919	1	0	9.72854	11.50	1.88	2.01	-
Malaysia	1.29725	0	0	6.6249	18.55	2.62	3.08	*Malaysia*
-	0.44272	1	0	1.96213	18.55	2.62	5.68	-
Paraguay	0.80312	1	0	6.20718	9.51	2.66	3.28	*Paraguay*
Philippines	1.78899	1	1	4.27826	10.85	2.24	1.57	*Philippines*
Poland	1.72327	1	0	2.52339	5.56	3.47	4.37	*Poland*
Singapore	1.21597	0	1	3.14378	31.56	5.47	4.42	*Singapore*
-	0.34503	1	0	1.88329	31.56	5.47	17.47	-
Sri Lanka	1.21204	1	0	4.03402	8.01	0.99	1.65	*Sri Lanka*
Thailand	1.98756	0	1	3.48205	9.48	1.42	1.12	*Thailand*
Trinidad	4.868	0	0	11.133	11.02	4.96	4.66	*Trinidad*
-	1.55349	1	0	5.0883	11.02	4.96	5.81	-
Venezuela	2.4974	0	0	11.3082	4.91	3.91	5.25	*Venezuela*

-	1.47164	1	0	16.1663	4.91	3.91	6.8	-
	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	

Multiple Exchange Rate Countries

Dependent Variable : σ GDP

	STD GDP %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
China	3.91548	0	0	3.14506	4.16	0.42	0.45	*China*
-	3.27173	1	0	3.94537	4.16	0.42	0.94	-
Egypt	3.6869	0	1	6.11459	4.51	1.08	0.62	*Egypt*
-	1.44931	1	0	5.99519	4.51	1.08	1.98	-
Finland	3.28663	0	1	2.95111	7.08	8.74	5.57	*Finland*
-	3.89418	1	0	2.73065	7.08	8.74	16.12	-
Gambia	4.31171	0	1	11.0756	10.09	0.91	0.73	*Gambia*
-	1.67793	1	0	8.75141	10.09	0.91	1.81	-
Ghana	7.48629	0	0	20.9909	6.24	1.03	0.86	*Ghana*
-	0.42004	1	0	4.74978	6.24	1.03	1.03	-
-	5.43206	1	1	8.81103	6.24	1.03	0.8	-
Guatemala	2.95518	0	1	8.11229	4.16	2.16	1.93	*Guatemala*
-	0.67881	1	0	7.81844	4.16	2.16	3.15	-
Guyana	4.27497	0	1	17.8138	20.73	1.95	1.33	*Guyana*
-	1.43977	1	0	22.7847	20.73	1.95	1.82	-
Iceland	2.51009	0	0	3.65861	7.22	11.37	18.11	*Iceland*
-	3.03671	1	1	7.14835	7.22	11.37	7.62	-
Jamaica	3.69372	0	0	5.31728	11.50	1.88	1.77	*Jamaica*
-	3.33427	1	0	10.7379	11.50	1.88	2.01	-
Kenya	2.15515	0	1	2.52013	6.37	0.58	0.52	*Kenya*
-	1.90173	1	0	8.27027	6.37	0.58	1.1	-
Malawi	4.37188	0	0	4.03152	5.90	0.34	0.41	*Malawi*
-	9.68471	1	0	13.3943	5.90	0.34	0.62	-
Malaysia	3.16189	0	1	6.05033	18.55	2.62	1.35	*Malaysia*
-	0.69449	1	0	1.96213	18.55	2.62	5.68	-
Mauritania	3.36467	0	0	1.72086	8.85	0.93	1.01	*Mauritania*
-	2.36042	1	0	3.13777	8.85	0.93	1.33	-
Mauritius	2.31646	0	0	2.83974	13.07	2.19	2.79	*Mauritius*
-	0.57945	1	0	1.9433	13.07	2.19	8.01	-
Nicaragua	5.15474	0	0	389.615	11.86	1.63	1.7	*Nicaragua*
-	11.6739	1	0	12.5052	11.86	1.63	1.79	-
Nigeria	2.9207	0	0	13.2394	7.52	0.67	0.89	*Nigeria*

=	6.42256	1	1	11.6097	7.52	0.67	0.41	=
Peru	10.9756	0	0	17.8663	2.95	2.68	3.35	*Peru*
=	5.87249	1	0	34.2363	2.95	2.68	2.88	=
Poland	6.27496	0	0	25.1023	5.56	3.47	3.7	*Poland*
=	4.9019	1	0	3.22457	5.56	3.47	4.37	=
Portugal	1.79372	0	1	2.51618	7.15	5.36	3.84	*Portugal*
=	2.49062	1	0	3.21045	7.15	5.36	5.72	=
Sierra Leone	3.74255	0	0	13.1539	3.12	0.57	0.51	*Sierra Leone*
=	8.67982	1	0	12.8819	3.12	0.57	0.65	=
=	1.47659	1	1	2.29828	3.12	0.57	0.37	=
Singapore	3.1942	0	1	3.14378	31.56	5.47	4.42	*Singapore*
=	1.66237	1	0	1.88329	31.56	5.47	17.47	=
Sweden	1.37045	0	1	2.12514	8.06	9.81	7.17	*Sweden*
=	2.46799	1	0	3.08686	8.06	9.81	17.42	=
Trinidad	7.36519	0	0	11.133	11.02	4.96	4.66	*Trinidad*
=	2.22073	1	0	4.61653	11.02	4.96	5.81	=
Venezuela	2.73372	0	0	11.3082	4.91	3.91	5.25	*Venezuela*
=	5.57695	1	0	17.7454	4.91	3.91	6.8	=
Zambia	3.69429	0	1	5.00851	6.87	0.61	0.64	*Zambia*
=	4.2536	1	0	23.8974	6.87	0.61	0.91	=
	STD GDP %	**Dummy Ex. Rate**	**Dummy Oil Shks.**	**STD Interest**	**Openes. Degree**	**GDP P. Capita**	**Initial GDP**	

Multiple Exchange Rate Countries

Dependent Variable : σ Unemployment

	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	
China	1.21888	0	0	3.14506	4.16	0.42	0.45	*China*
-	0.38139	1	0	3.94537	4.16	0.42	0.94	-
Egypt	1.19373	0	1	6.83895	4.51	1.08	0.7	*Egypt*
-	1.59105	1	0	3.73315	4.51	1.08	2.22	-
Finland	0.97649	0	1	2.95111	7.08	8.74	5.57	*Finland*
-	1.96715	1	0	2.73065	7.08	8.74	16.12	-
Jamaica	0.74386	0	0	5.31728	11.50	1.88	1.77	*Jamaica*
-	4.38919	1	0	9.72854	11.50	1.88	2.01	-
Malaysia	1.29725	0	0	6.6249	18.55	2.62	3.08	*Malaysia*
-	0.44272	1	0	1.96213	18.55	2.62	5.68	-
Portugal	0.1893	0	1	2.51618	7.15	5.36	3.84	*Portugal*
-	1.515	1	0	3.21045	7.15	5.36	5.72	-
Singapore	1.21597	0	1	3.14378	31.56	5.47	4.42	*Singapore*
-	0.34503	1	0	1.88329	31.56	5.47	17.47	-
Sweden	0.63246	0	1	2.12514	8.06	9.81	7.17	*Sweden*
-	1.15528	1	0	3.08686	8.06	9.81	17.42	-
Trinidad	4.868	0	0	11.133	11.02	4.96	4.66	*Trinidad*
-	1.55349	1	0	5.0883	11.02	4.96	5.81	-
Venezuela	2.4974	0	0	11.3082	4.91	3.91	5.25	*Venezuela*
-	1.47164	1	0	16.1663	4.91	3.91	6.8	-
	STD Unempl. %	Dummy Ex. Rate	Dummy Oil Shks.	STD Interest	Openes. Degree	GDP P. Capita	Initial GDP	

Appendix B

OUTPUT RESULTS

1. All Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment
2. Developed Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment
3. Developing Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment
4. Multiple Exchange Rate Countries
   - Dependent Variable : σ GDP
   - Dependent Variable : σ Unemployment

All Countries (GDP)

```
OLS ESTIMATION
      120 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:       1,     120

 R-SQUARE =    0.1040     R-SQUARE ADJUSTED =    0.0647
VARIANCE OF THE ESTIMATE-SIGMA**2 =    14.998
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.8728
SUM OF SQUARED ERRORS-SSE=    1709.8
MEAN OF DEPENDENT VARIABLE =    4.1568
LOG OF THE LIKELIHOOD FUNCTION = -329.671

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       15.748
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.7566
 SCHWARZ (1978) CRITERION - LOG SC =                2.8960
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           15.788
 HANNAN AND QUINN (1979) CRITERION =               16.664
 RICE (1984) CRITERION =                           15.832
 SHIBATA (1981) CRITERION =                        15.673
 SCHWARZ (1978) CRITERION - SC =                   18.102
 AKAIKE (1974) INFORMATION CRITERION - AIC =       15.747

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        198.47           5.        39.694             2.647
ERROR             1709.8         114.        14.998           P-VALUE
TOTAL             1908.3         119.        16.036             0.027

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2271.9           6.        378.66            25.247
ERROR             1709.8         114.        14.998           P-VALUE
TOTAL             3981.7         120.        33.181             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     114 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.4083     0.7647     -1.842    0.068-0.170    -0.1766    -0.1722
OILSHOCK   0.51873     0.7352     0.7055    0.482 0.066     0.0648     0.0572
INTEREST   0.10613E-01 0.1016E-01  1.045    0.298 0.097     0.0940     0.0276
OPNSS      0.86439E-02 0.6986E-01 0.1237    0.902 0.012     0.0112     0.0178
GDPPC80   -0.21488     0.1097     -1.958    0.053-0.180    -0.1845    -0.1817
CONSTANT   5.2014      0.9542      5.451    0.000 0.455     0.0000     1.2513
|_stop
```

All Countries Without GDP P. Capita and Initial GDP (GDP)

```
OLS ESTIMATION
      141 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:      1,     141

 R-SQUARE =    0.0833     R-SQUARE ADJUSTED =    0.0564
VARIANCE OF THE ESTIMATE-SIGMA**2 =    13.922
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.7312
SUM OF SQUARED ERRORS-SSE=    1893.3
MEAN OF DEPENDENT VARIABLE =    4.1906
LOG OF THE LIKELIHOOD FUNCTION = -383.183

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       14.415
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.6683
 SCHWARZ (1978) CRITERION - LOG SC =                2.7728
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           14.433
 HANNAN AND QUINN (1979) CRITERION =               15.041
 RICE (1984) CRITERION =                           14.453
 SHIBATA (1981) CRITERION =                        14.380
 SCHWARZ (1978) CRITERION - SC =                   16.004
 AKAIKE (1974) INFORMATION CRITERION - AIC =       14.415

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        172.10         4.         43.026             3.091
ERROR             1893.3       136.         13.922           P-VALUE
TOTAL             2065.4       140.         14.753             0.018

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2648.2         5.         529.64            38.045
ERROR             1893.3       136.         13.922           P-VALUE
TOTAL             4541.6       141.         32.210             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     136 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.8879     0.6469     -2.918     0.004-0.243    -0.2466    -0.2268
OILSHOCK   0.26209     0.6570     0.3989     0.691 0.034     0.0334     0.0244
INTEREST   0.13808E-01 0.9581E-02  1.441     0.152 0.123     0.1196     0.0383
OPNSS      0.75485E-02 0.6385E-01 0.1182     0.906 0.010     0.0099     0.0153
CONSTANT    4.8143     0.8339      5.773     0.000 0.444     0.0000     1.1488
|_stop
```

All Countries Without Openness Degree and GDP P. Capita (GDP)

```
 OLS ESTIMATION
     151 OBSERVATIONS      DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,   141

 R-SQUARE =    0.1042     R-SQUARE ADJUSTED =    0.0797
VARIANCE OF THE ESTIMATE-SIGMA**2 =    13.579
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.6849
SUM OF SQUARED ERRORS-SSE=    1982.5
MEAN OF DEPENDENT VARIABLE =    4.2627
LOG OF THE LIKELIHOOD FUNCTION = -408.658

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       14.028
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.6410
 SCHWARZ (1978) CRITERION - LOG SC =                2.7410
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           14.044
 HANNAN AND QUINN (1979) CRITERION =               14.609
 RICE (1984) CRITERION =                           14.060
 SHIBATA (1981) CRITERION =                        13.998
 SCHWARZ (1978) CRITERION - SC =                   15.502
 AKAIKE (1974) INFORMATION CRITERION - AIC =       14.028

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        230.59          4.        57.647            4.245
ERROR             1982.5        146.        13.579          P-VALUE
TOTAL             2213.1        150.        14.754            0.003

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2974.4          5.        594.88           43.810
ERROR             1982.5        146.        13.579          P-VALUE
TOTAL             4956.9        151.        32.827            0.000

VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     146 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE      -1.9400     0.6228    -3.115    0.002-0.250    -0.2533    -0.2230
OILSHOCK  0.46613E-01   0.6457  0.7219E-01  0.943 0.006     0.0059     0.0041
INTEREST  0.12720E-01 0.9491E-02   1.340    0.182 0.110     0.1067     0.0346
INITGDP  -0.88771E-01 0.7532E-01  -1.179    0.240-0.097    -0.0981    -0.0813
CONSTANT    5.3950      0.6056     8.908    0.000 0.593     0.0000     1.2656
|_stop
```

All Countries Without Initial GDP (GDP)

```
 OLS ESTIMATION
     151 OBSERVATIONS      DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,  151

 R-SQUARE =    0.0957     R-SQUARE ADJUSTED =    0.0772
VARIANCE OF THE ESTIMATE-SIGMA**2 =    13.614
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.6898
SUM OF SQUARED ERRORS-SSE=    2001.3
MEAN OF DEPENDENT VARIABLE =    4.2627
LOG OF THE LIKELIHOOD FUNCTION = -409.373

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       13.975
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.6373
 SCHWARZ (1978) CRITERION - LOG SC =                2.7172
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =            13.985
 HANNAN AND QUINN (1979) CRITERION =                14.436
 RICE (1984) CRITERION =                            13.995
 SHIBATA (1981) CRITERION =                         13.956
 SCHWARZ (1978) CRITERION - SC =                    15.138
 AKAIKE (1974) INFORMATION CRITERION - AIC =        13.975

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF          MS              F
REGRESSION        211.73          3.       70.576          5.184
ERROR             2001.3        147.       13.614        P-VALUE
TOTAL             2213.1        150.       14.754          0.002

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF          MS              F
REGRESSION        2955.5          4.       738.89         54.272
ERROR             2001.3        147.       13.614        P-VALUE
TOTAL             4956.9        151.       32.827          0.000

VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     147 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 EXRATE    -2.0993     0.6088    -3.449    0.001-0.274    -0.2741    -0.2413
OILSHOCK  0.21775     0.6300     0.3456    0.730 0.028     0.0276     0.0193
INTEREST  0.13924E-01 0.9449E-02  1.474    0.143 0.121     0.1168     0.0379
CONSTANT   5.0478     0.5299     9.527    0.000 0.618     0.0000     1.1842
|_stop
```

All Countries Without Interest (GDP)

```
 OLS ESTIMATION
     151 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,   151

 R-SQUARE =    0.0932     R-SQUARE ADJUSTED =    0.0747
VARIANCE OF THE ESTIMATE-SIGMA**2 =    13.652
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.6949
SUM OF SQUARED ERRORS-SSE=    2006.9
MEAN OF DEPENDENT VARIABLE =    4.2627
LOG OF THE LIKELIHOOD FUNCTION = -409.582

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       14.014
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.6400
 SCHWARZ (1978) CRITERION - LOG SC =                2.7200
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           14.024
 HANNAN AND QUINN (1979) CRITERION =               14.476
 RICE (1984) CRITERION =                           14.034
 SHIBATA (1981) CRITERION =                        13.995
 SCHWARZ (1978) CRITERION - SC =                   15.180
 AKAIKE (1974) INFORMATION CRITERION - AIC =       14.014

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        206.20          3.         68.734            5.035
ERROR             2006.9        147.         13.652          P-VALUE
TOTAL             2213.1        150.         14.754            0.002

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2950.0          4.         737.50           54.021
ERROR             2006.9        147.         13.652          P-VALUE
TOTAL             4956.9        151.         32.827            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     147 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.9947     0.6231     -3.201     0.002-0.255    -0.2605    -0.2293
OILSHOCK -0.78557E-01 0.6407     -0.1226     0.903-0.010    -0.0099    -0.0070
INITGDP  -0.99637E-01 0.7508E-01  -1.327     0.187-0.109    -0.1102    -0.0913
CONSTANT    5.6591     0.5742      9.855     0.000 0.631     0.0000     1.3276
|_stop
```

All Countries (Unemployment)

```
OLS ESTIMATION
       55 OBSERVATIONS     DEPENDENT VARIABLE= UNMPL
...NOTE..SAMPLE RANGE SET TO:       1,      55

 R-SQUARE =    0.0794     R-SQUARE ADJUSTED =  -0.0145
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.3247
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1510
SUM OF SQUARED ERRORS-SSE=    64.911
MEAN OF DEPENDENT VARIABLE =    1.7353
LOG OF THE LIKELIHOOD FUNCTION = -82.5977

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.4692
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.38386
 SCHWARZ (1978) CRITERION - LOG SC =              0.60284
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.4869
 HANNAN AND QUINN (1979) CRITERION =               1.5977
 RICE (1984) CRITERION =                           1.5095
 SHIBATA (1981) CRITERION =                        1.4377
 SCHWARZ (1978) CRITERION - SC =                   1.8273
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.4679

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         5.6009          5.        1.1202            0.846
ERROR              64.911         49.        1.3247          P-VALUE
TOTAL              70.511         54.        1.3058            0.524

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         171.21          6.        28.536           21.541
ERROR              64.911         49.        1.3247          P-VALUE
TOTAL              236.12         55.        4.2932            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     49 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.16577     0.3475    -0.4770   0.635-0.068    -0.0677    -0.0660
OILSHOCK   0.15395     0.3636     0.4235   0.674 0.060     0.0606     0.0242
INTEREST   0.70318E-01 0.4007E-01  1.755   0.086 0.243     0.2740     0.2046
OPNSS     -0.15603E-01 0.2780E-01 -0.5612  0.577-0.080    -0.0786    -0.0771
GDPPC80    0.75465E-02 0.5157E-01  0.1463  0.884 0.021     0.0234     0.0240
CONSTANT   1.5451      0.5709      2.706   0.009 0.361     0.0000     0.8904
|_stop
```

All Countries Without Openness Degree and GDP P. Capita (Unemployment)

```
 OLS ESTIMATION
      68 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    68

 R-SQUARE =    0.0254     R-SQUARE ADJUSTED =  -0.0364
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.2330
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1104
SUM OF SQUARED ERRORS-SSE=    77.678
MEAN OF DEPENDENT VARIABLE =    1.6151
LOG OF THE LIKELIHOOD FUNCTION = -101.012

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.3237
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.28013
 SCHWARZ (1978) CRITERION - LOG SC =             0.44333
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.3308
 HANNAN AND QUINN (1979) CRITERION =               1.4117
 RICE (1984) CRITERION =                           1.3393
 SHIBATA (1981) CRITERION =                        1.3103
 SCHWARZ (1978) CRITERION - SC =                   1.5579
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.3233

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        2.0274          4.       0.50684              0.411
ERROR             77.678          63.       1.2330           P-VALUE
TOTAL             79.706          67.       1.1896              0.800

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        179.41          5.        35.882             29.102
ERROR             77.678          63.       1.2330           P-VALUE
TOTAL             257.09          68.       3.7807              0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      63 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.16907     0.2939     0.5753     0.567 0.072     0.0739     0.0693
OILSHOCK   0.12359     0.3276     0.3772     0.707 0.047     0.0484     0.0180
INTEREST -0.10190E-01 0.1590E-01 -0.6407     0.524-0.080    -0.0850    -0.0432
INITGDP  -0.27926E-01 0.2789E-01  -1.001     0.320-0.125    -0.1356    -0.1168
CONSTANT    1.7327     0.3280     5.283     0.000 0.554     0.0000     1.0728
|_stop
```

All Countries Without GDP P. Capita and Initial GDP (Unemployment)

```
OLS ESTIMATION
       64 OBSERVATIONS     DEPENDENT VARIABLE= UN
...NOTE..SAMPLE RANGE SET TO:       1,      64

 R-SQUARE =    0.0298     R-SQUARE ADJUSTED =  -0.0359
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.3040
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1419
SUM OF SQUARED ERRORS-SSE=    76.937
MEAN OF DEPENDENT VARIABLE =    1.6167
LOG OF THE LIKELIHOOD FUNCTION = -96.7036

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.4059
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.34036
 SCHWARZ (1978) CRITERION - LOG SC =              0.50902
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.4145
 HANNAN AND QUINN (1979) CRITERION =               1.5020
 RICE (1984) CRITERION =                           1.4248
 SHIBATA (1981) CRITERION =                        1.3900
 SCHWARZ (1978) CRITERION - SC =                   1.6637
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.4055

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        2.3665          4.       0.59163              0.454
ERROR             76.937          59.       1.3040           P-VALUE
TOTAL             79.304          63.       1.2588             0.769

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        169.64          5.        33.927             26.017
ERROR             76.937          59.       1.3040           P-VALUE
TOTAL             246.57          64.       3.8527             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO       PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     59 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.59899E-01 0.3132     0.1912    0.849 0.025     0.0253     0.0249
OILSHOCK   0.20085     0.3444     0.5833    0.562 0.076     0.0764     0.0291
INTEREST -0.38694E-02 0.1669E-01 -0.2318    0.818-0.030    -0.0304    -0.0157
OPNSS    -0.28152E-01 0.2671E-01  -1.054    0.296-0.136    -0.1383    -0.1531
CONSTANT   1.8023     0.4016      4.488    0.000 0.504     0.0000     1.1148
|_stop
```

All Countries Without Initial GDP (Unemployment)

```
 OLS ESTIMATION
      68 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    68

 R-SQUARE =    0.0099     R-SQUARE ADJUSTED =  -0.0365
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.2330
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1104
SUM OF SQUARED ERRORS-SSE=    78.915
MEAN OF DEPENDENT VARIABLE =    1.6151
LOG OF THE LIKELIHOOD FUNCTION = -101.549

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.3056
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.26651
 SCHWARZ (1978) CRITERION - LOG SC =              0.39707
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.3101
 HANNAN AND QUINN (1979) CRITERION =               1.3747
 RICE (1984) CRITERION =                           1.3152
 SHIBATA (1981) CRITERION =                        1.2970
 SCHWARZ (1978) CRITERION - SC =                   1.4875
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.3054

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        0.79096          3.       0.26365            0.214
ERROR              78.915         64.        1.2330          P-VALUE
TOTAL              79.706         67.        1.1896            0.886

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         178.18          4.        44.544           36.125
ERROR              78.915         64.        1.2330          P-VALUE
TOTAL              257.09         68.        3.7807            0.000


VARIABLE    ESTIMATED   STANDARD    T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      64 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE      0.10899      0.2877      0.3788    0.706 0.047     0.0476     0.0447
OILSHOCK    0.20000      0.3186      0.6277    0.532 0.078     0.0784     0.0291
INTEREST -0.52173E-02 0.1511E-01   -0.3453    0.731-0.043    -0.0435    -0.0221
CONSTANT    1.5317       0.2594      5.905     0.000 0.594     0.0000     0.9483
|_stop
```

All Countries Without Interest (Unemployment)

```
 OLS ESTIMATION
      68 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:    1,   68

 R-SQUARE =    0.0191     R-SQUARE ADJUSTED =  -0.0269
VARIANCE OF THE ESTIMATE-SIGMA**2 =   1.2216
STANDARD ERROR OF THE ESTIMATE-SIGMA =   1.1053
SUM OF SQUARED ERRORS-SSE=   78.185
MEAN OF DEPENDENT VARIABLE =   1.6151
LOG OF THE LIKELIHOOD FUNCTION = -101.233

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      1.2935
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.25721
 SCHWARZ (1978) CRITERION - LOG SC =              0.38777
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          1.2980
 HANNAN AND QUINN (1979) CRITERION =              1.3620
 RICE (1984) CRITERION =                          1.3031
 SHIBATA (1981) CRITERION =                       1.2850
 SCHWARZ (1978) CRITERION - SC =                  1.4737
 AKAIKE (1974) INFORMATION CRITERION - AIC =      1.2933

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        1.5212           3.       0.50708            0.415
ERROR             78.185          64.        1.2216          P-VALUE
TOTAL             79.706          67.        1.1896            0.743

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        178.91           4.        44.726           36.612
ERROR             78.185          64.        1.2216          P-VALUE
TOTAL             257.09          68.        3.7807            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     64 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.13262     0.2870     0.4621    0.646 0.058     0.0580     0.0543
OILSHOCK   0.15301     0.3229     0.4739    0.637 0.059     0.0599     0.0223
INITGDP  -0.22348E-01 0.2637E-01 -0.8474    0.400-0.105    -0.1085    -0.0935
CONSTANT   1.6423      0.2947     5.572     0.000 0.572     0.0000     1.0169
|_stop
```

Developed Countries (GDP)

```
OLS ESTIMATION
       22 OBSERVATIONS      DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:      1,      22

 R-SQUARE =    0.3666     R-SQUARE ADJUSTED =    0.1686
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.48501
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.69643
SUM OF SQUARED ERRORS-SSE=    7.7602
MEAN OF DEPENDENT VARIABLE =    2.1861
LOG OF THE LIKELIHOOD FUNCTION = -19.7542

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.61729
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.49658
 SCHWARZ (1978) CRITERION - LOG SC =             -0.19903
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.66689
 HANNAN AND QUINN (1979) CRITERION =              0.65280
 RICE (1984) CRITERION =                          0.77602
 SHIBATA (1981) CRITERION =                       0.54514
 SCHWARZ (1978) CRITERION - SC =                  0.81953
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.60861

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         4.4912          5.       0.89823             1.852
ERROR              7.7602         16.       0.48501          P-VALUE
TOTAL              12.251         21.       0.58340            0.159

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         109.63          6.        18.272            37.674
ERROR              7.7602         16.       0.48501          P-VALUE
TOTAL              117.39         22.        5.3361            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      16 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE   -0.13471E-01 0.3975     -0.3389E-01 0.973-0.008    -0.0070    -0.0050
OILSHOCK -0.44385     0.4067      -1.091     0.291-0.263    -0.2649    -0.1477
INTEREST  0.19666     0.1004       1.960     0.068 0.440     0.4260     0.3110
OPNSS     0.66003E-01 0.4669E-01   1.414     0.177 0.333     0.3133     0.2165
GDPPC80  -0.56813E-01 0.9448E-01 -0.6013     0.556-0.149    -0.1393    -0.2475
CONSTANT   1.9077      1.360       1.403     0.180 0.331     0.0000     0.8726
|_stop
```

Developed Countries Without GDP P. Capita and Initial GDP (GDP)

```
OLS ESTIMATION
       23 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:       1,      23

 R-SQUARE =    0.3800     R-SQUARE ADJUSTED =    0.2422
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.44442
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.66665
SUM OF SQUARED ERRORS-SSE=    7.9996
MEAN OF DEPENDENT VARIABLE =    2.1503
LOG OF THE LIKELIHOOD FUNCTION = -20.4905

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.54104
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.62131
 SCHWARZ (1978) CRITERION - LOG SC =             -0.37447
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.56788
 HANNAN AND QUINN (1979) CRITERION =              0.57165
 RICE (1984) CRITERION =                          0.61536
 SHIBATA (1981) CRITERION =                       0.49903
 SCHWARZ (1978) CRITERION - SC =                  0.68766
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.53724

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        4.9022          4.        1.2255             2.758
ERROR             7.9996         18.       0.44442           P-VALUE
TOTAL             12.902         22.       0.58645             0.060

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        111.25          5.        22.250            50.064
ERROR             7.9996         18.       0.44442           P-VALUE
TOTAL             119.25         23.        5.1847             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     18 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE   -0.31406E-01 0.3749    -0.8376E-01 0.934-0.020    -0.0159    -0.0121
OILSHOCK -0.31324     0.3451    -0.9078     0.376-0.209    -0.1924    -0.1013
INTEREST  0.22549     0.8753E-01  2.576     0.019 0.519     0.5098     0.3490
OPNSS     0.76770E-01 0.4207E-01  1.825     0.085 0.395     0.3575     0.2530
CONSTANT   1.0997     0.5618      1.957     0.066 0.419     0.0000     0.5114
|_stop
```

Developed Countries Without Openness Degree and GDP P. Capita (GDP)

```
 OLS ESTIMATION
      23 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,   23

 R-SQUARE =    0.3028     R-SQUARE ADJUSTED =    0.1478
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.49975
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.70693
SUM OF SQUARED ERRORS-SSE=    8.9955
MEAN OF DEPENDENT VARIABLE =    2.1503
LOG OF THE LIKELIHOOD FUNCTION = -21.8397

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.60839
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.50399
 SCHWARZ (1978) CRITERION - LOG SC =             -0.25714
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.63857
 HANNAN AND QUINN (1979) CRITERION =              0.64281
 RICE (1984) CRITERION =                          0.69196
 SHIBATA (1981) CRITERION =                       0.56115
 SCHWARZ (1978) CRITERION - SC =                  0.77326
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.60411

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        3.9064          4.       0.97659             1.954
ERROR             8.9955         18.       0.49975           P-VALUE
TOTAL             12.902         22.       0.58645             0.145

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        110.25          5.        22.050             44.123
ERROR             8.9955         18.       0.49975           P-VALUE
TOTAL             119.25         23.        5.1847             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     18 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.54143E-01 0.4049     0.1337    0.895 0.032     0.0274     0.0208
OILSHOCK   -1.0004     0.6092    -1.642     0.118-0.361    -0.6146    -0.3237
INTEREST   0.19421     0.1007     1.928     0.070 0.414     0.4391     0.3006
INITGDP  -0.53480E-01 0.5434E-01 -0.9842    0.338-0.226    -0.3891    -0.2247
CONSTANT    2.6383      1.017     2.594     0.018 0.522     0.0000     1.2270
|_stop
```

Developed Countries Without Initial GDP (GDP)

```
 OLS ESTIMATION
      23 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.2653     R-SQUARE ADJUSTED =    0.1492
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.49892
STANDARD ERROR OF THF ESTIMATE-SIGMA =  0.70634
SUM OF SQUARED ERRORS-SSE=    9.4795
MEAN OF DEPENDENT VARIABLE =    2.1503
LOG OF THE LIKELIHOOD FUNCTION = -22.4425

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.58569
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.53853
 SCHWARZ (1978) CRITERION - LOG SC =             -0.34106
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.60396
 HANNAN AND QUINN (1979) CRITERION =              0.61332
 RICE (1984) CRITERION =                          0.63197
 SHIBATA (1981) CRITERION =                       0.55551
 SCHWARZ (1978) CRITERION - SC =                  0.71102
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.58360

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        3.4223          3.        1.1408              2.286
ERROR             9.4795         19.       0.49892            P-VALUE
TOTAL             12.902         22.       0.58645              0.111

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        109.77          4.        27.442             55.003
ERROR             9.4795         19.       0.49892            P-VALUE
TOTAL             119.25         23.        5.1847              0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      19 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE   -0.21514E-01 0.3972     -0.5416E-01 0.957-0.012    -0.0109    -0.0083
OILSHOCK -0.50827     0.3476      -1.462     0.160-0.318    -0.3123    -0.1644
INTEREST  0.23292     0.9265E-01   2.514     0.021 0.500     0.5266     0.3605
CONSTANT   1.7465     0.4618       3.782     0.001 0.655     0.0000     0.8122
|_stop
```

Developed Countries Without Interest (GDP)

```
 OLS ESTIMATION
      23 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.1588     R-SQUARE ADJUSTED =    0.0259
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.57123
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.75580
SUM OF SQUARED ERRORS-SSE=    10.853
MEAN OF DEPENDENT VAPIABLE =    2.1503
LOG OF THE LIKELIHOOD FUNCTION = -23.9990

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.67058
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.40318
 SCHWARZ (1978) CRITERION - LOG SC =             -0.20571
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.69149
 HANNAN AND QUINN (1979) CRITERION =              0.70221
 RICE (1984) CRITERION =                          0.72356
 SHIBATA (1981) CRITERION =                       0.63602
 SCHWARZ (1978) CRITERION - SC =                  0.81407
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.66819

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        2.0484          3.       0.68279             1.195
ERROR             10.853         19.       0.57123           P-VALUE
TOTAL             12.902         22.       0.58645             0.338

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        108.39          4.        27.099            47.439
ERROR             10.853         19.       0.57123           P-VALUE
TOTAL             119.25         23.        5.1847             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      19 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    0.60862E-01 0.4329      0.1406     0.890 0.032     0.0308     0.0234
OILSHOCK  -1.1643     0.6449      -1.805     0.087-0.383    -0.7153    -0.3767
INITGDP  -0.94399E-01 0.5348E-01  -1.765     0.094-0.375    -0.6869    -0.3966
CONSTANT   3.7627     0.8911       4.223     0.000 0.696     0.0000     1.7499
|_stop
```

Developed Countries Without Interest and Initial GDP (GDP)

```
 OLS ESTIMATION
      23 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.0208     R-SQUARE ADJUSTED =  -0.0771
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.63165
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.79477
SUM OF SQUARED ERRORS-SSE=   12.633
MEAN OF DEPENDENT VARIABLE =   2.1503
LOG OF THE LIKELIHOOD FUNCTION = -25.7450

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.71404
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.33831
 SCHWARZ (1978) CRITERION - LOG SC =             -0.19020
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.72640
 HANNAN AND QUINN (1979) CRITERION =              0.74003
 RICE (1984) CRITERION =                          0.74312
 SHIBATA (1981) CRITERION =                       0.69255
 SCHWARZ (1978) CRITERION - SC =                  0.82679
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.71298

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION       0.26878          2.       0.13439             0.213
ERROR             12.633         20.       0.63165           P-VALUE
TOTAL             12.902         22.       0.58645             0.810

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        106.61          3.        35.538            56.262
ERROR             12.633         20.       0.63165           P-VALUE
TOTAL             119.25         23.        5.1847             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     20 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE   -0.93926E-01 0.4458    -0.2107    0.835-0.047    -0.0475    -0.0361
OILSHOCK -0.20725     0.3672    -0.5644    0.579-0.125    -0.1273    -0.0670
CONSTANT   2.3721     0.4377      5.419    0.000 0.771     0.0000     1.1031
|_stop
```

Developed Countries (Unemployment)

```
OLS ESTIMATION
       20 OBSERVATIONS     DEPENDENT VARIABLE= UMPL
...NOTE..SAMPLE RANGE SET TO:       1,      20

 R-SQUARE =    0.3694     R-SQUARE ADJUSTED =    0.1442
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.78739
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.88735
SUM OF SQUARED ERRORS-SSE=    11.023
MEAN OF DEPENDENT VARIABLE =    1.6147
LOG OF THE LIKELIHOOD FUNCTION = -22.4217

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.0236
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.42961E-02
 SCHWARZ (1978) CRITERION - LOG SC =              0.30302
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.1248
 HANNAN AND QUINN (1979) CRITERION =               1.0646
 RICE (1984) CRITERION =                           1.3779
 SHIBATA (1981) CRITERION =                       0.88188
 SCHWARZ (1978) CRITERION - SC =                   1.3539
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.0043

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        6.4575          5.        1.2915             1.640
ERROR             11.023         14.       0.78739           P-VALUE
TOTAL             17.481         19.       0.92005             0.214

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        58.602          6.        9.7670            12.404
ERROR             11.023         14.       0.78739           P-VALUE
TOTAL             69.625         20.        3.4813             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     14 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE      0.67523     0.5284     1.278    0.222 0.323     0.2889     0.3345
OILSHOCK    0.38299     0.4342    0.8820    0.393 0.229     0.2038     0.1067
INTEREST    0.13592     0.1873    0.7256    0.480 0.190     0.1880     0.2208
OPNSS     0.43932E-01 0.9117E-01  0.4819    0.637 0.128     0.1234     0.1795
GDPPC80   -0.17461     0.1323    -1.320    0.208-0.333    -0.3467    -1.0146
CONSTANT    1.8942      2.113    0.8963    0.385 0.233     0.0000     1.1731
|_stop
```

Developed Countries Without GDP P. Capita and Initial GDP (Unemployment)

```
OLS ESTIMATION
       21 OBSERVATIONS     DEPENDENT VARIABLE= UN
...NOTE..SAMPLE RANGE SET TO:       1,      21

 R-SQUARE =    0.2682     R-SQUARE ADJUSTED =    0.0853
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.79949
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.89414
SUM OF SQUARED ERRORS-SSE=    12.792
MEAN OF DEPENDENT VARIABLE =    1.6147
LOG OF THE LIKELIHOOD FUNCTION = -24.5927

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.98985
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.19520E-01
 SCHWARZ (1978) CRITERION - LOG SC =               0.22918
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.0493
 HANNAN AND QUINN (1979) CRITERION =               1.0351
 RICE (1984) CRITERION =                           1.1629
 SHIBATA (1981) CRITERION =                       0.89920
 SCHWARZ (1978) CRITERION - SC =                   1.2576
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.98067

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         4.6891          4.        1.1723            1.466
ERROR              12.792         16.       0.79949          P-VALUE
TOTAL              17.481         20.       0.87405            0.259

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         59.444          5.        11.889           14.870
ERROR              12.792         16.       0.79949          P-VALUE
TOTAL              72.236         21.        3.4398            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT  ERROR     16 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.88251     0.5111     1.727     0.103 0.396     0.3798     0.4424
OILSHOCK   0.36014     0.4297    0.8380     0.414 0.205     0.1953     0.0956
INTEREST   0.22937     0.1513     1.516     0.149 0.354     0.3373     0.3580
OPNSS      0.78288E-01 0.8237E-01 0.9505    0.356 0.231     0.2213     0.3166
CONSTANT -0.34337      0.9454    -0.3632    0.721-0.090     0.0000    -0.2126
|_stop
```

Developed Countries Without Openness Degree and GDP P. Capita (Unemployment)

```
 OLS ESTIMATION
      21 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    21

 R-SQUARE =    0.2453     R-SQUARE ADJUSTED =    0.0566
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.82457
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.90806
SUM OF SQUARED ERRORS-SSE=    13.193
MEAN OF DEPENDENT VARIABLE =    1.6147
LOG OF THE LIKELIHOOD FUNCTION = -24.9170

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.0209
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.11365E-01
 SCHWARZ (1978) CRITERION - LOG SC =               0.26006
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =            1.0822
 HANNAN AND QUINN (1979) CRITERION =                1.0675
 RICE (1984) CRITERION =                            1.1994
 SHIBATA (1981) CRITERION =                        0.92741
 SCHWARZ (1978) CRITERION - SC =                    1.2970
 AKAIKE (1974) INFORMATION CRITERION - AIC =        1.0114

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        4.2878          4.        1.0720            1.300
ERROR             13.193          16.      0.82457          P-VALUE
TOTAL             17.481          20.      0.87405            0.312

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        59.043          5.        11.809           14.321
ERROR             13.193          16.      0.82457          P-VALUE
TOTAL             72.236          21.       3.4398            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      16 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.78982     0.5069      1.558     0.139 0.363     0.3399     0.3960
OILSHOCK -0.39393E-01 0.6005     -0.6560E-01 0.949-0.016    -0.0214    -0.0105
INTEREST   0.12520     0.2088      0.5997     0.557 0.148     0.1841     0.1954
INITGDP  -0.40123E-01 0.6430E-01 -0.6240     0.541-0.154    -0.2588    -0.2735
CONSTANT    1.1183      1.379      0.8109     0.429 0.199     0.0000     0.6925
|_stop
```

Developed Countries Without Initial GDP (Unemployment)

```
 OLS ESTIMATION
      21 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    21

 R-SQUARE =    0.2269     R-SQUARE ADJUSTED =    0.0905
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.79495
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.89160
SUM OF SQUARED ERRORS-SSE=    13.514
MEAN OF DEPENDENT VARIABLE =    1.6147
LOG OF THE LIKELIHOOD FUNCTION = -25.1695

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.94637
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.59831E-01
 SCHWARZ (1978) CRITERION - LOG SC =               0.13913
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           0.98200
 HANNAN AND QUINN (1979) CRITERION =               0.98349
 RICE (1984) CRITERION =                           1.0396
 SHIBATA (1981) CRITERION =                        0.88869
 SCHWARZ (1978) CRITERION - SC =                   1.1493
 AKAIKE (1974) INFORMATION CRITERION - AIC =       0.94192

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        3.9668          3.        1.3223             1.663
ERROR             13.514         17.       0.79495           P-VALUE
TOTAL             17.481         20.       0.87405             0.212

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        58.722          4.        14.681            18.467
ERROR             13.514         17.       0.79495           P-VALUE
TOTAL             72.236         21.        3.4398             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     17 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.77618     0.4973     1.561    0.137 0.354     0.3341     0.3891
OILSHOCK   0.23182     0.4068    0.5698    0.576 0.137     0.1257     0.0615
INTEREST   0.21398     0.1500     1.427    0.172 0.327     0.3147     0.3340
CONSTANT   0.34771     0.6026    0.5770    0.571 0.139     0.0000     0.2153
|_stop
```

Developed Countries Without Interest (Unemployment)

```
 OLS ESTIMATION
      21 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    21

 R-SQUARE =    0.2283     R-SQUARE ADJUSTED =    0.0921
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.79351
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.89079
SUM OF SQUARED ERRORS-SSE=    13.490
MEAN OF DEPENDENT VARIABLE =    1.6147
LOG OF THE LIKELIHOOD FUNCTION = -25.1504

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.94465
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.61646E-01
 SCHWARZ (1978) CRITERION - LOG SC =               0.13731
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.98022
 HANNAN AND QUINN (1979) CRITERION =              0.98170
 RICE (1984) CRITERION =                           1.0377
 SHIBATA (1981) CRITERION =                       0.88708
 SCHWARZ (1978) CRITERION - SC =                   1.1472
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.94022

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         3.9913          3.        1.3304             1.677
ERROR              13.490         17.       0.79351           P-VALUE
TOTAL              17.481         20.       0.87405             0.210

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         58.747          4.        14.687            18.508
ERROR              13.490         17.       0.79351           P-VALUE
TOTAL              72.236         21.        3.4398             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     17 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.78803     0.4973     1.585    0.131 0.359     0.3392     0.3951
OILSHOCK -0.17199      0.5477    -0.3140   0.757-0.076    -0.0933    -0.0456
INITGDP  -0.66405E-01 0.4616E-01 -1.439    0.168-0.329    -0.4282    -0.4526
CONSTANT   1.7814      0.8084     2.204    0.042 0.471     0.0000     1.1032
|_stop
```

Developed Countries Without Interest and Initial GDP (Unemployment)

```
 OLS ESTIMATION
      21 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    21

 R-SQUARE =    0.1344      R-SQUARE ADJUSTED =    0.0382
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.84066
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.91688
SUM OF SQUARED ERRORS-SSE=    15.132
MEAN OF DEPENDENT VARIABLE =    1.6147
LOG OF THE LIKELIHOOD FUNCTION = -26.3567

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =      0.96076
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC = -0.42002E-01
 SCHWARZ (1978) CRITERION - LOG SC =               0.10722
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          0.98077
 HANNAN AND QUINN (1979) CRITERION =              0.99043
 RICE (1984) CRITERION =                           1.0088
 SHIBATA (1981) CRITERION =                       0.92644
 SCHWARZ (1978) CRITERION - SC =                   1.1132
 AKAIKE (1974) INFORMATION CRITERION - AIC =      0.95887

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        2.3490           2.        1.1745              1.397
ERROR             15.132          18.       0.84066            P-VALUE
TOTAL             17.481          20.       0.87405              0.273

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        57.104           3.        19.035             22.643
ERROR             15.132          18.       0.84066            P-VALUE
TOTAL             72.236          21.        3.4398              0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     18 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     0.74196     0.5108     1.453     0.164 0.324     0.3193     0.3720
OILSHOCK   0.37565     0.4053    0.9269     0.366 0.213     0.2038     0.0997
CONSTANT   0.85312     0.5012     1.702     0.106 0.372     0.0000     0.5283
|_stop
```

Developing Countries (GDP)

```
OLS ESTIMATION
      95 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:       1,      95

 R-SQUARE =    0.0642     R-SQUARE ADJUSTED =    0.0117
VARIANCE OF THE ESTIMATE-SIGMA**2 =    18.653
STANDARD ERROR OF THE ESTIMATE-SIGMA =    4.3190
SUM OF SQUARED ERRORS-SSE=    1660.1
MEAN OF DEPENDENT VARIABLE =    4.6611
LOG OF THE LIKELIHOOD FUNCTION = -270.686

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       19.831
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.9871
 SCHWARZ (1978) CRITERION - LOG SC =                3.1484
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           19.911
 HANNAN AND QUINN (1979) CRITERION =               21.163
 RICE (1984) CRITERION =                           20.002
 SHIBATA (1981) CRITERION =                        19.683
 SCHWARZ (1978) CRITERION - SC =                   23.299
 AKAIKE (1974) INFORMATION CRITERION - AIC =       19.828

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         113.95          5.        22.789             1.222
ERROR              1660.1         89.        18.653           P-VALUE
TOTAL              1774.1         94.        18.873             0.306

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         2177.9          6.        362.99            19.460
ERROR              1660.1         89.        18.653           P-VALUE
TOTAL              3838.1         95.        40.401             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     89 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.4482     0.9529    -1.520    0.132-0.159    -0.1664    -0.1374
OILSHOCK    1.0590     0.9855     1.075    0.285 0.113     0.1195     0.0885
INTEREST  0.11041E-01 0.1137E-01 0.9707    0.334 0.102     0.1008     0.0303
OPNSS    -0.30142E-01 0.8976E-01 -0.3358   0.738-0.036    -0.0376    -0.0563
GDPPC80   0.27091E-01 0.2918     0.9285E-01 0.926 0.010     0.0105     0.0119
CONSTANT   4.9547      1.178      4.205    0.000 0.407     0.0000     1.0630
|_stop
```

Developing Countries Without GDP P. Capita and Initial GDP (GDP)

```
OLS ESTIMATION
      115 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:      1,     115

 R-SQUARE =    0.0701     R-SQUARE ADJUSTED =    0.0363
VARIANCE OF THE ESTIMATE-SIGMA**2 =    16.240
STANDARD ERROR OF THE ESTIMATE-SIGMA =    4.0299
SUM OF SQUARED ERRORS-SSE=    1786.4
MEAN OF DEPENDENT VARIABLE =    4.6392
LOG OF THE LIKELIHOOD FUNCTION = -320.902

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       16.946
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.8300
 SCHWARZ (1978) CRITERION - LOG SC =                2.9493
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           16.978
 HANNAN AND QUINN (1979) CRITERION =               17.786
 RICE (1984) CRITERION =                           17.013
 SHIBATA (1981) CRITERION =                        16.885
 SCHWARZ (1978) CRITERION - SC =                   19.093
 AKAIKE (1974) INFORMATION CRITERION - AIC =       16.945

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         134.62         4.         33.655            2.072
ERROR              1786.4       110.         16.240          P-VALUE
TOTAL              1921.0       114.         16.851            0.089

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         2609.7         5.        521.93            32.139
ERROR              1786.4       110.         16.240          P-VALUE
TOTAL              4396.1       115.         38.227            0.000


VARIABLE    ESTIMATED   STANDARD    T-RATIO       PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      110 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE      -1.5369      0.7993      -1.923     0.057-0.180    -0.1868    -0.1469
OILSHOCK    0.96032      0.8430       1.139     0.257 0.108     0.1098     0.0666
INTEREST  0.12398E-01  0.1039E-01     1.193     0.235 0.113     0.1106     0.0361
OPNSS    -0.74451E-02  0.7340E-01   -0.1014     0.919-0.010    -0.0094    -0.0139
CONSTANT     4.9090      0.9529       5.152     0.000 0.441     0.0000     1.0582
|_stop
```

Developing Countries Without Openness Degree and GDP P. Capita (GDP)

```
 OLS ESTIMATION
     125 OBSERVATIONS      DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,   125

 R-SQUARE =    0.0806      R-SQUARE ADJUSTED =    0.0500
VARIANCE OF THE ESTIMATE-SIGMA**2 =    15.793
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.9740
SUM OF SQUARED ERRORS-SSE=    1895.1
MEAN OF DEPENDENT VARIABLE =    4.6904
LOG OF THE LIKELIHOOD FUNCTION = -347.288

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       16.424
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.7987
 SCHWARZ (1978) CRITERION - LOG SC =                2.9119
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =            16.451
 HANNAN AND QUINN (1979) CRITERION =                17.196
 RICE (1984) CRITERION =                            16.479
 SHIBATA (1981) CRITERION =                         16.374
 SCHWARZ (1978) CRITERION - SC =                    18.391
 AKAIKE (1974) INFORMATION CRITERION - AIC =        16.424

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        166.19           4.        41.549             2.631
ERROR             1895.1         120.        15.793           P-VALUE
TOTAL             2061.3         124.        16.624             0.038

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2916.2           5.        583.25            36.931
ERROR             1895.1         120.        15.793           P-VALUE
TOTAL             4811.4         125.        38.491             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     120 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.7853     0.7496    -2.382     0.019-0.212    -0.2178    -0.1644
OILSHOCK   0.92327     0.8553     1.079     0.283 0.098     0.1053     0.0614
INTEREST   0.12619E-01 0.1025E-01 1.231     0.221 0.112     0.1089     0.0358
INITGDP    0.23635E-01 0.1216     0.1944    0.846 0.018     0.0184     0.0148
CONSTANT    4.9362     0.7525     6.560     0.000 0.514     0.0000     1.0524
|_stop
```

Developing Countries Without Initial GDP (GDP)

```
 OLS ESTIMATION
     125 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,  125

 R-SQUARE =    0.0803     R-SQUARE ADJUSTED =    0.0575
VARIANCE OF THE ESTIMATE-SIGMA**2 =    15.667
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.9582
SUM OF SQUARED ERRORS-SSE=    1895.7
MEAN OF DEPENDENT VARIABLE =    4.6904
LOG OF THE LIKELIHOOD FUNCTION = -347.308

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       16.169
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.7830
 SCHWARZ (1978) CRITERION - LOG SC =                2.8735
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           16.185
 HANNAN AND QUINN (1979) CRITERION =               16.774
 RICE (1984) CRITERION =                           16.203
 SHIBATA (1981) CRITERION =                        16.136
 SCHWARZ (1978) CRITERION - SC =                   17.700
 AKAIKE (1974) INFORMATION CRITERION - AIC =       16.168

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        165.60           3.        55.199             3.523
ERROR             1895.7         121.        15.667           P-VALUE
TOTAL             2061.3         124.        16.624             0.017

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2915.6           4.        728.91            46.525
ERROR             1895.7         121.        15.667           P-VALUE
TOTAL             4811.4         125.        38.491             0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     121 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.7769     0.7454    -2.384     0.019-0.212    -0.2167    -0.1637
OILSHOCK   0.86586     0.7995     1.083     0.281 0.098     0.0988     0.0576
INTEREST   0.12463E-01 0.1018E-01 1.225     0.223 0.111     0.1076     0.0354
CONSTANT    5.0219     0.6075     8.267     0.000 0.601     0.0000     1.0707
|_stop
```

Developing Countries Without Interest (GDP)

```
 OLS ESTIMATION
     125 OBSERVATIONS      DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,   125

 R-SQUARE =    0.0690     R-SQUARE ADJUSTED =    0.0459
VARIANCE OF THE ESTIMATE-SIGMA**2 =    15.860
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.9825
SUM OF SQUARED ERRORS-SSE=    1919.1
MEAN OF DEPENDENT VARIABLE =    4.6904
LOG OF THE LIKELIHOOD FUNCTION = -348.072

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       16.368
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.7953
 SCHWARZ (1978) CRITERION - LOG SC =                2.8858
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           16.384
 HANNAN AND QUINN (1979) CRITERION =               16.980
 RICE (1984) CRITERION =                           16.402
 SHIBATA (1981) CRITERION =                        16.335
 SCHWARZ (1978) CRITERION - SC =                   17.918
 AKAIKE (1974) INFORMATION CRITERION - AIC =       16.367

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        142.26          3.        47.419            2.990
ERROR             1919.1        121.        15.860          P-VALUE
TOTAL             2061.3        124.        16.624            0.034

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        2892.3          4.        723.07           45.591
ERROR             1919.1        121.        15.860          P-VALUE
TOTAL             4811.4        125.        38.491            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO       PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     121 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.8534     0.7491     -2.474     0.015-0.219    -0.2261    -0.1707
OILSHOCK   0.78430     0.8496     0.9231     0.358 0.084     0.0895     0.0522
INITGDP   0.11889E-01  0.1215   0.9789E-01   0.922 0.009     0.0092     0.0074
CONSTANT    5.2115     0.7200      7.238     0.000 0.550     0.0000     1.1111
|_stop
```

Developing Countries Without Initial GDP and Interest (GDP)

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 OLS ESTIMATION
     125 OBSERVATIONS      DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,   125

 R-SQUARE =    0.0689      R-SQUARE ADJUSTED =    0.0537
VARIANCE OF THE ESTIMATE-SIGMA**2 =    15.731
STANDARD ERROR OF THE ESTIMATE-SIGMA =    3.9663
SUM OF SQUARED ERRORS-SSE=    1919.2
MEAN OF DEPENDENT VARIABLE =    4.6904
LOG OF THE LIKELIHOOD FUNCTION = -348.077

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       16.109
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    2.7794
 SCHWARZ (1978) CRITFRION - LOG SC =                2.8472
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           16.118
 HANNAN AND QUINN (1979) CRITERION =               16.559
 RICE (1984) CRITERION =                           16.128
 SHIBATA (1981) CRITERION =                        16.091
 SCHWARZ (1978) CRITERION - SC =                   17.240
 AKAIKE (1974) INFORMATION CRITERION - AIC =       16.109

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         142.11         2.         71.053            4.517
ERROR              1919.2       122.         15.731          P-VALUE
TOTAL              2061.3       124.         16.624            0.013

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         2892.1         3.        964.05            61.282
ERROR              1919.2       122.         15.731          P-VALUE
TOTAL              4811.4       125.         38.491            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT  ERROR     122 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -1.8487     0.7446    -2.483    0.014-0.219    -0.2255    -0.1703
OILSHOCK   0.75611     0.7961     0.9498   0.344 0.086     0.0863     0.0503
CONSTANT    5.2532     0.5785     9.080    0.000 0.635     0.0000     1.1200
|_stop
```

Developing Countries (unemployment)

```
OLS ESTIMATION
       32 OBSERVATIONS     DEPENDENT VARIABLE= UMPL
...NOTE..SAMPLE RANGE SET TO:      1,      32

 R-SQUARE =    0.2566     R-SQUARE ADJUSTED =    0.1136
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.4231
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1929
SUM OF SQUARED ERRORS-SSE=    37.001
MEAN OF DEPENDENT VARIABLE =    1.8608
LOG OF THE LIKELIHOOD FUNCTION = -47.7292

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.6899
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.52020
 SCHWARZ (1978) CRITERION - LOG SC =             0.79502
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          1.7515
 HANNAN AND QUINN (1979) CRITERION =              1.8428
 RICE (1984) CRITERION =                          1.8500
 SHIBATA (1981) CRITERION =                       1.5899
 SCHWARZ (1978) CRITERION - SC =                  2.2145
 AKAIKE (1974) INFORMATION CRITERION - AIC =      1.6824

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        12.771          5.        2.5541             1.795
ERROR             37.001         26.        1.4231           P-VALUE
TOTAL             49.771         31.        1.6055             0.149

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        123.58          6.        20.596            14.473
ERROR             37.001         26.        1.4231           P-VALUE
TOTAL             160.58         32.        5.0180             0.000

VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      26 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.53617     0.4640    -1.156     0.258-0.221    -0.2081    -0.1801
OILSHOCK   0.59374     0.6213     0.9556    0.348 0.184     0.1729     0.0499
INTEREST   0.61920E-01 0.4436E-01  1.396     0.175 0.264     0.2476     0.2268
OPNSS     -0.56445E-01 0.3475E-01 -1.624     0.116-0.304    -0.3092    -0.2952
GDPPC80    0.29517     0.1519     1.943     0.063 0.356     0.3682     0.4627
CONSTANT   1.3694      0.6780     2.020     0.054 0.368     0.0000     0.7359
|_stop
```

Developing Countries Without GDP P. Capita and Initial GDP (Unemployment)

```
OLS ESTIMATION
       40 OBSERVATIONS     DEPENDENT VARIABLE= UN
...NOTE..SAMPLE RANGE SET TO:       1,      40

 R-SQUARE =    0.0895     R-SQUARE ADJUSTED =  -0.0146
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.5519
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.2458
SUM OF SQUARED ERRORS-SSE=    54.317
MEAN OF DEPENDENT VARIABLE =    1.6489
LOG OF THE LIKELIHOOD FUNCTION = -62.8768

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.7459
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.55596
 SCHWARZ (1978) CRITERION - LOG SC =              0.76707
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          1.7736
 HANNAN AND QUINN (1979) CRITERION =              1.8819
 RICE (1984) CRITERION =                          1.8106
 SHIBATA (1981) CRITERION =                       1.6974
 SCHWARZ (1978) CRITERION - SC =                  2.1535
 AKAIKE (1974) INFORMATION CRITERION - AIC =      1.7436

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        5.3388          4.        1.3347            0.860
ERROR             54.317          35.       1.5519          P-VALUE
TOTAL             59.656          39.       1.5296            0.497

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        114.10          5.        22.820           14.704
ERROR             54.317          35.       1.5519          P-VALUE
TOTAL             168.42          40.       4.2104            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     35 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.18300     0.4239    -0.4317   0.669-0.073    -0.0734    -0.0666
OILSHOCK   0.59868     0.6091     0.9829   0.332 0.164     0.1621     0.0454
INTEREST -0.85673E-02 0.2002E-01 -0.4280   0.671-0.072    -0.0720    -0.0466
OPNSS    -0.49866E-01 0.3205E-01  -1.556   0.129-0.254    -0.2567    -0.3004
CONSTANT   2.2561     0.4969      4.541   0.000 0.609     0.0000     1.3682
|_stop
```

Developing Countries Without Openness Degree and GDP P. Capita (Unemployment)

```
 OLS ESTIMATION
      44 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    44

 R-SQUARE =    0.0235     R-SQUARE ADJUSTED =  -0.0766
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.5039
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.2264
SUM OF SQUARED ERRORS-SSE=    58.654
MEAN OF DEPENDENT VARIABLE =    1.6436
LOG OF THE LIKELIHOOD FUNCTION = -68.7574

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.6748
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.51473
 SCHWARZ (1978) CRITERION - LOG SC =              0.71748
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.6968
 HANNAN AND QUINN (1979) CRITERION =               1.8038
 RICE (1984) CRITERION =                           1.7251
 SHIBATA (1981) CRITERION =                        1.6360
 SCHWARZ (1978) CRITERION - SC =                   2.0493
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.6732

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        1.4142           4.       0.35356            0.235
ERROR             58.654          39.        1.5039          P-VALUE
TOTAL             60.068          43.        1.3969            0.917

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        120.28           5.        24.056           15.995
ERROR             58.654          39.        1.5039          P-VALUE
TOTAL             178.93          44.        4.0666            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     39 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.10731     0.3931    -0.2730   0.786-0.044    -0.0452    -0.0386
OILSHOCK   0.36694     0.5536     0.6628   0.511 0.106     0.1078     0.0304
INTEREST -0.85921E-02 0.1851E-01 -0.4641   0.645-0.074    -0.0768    -0.0482
INITGDP  -0.96115E-02 0.5286E-01 -0.1818   0.857-0.029    -0.0295    -0.0277
CONSTANT   1.7817     0.4228      4.215    0.000 0.559     0.0000     1.0840
|_stop
```

Developing Countries Without Initial GDP (Unemployment)

```
 OLS ESTIMATION
      44 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    44

 R-SQUARE =    0.0227     R-SQUARE ADJUSTED =  -0.0506
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.4676
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.2114
SUM OF SQUARED ERRORS-SSE=    58.703
MEAN OF DEPENDENT VARIABLE =    1.6436
LOG OF THE LIKELIHOOD FUNCTION = -68.7760

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.6010
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.47012
 SCHWARZ (1978) CRITERION - LOG SC =              0.63232
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.6143
 HANNAN AND QUINN (1979) CRITERION =               1.6994
 RICE (1984) CRITERION =                           1.6306
 SHIBATA (1981) CRITERION =                        1.5767
 SCHWARZ (1978) CRITERION - SC =                   1.8820
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.6002

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        1.3645          3.       0.45484           0.310
ERROR             58.703          40.       1.4676          P-VALUE
TOTAL             60.068          43.       1.3969            0.818

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        120.23          4.        30.057           20.481
ERROR             58.703          40.       1.4676          P-VALUE
TOTAL             178.93          44.       4.0666            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     40 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.10767     0.3883    -0.2773   0.783-0.044    -0.0453    -0.0387
OILSHOCK   0.38830     0.5345     0.7265   0.472 0.114     0.1140     0.0322
INTEREST -0.83471E-02 0.1824E-01 -0.4576   0.650-0.072    -0.0746    -0.0469
CONSTANT   1.7313      0.3151     5.494    0.000 0.656     0.0000     1.0534
|_stop
```

Developing Countries Without Interest (Unemployment)

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 OLS ESTIMATION
      44 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    44

 R-SQUARE =    0.0182      R-SQUARE ADJUSTED =  -0.0555
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.4744
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.2143
SUM OF SQUARED ERRORS-SSE=    58.978
MEAN OF DEPENDENT VARIABLE =    1.6436
LOG OF THE LIKELIHOOD FUNCTION = -68.8786

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.6085
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.47478
 SCHWARZ (1978) CRITERION - LOG SC =              0.63698
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.6219
 HANNAN AND QUINN (1979) CRITERION =               1.7073
 RICE (1984) CRITERION =                           1.6383
 SHIBATA (1981) CRITERION =                        1.5841
 SCHWARZ (1978) CRITERION - SC =                   1.8908
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.6077

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        1.0903          3.       0.36345            0.246
ERROR             58.978          40.       1.4744          P-VALUE
TOTAL             60.068          43.       1.3969            0.863

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        119.95          4.        29.989           20.339
ERROR             58.978          40.       1.4744          P-VALUE
TOTAL             178.93          44.       4.0666            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     40 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.15883     0.3734    -0.4254   0.673-0.067    -0.0668    -0.0571
OILSHOCK   0.35695     0.5478     0.6516   0.518 0.102     0.1048     0.0296
INITGDP  -0.78261E-02 0.5220E-01 -0.1499   0.882-0.024    -0.0241    -0.0225
CONSTANT   1.7258      0.4012     4.301    0.000 0.562     0.0000     1.0500
|_stop
```

Developing Countries Without Initial GDP and Interest (Unemployment)

```
 OLS ESTIMATION
      44 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    44

 R-SQUARE =    0.0176      R-SQUARE ADJUSTED =  -0.0303
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.4393
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1997
SUM OF SQUARED ERRORS-SSE=    59.011
MEAN OF DEPENDENT VARIABLE =    1.6436
LOG OF THE LIKELIHOOD FUNCTION = -68.8909

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.5374
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.42989
 SCHWARZ (1978) CRITERION - LOG SC =              0.55154
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.5446
 HANNAN AND QUINN (1979) CRITERION =               1.6080
 RICE (1984) CRITERION =                           1.5529
 SHIBATA (1981) CRITERION =                        1.5240
 SCHWARZ (1978) CRITERION - SC =                   1.7359
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.5371

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        1.0572          2.       0.52860            0.367
ERROR             59.011         41.        1.4393          P-VALUE
TOTAL             60.068         43.        1.3969            0.695

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        119.92          3.        39.974           27.773
ERROR             59.011         41.        1.4393          P-VALUE
TOTAL             178.93         44.        4.0666            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     41 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.15792     0.3689   -0.4281   0.671-0.067    -0.0665    -0.0568
OILSHOCK   0.37467     0.5285    0.7090   0.482 0.110     0.1100     0.0311
CONSTANT    1.6858     0.2962     5.692   0.000 0.664     0.0000     1.0257
|_stop
```

Mixed Ex. Rate Countries (GDP)

```
OLS ESTIMATION
       52 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:       1,      52

 R-SQUARE =    0.1001     R-SQUARE ADJUSTED =    0.0023
VARIANCE OF THE ESTIMATE-SIGMA**2 =    6.3639
STANDARD ERROR OF THE ESTIMATE-SIGMA =    2.5227
SUM OF SQUARED ERRORS-SSE=    292.74
MEAN OF DEPENDENT VARIABLE =    3.8126
LOG OF THE LIKELIHOOD FUNCTION = -118.714

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       7.0982
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    1.9588
 SCHWARZ (1978) CRITERION - LOG SC =                2.1839
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           7.1940
 HANNAN AND QUINN (1979) CRITERION =               7.7301
 RICE (1984) CRITERION =                           7.3185
 SHIBATA (1981) CRITERION =                        6.9287
 SCHWARZ (1978) CRITERION - SC =                   8.8813
 AKAIKE (1974) INFORMATION CRITERION - AIC =       7.0909

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        32.571          5.        6.5141            1.024
ERROR             292.74         46.        6.3639          P-VALUE
TOTAL             325.31         51.        6.3786            0.415

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        788.45          6.        131.41           20.649
ERROR             292.74         46.        6.3639          P-VALUE
TOTAL             1081.2         52.        20.792            0.000

VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     46 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.54980     0.7528    -0.7303   0.469-0.107    -0.1098    -0.0749
OILSHOCK  -0.58059     0.8362    -0.6944   0.491-0.102    -0.1052    -0.0439
INTEREST   0.53101E-02 0.6827E-02  0.7778   0.441 0.114     0.1121     0.0223
OPNSS     -0.76295E-01 0.5723E-01 -1.333   0.189-0.193    -0.1895    -0.1799
GDPPC80   -0.10801     0.1203    -0.8978   0.374-0.131    -0.1283    -0.0830
CONSTANT   5.1825      0.8527     6.078    0.000 0.667     0.0000     1.3593
|_stop
```

Mixed Ex. Rate Countries Without Initial GDP and GDP P. Capita (GDP)

```
OLS ESTIMATION
       56 OBSERVATIONS     DEPENDENT VARIABLE= GDP
...NOTE..SAMPLE RANGE SET TO:       1,      56

 R-SQUARE =    0.0806     R-SQUARE ADJUSTED =    0.0085
VARIANCE OF THE ESTIMATE-SIGMA**2 =    6.2576
STANDARD ERROR OF THE ESTIMATE-SIGMA =    2.5015
SUM OF SQUARED ERRORS-SSE=    319.14
MEAN OF DEPENDENT VARIABLE =    3.8511
LOG OF THE LIKELIHOOD FUNCTION = -128.188

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       6.8164
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    1.9188
 SCHWARZ (1978) CRITERION - LOG SC =                2.0997
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           6.8711
 HANNAN AND QUINN (1979) CRITERION =               7.3079
 RICE (1984) CRITERION =                           6.9378
 SHIBATA (1981) CRITERION =                        6.7166
 SCHWARZ (1978) CRITERION - SC =                   8.1636
 AKAIKE (1974) INFORMATION CRITERION - AIC =       6.8131

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        27.965           4.        6.9913            1.117
ERROR             319.14          51.        6.2576          P-VALUE
TOTAL             347.10          55.        6.3110            0.359

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        858.51           5.        171.70           27.439
ERROR             319.14          51.        6.2576          P-VALUE
TOTAL             1177.7          56.        21.029            0.000


VARIABLE    ESTIMATED   STANDARD    T-RATIO       PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      51 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -0.57149      0.7137     -0.8008    0.427-0.111    -0.1147    -0.0768
OILSHOCK   -0.66137      0.8113     -0.8151    0.419-0.113    -0.1176    -0.0460
INTEREST    0.54036E-02 0.6726E-02  0.8034    0.425 0.112     0.1105     0.0230
OPNSS      -0.80921E-01 0.5507E-01 -1.469     0.148-0.202    -0.1994    -0.1811
CONSTANT    4.9333      0.7507      6.572     0.000 0.677     0.0000     1.2810
|_stop
```

Mixed Ex. Rate Countries Withou Openness Degree and GDP P. Capita (GDP)

```
 OLS ESTIMATION
      61 OBSERVATIONS      DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    61

 R-SQUARE =    0.1066      R-SQUARE ADJUSTED =    0.0428
VARIANCE OF THE ESTIMATE-SIGMA**2 =    5.8254
STANDARD ERROR OF THE ESTIMATE-SIGMA =    2.4136
SUM OF SQUARED ERRORS-SSE=    326.22
MEAN OF DEPENDENT VARIABLE =    3.7915
LOG OF THE LIKELIHOOD FUNCTION = -137.695

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       6.3029
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    1.8406
 SCHWARZ (1978) CRITERION - LOG SC =                2.0137
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           6.3455
 HANNAN AND QUINN (1979) CRITERION =               6.7426
 RICE (1984) CRITERION =                           6.3965
 SHIBATA (1981) CRITERION =                        6.2246
 SCHWARZ (1978) CRITERION - SC =                   7.4907
 AKAIKE (1974) INFORMATION CRITERION - AIC =       6.3005

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         38.920          4.        9.7301            1.670
ERROR              326.22         56.        5.8254          P-VALUE
TOTAL              365.14         60.        6.0857            0.170

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         915.83          5.        183.17           31.443
ERROR              326.22         56.        5.8254          P-VALUE
TOTAL              1242.1         61.        20.362            0.000

VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     56 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.64315     0.6620    -0.9716   0.335-0.129    -0.1313    -0.0890
OILSHOCK   -1.0466     0.7716     -1.356   0.180-0.178    -0.1842    -0.0679
INTEREST  0.33680E-02 0.6492E-02  0.5188   0.606 0.069     0.0673     0.0143
INITGDP   -0.13123    0.6885E-01  -1.906   0.062-0.247    -0.2497    -0.1425
CONSTANT   4.8723     0.6319       7.710   0.000 0.718     0.0000     1.2851
|_stop
```

Mixed Ex. Rate Countries Without Initial GDP (GDP)

```
 OLS ESTIMATION
      61 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    61

 R-SQUARE =    0.0486     R-SQUARE ADJUSTED =  -0.0014
VARIANCE OF THE ESTIMATE-SIGMA**2 =    6.0944
STANDARD ERROR OF THE ESTIMATE-SIGMA =    2.4687
SUM OF SQUARED ERRORS-SSE=    347.38
MEAN OF DEPENDENT VARIABLE =    3.7915
LOG OF THE LIKELIHOOD FUNCTION = -139.612

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       6.4941
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    1.8707
 SCHWARZ (1978) CRITERION - LOG SC =                2.0091
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =            6.5221
 HANNAN AND QUINN (1979) CRITERION =                6.8548
 RICE (1984) CRITERION =                            6.5544
 SHIBATA (1981) CRITERION =                         6.4417
 SCHWARZ (1978) CRITERION - SC =                    7.4567
 AKAIKE (1974) INFORMATION CRITERION - AIC =        6.4928

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        17.759           3.        5.9196            0.971
ERROR             347.38          57.        6.0944          P-VALUE
TOTAL             365.14          60.        6.0857            0.413

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        894.67           4.        223.67           36.700
ERROR             347.38          57.        6.0944          P-VALUE
TOTAL             1242.1          61.        20.362            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      57 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.79851     0.6719    -1.188    0.240-0.155    -0.1630    -0.1105
OILSHOCK  -0.79893     0.7779    -1.027    0.309-0.135    -0.1406    -0.0518
INTEREST   0.47322E-02 0.6600E-02 0.7170    0.476 0.095     0.0946     0.0201
CONSTANT   4.3307      0.5773     7.502    0.000 0.705     0.0000     1.1422
|_stop
```

Mixed Ex. Rate Countries Without Interest (GDP)

```
 OLS ESTIMATION
      61 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    61

 R-SQUARE =    0.1023     R-SQUARE ADJUSTED =    0.0550
VARIANCE OF THE ESTIMATE-SIGMA**2 =    5.7507
STANDARD ERROR OF THE ESTIMATE-SIGMA =    2.3981
SUM OF SQUARED ERRORS-SSE=    327.79
MEAN OF DEPENDENT VARIABLE =    3.7915
LOG OF THE LIKELIHOOD FUNCTION = -137.841

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       6.1278
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    1.8126
 SCHWARZ (1978) CRITERION - LOG SC =                1.9511
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =            6.1542
 HANNAN AND QUINN (1979) CRITERION =                6.4682
 RICE (1984) CRITERION =                            6.1847
 SHIBATA (1981) CRITERION =                         6.0783
 SCHWARZ (1978) CRITERION - SC =                    7.0362
 AKAIKE (1974) INFORMATION CRITERION - AIC =        6.1266

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        37.353           3.        12.451            2.165
ERROR             327.79          57.        5.7507          P-VALUE
TOTAL             365.14          60.        6.0857            0.102

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        914.26           4.        228.57           39.746
ERROR             327.79          57.        5.7507          P-VALUE
TOTAL             1242.1          61.        20.362            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      57 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.69532     0.6501     -1.070    0.289-0.140    -0.1419    -0.0962
OILSHOCK  -1.1159      0.7550     -1.478    0.145-0.192    -0.1964    -0.0724
INITGDP   -0.13517     0.6799E-01 -1.988    0.052-0.255    -0.2572    -0.1468
CONSTANT   4.9871      0.5881      8.480    0.000 0.747     0.0000     1.3153
|_stop
```

Mixed Ex. Rate Countries Without Initial GDP and Interest (GDP)

```
 OLS ESTIMATION
      61 OBSERVATIONS     DEPENDENT VARIABLE = GDPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    61

 R-SQUARE =    0.0401     R-SQUARE ADJUSTED =    0.0070
VARIANCE OF THE ESTIMATE-SIGMA**2 =    6.0434
STANDARD ERROR OF THE ESTIMATE-SIGMA =    2.4583
SUM OF SQUARED ERRORS-SSE=    350.52
MEAN OF DEPENDENT VARIABLE =    3.7915
LOG OF THE LIKELIHOOD FUNCTION = -139.885

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       6.3406
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =    1.8469
 SCHWARZ (1978) CRITERION - LOG SC =                1.9507
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =            6.3560
 HANNAN AND QUINN (1979) CRITERION =                6.6034
 RICE (1984) CRITERION =                            6.3730
 SHIBATA (1981) CRITERION =                         6.3114
 SCHWARZ (1978) CRITERION - SC =                    7.0337
 AKAIKE (1974) INFORMATION CRITERION - AIC =        6.3401

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        14.626           2.        7.3128            1.210
ERROR             350.52          58.        6.0434          P-VALUE
TOTAL             365.14          60.        6.0857            0.306

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        891.54           3.        297.18           49.174
ERROR             350.52          58.        6.0434          P-VALUE
TOTAL             1242.1          61.        20.362            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     58 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.87933     0.6596    -1.333    0.188-0.172    -0.1795    -0.1217
OILSHOCK -0.88686     0.7650    -1.159    0.251-0.150    -0.1561    -0.0575
CONSTANT   4.4709     0.5409     8.265    0.000 0.735     0.0000     1.1792
|_stop
```

Mixed Ex. Rate Countries (Unemployment)

```
OLS ESTIMATION
       20 OBSERVATIONS     DEPENDENT VARIABLE= UMPL
...NOTE..SAMPLE RANGE SET TO:       1,      20

 R-SQUARE =    0.4205     R-SQUARE ADJUSTED =    0.2136
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.1731
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.0831
SUM OF SQUARED ERRORS-SSE=    16.424
MEAN OF DEPENDENT VARIABLE =    1.4823
LOG OF THE LIKELIHOOD FUNCTION = -26.4086

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.5250
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.40298
 SCHWARZ (1978) CRITERION - LOG SC =              0.70170
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.6759
 HANNAN AND QUINN (1979) CRITERION =               1.5861
 RICE (1984) CRITERION =                           2.0529
 SHIBATA (1981) CRITERION =                        1.3139
 SCHWARZ (1978) CRITERION - SC =                   2.0172
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.4963

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        11.919           5.        2.3838            2.032
ERROR             16.424          14.        1.1731          P-VALUE
TOTAL             28.343          19.        1.4917            0.136

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        55.861           6.        9.3102            7.936
ERROR             16.424          14.        1.1731          P-VALUE
TOTAL             72.285          20.        3.6142            0.001


VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR      14 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.34514     0.6284    -0.5492     0.592-0.145    -0.1450    -0.1164
OILSHOCK  -0.81306     0.7839     -1.037     0.317-0.267    -0.2957    -0.1371
INTEREST   0.17804     0.7156E-01  2.488     0.026 0.554     0.5671     0.6404
OPNSS      0.23662E-02 0.3119E-01 0.7587E-01 0.941 0.020     0.0160     0.0173
GDPPC80    0.70834E-01 0.9047E-01 0.7829     0.447 0.205     0.1756     0.2115
CONSTANT   0.56970     0.8885     0.6412     0.532 0.169     0.0000     0.3843
|_stop
```

Mixed Ex. Rate Countries Without Initial GDP and GDP P. Capita (Unemployment)

```
OLS ESTIMATION
       20 OBSERVATIONS     DEPENDENT VARIABLE= UN
...NOTE..SAMPLE RANGE SET TO:       1,      20

 R-SQUARE =    0.3952     R-SQUARE ADJUSTED =    0.2339
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.1428
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.0690
SUM OF SQUARED ERRORS-SSE=    17.143
MEAN OF DEPENDENT VARIABLE =    1.4823
LOG OF THE LIKELIHOOD FUNCTION = -26.8371

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.4286
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.34584
 SCHWARZ (1978) CRITERION - LOG SC =              0.59477
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.5238
 HANNAN AND QUINN (1979) CRITERION =               1.4835
 RICE (1984) CRITERION =                           1.7143
 SHIBATA (1981) CRITERION =                        1.2857
 SCHWARZ (1978) CRITERION - SC =                   1.8126
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.4132

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION        11.200           4.        2.8000            2.450
ERROR             17.143          15.        1.1428          P-VALUE
TOTAL             28.343          19.        1.4917            0.091

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION        55.142           5.        11.028            9.650
ERROR             17.143          15.        1.1428          P-VALUE
TOTAL             72.285          20.        3.6142            0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     15 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.24451     0.6072    -0.4027    0.693-0.103    -0.1027    -0.0825
OILSHOCK  -0.60675     0.7287    -0.8326    0.418-0.210    -0.2207    -0.1023
INTEREST   0.17096     0.7007E-01  2.440    0.028 0.533     0.5446     0.6150
OPNSS      0.33450E-02 0.3076E-01  0.1087   0.915 0.028     0.0226     0.0245
CONSTANT   0.80838     0.8237      0.9814   0.342 0.246     0.0000     0.5454
|_stop
```

Mixed Ex. Rate Countries Without Openness Degree and GDP P. Capita (Unemployment)

```
 OLS ESTIMATION
      23 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.2772      R-SQUARE ADJUSTED =    0.1165
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.1529
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.0737
SUM OF SQUARED ERRORS-SSE=    20.752
MEAN OF DEPENDENT VARIABLE =    1.5117
LOG OF THE LIKELIHOOD FUNCTION = -31.4528

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.4035
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.33193
 SCHWARZ (1978) CRITERION - LOG SC =              0.57878
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          1.4731
 HANNAN AND QUINN (1979) CRITERION =              1.4829
 RICE (1984) CRITERION =                          1.5963
 SHIBATA (1981) CRITERION =                       1.2945
 SCHWARZ (1978) CRITERION - SC =                  1.7839
 AKAIKE (1974) INFORMATION CRITERION - AIC =      1.3937

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF            MS                F
REGRESSION         7.9571          4.        1.9893            1.725
ERROR              20.752         18.        1.1529          P-VALUE
TOTAL              28.709         22.        1.3050            0.188

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF            MS                F
REGRESSION         60.517          5.        12.103           10.498
ERROR              20.752         18.        1.1529          P-VALUE
TOTAL              81.269         23.        3.5335            0.000


VARIABLE    ESTIMATED   STANDARD    T-RATIO       PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      18 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -0.51995     0.5338     -0.9740    0.343-0.224     -0.2325    -0.1795
OILSHOCK    -1.2029     0.5731      -2.099    0.050-0.443     -0.4728    -0.2076
INTEREST   0.68120E-01 0.3580E-01    1.903    0.073 0.409      0.3934     0.2973
INITGDP   -0.71625E-02 0.4702E-01 -0.1523    0.881-0.036     -0.0334    -0.0310
CONSTANT     1.6942     0.5093      3.327    0.004 0.617      0.0000     1.1207
|_stop
```

Mixed Ex. Rate Countries Without Initial GDP (Unemployment)

```
 OLS ESTIMATION
      23 OBSERVATIONS     DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.2762     R-SQUARE ADJUSTED =    0.1620
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.0936
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.0458
SUM OF SQUARED ERRORS-SSE=    20.779
MEAN OF DEPENDENT VARIABLE =    1.5117
LOG OF THE LIKELIHOOD FUNCTION = -31.4676

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.2838
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.24626
 SCHWARZ (1978) CRITERION - LOG SC =              0.44374
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.3239
 HANNAN AND QUINN (1979) CRITERION =               1.3444
 RICE (1984) CRITERION =                           1.3852
 SHIBATA (1981) CRITERION =                        1.2177
 SCHWARZ (1978) CRITERION - SC =                   1.5585
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.2792

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF          MS              F
REGRESSION         7.9304        3.        2.6435           2.417
ERROR             20.779        19.        1.0936         P-VALUE
TOTAL             28.709        22.        1.3050           0.098

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF          MS              F
REGRESSION        60.491         4.       15.123           13.828
ERROR             20.779        19.        1.0936         P-VALUE
TOTAL             81.269        23.        3.5335           0.000


VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     19 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.54834     0.4872    -1.125    0.274-0.250    -0.2462    -0.1893
OILSHOCK  -1.2001      0.5579    -2.151    0.045-0.443    -0.4717    -0.2071
INTEREST  0.68887E-01 0.3452E-01  1.995    0.061 0.416     0.3978     0.3006
CONSTANT   1.6564      0.4331     3.825    0.001 0.660     0.0000     1.0957
|_stop
```

Mixed Ex. Rate Countries Without Interest (Unemployment)

```
 OLS ESTIMATION
      23 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.1318      R-SQUARE ADJUSTED =  -0.0053
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.3119
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1454
SUM OF SQUARED ERRORS-SSE=    24.926
MEAN OF DEPENDENT VARIABLE =    1.5117
LOG OF THE LIKELIHOOD FUNCTION = -33.5602

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.5400
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.42822
 SCHWARZ (1978) CRITERION - LOG SC =              0.62570
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =           1.5881
 HANNAN AND QUINN (1979) CRITERION =               1.6127
 RICE (1984) CRITERION =                           1.6617
 SHIBATA (1981) CRITERION =                        1.4607
 SCHWARZ (1978) CRITERION - SC =                   1.8696
 AKAIKE (1974) INFORMATION CRITERION - AIC =       1.5345

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF          MS              F
REGRESSION         3.7836        3.        1.2612          0.961
ERROR              24.926       19.        1.3119        P-VALUE
TOTAL              28.709       22.        1.3050          0.431

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF          MS              F
REGRESSION         56.344        4.        14.086         10.737
ERROR              24.926       19.        1.3119        P-VALUE
TOTAL              81.269       23.        3.5335          0.000


VARIABLE    ESTIMATED   STANDARD    T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      19 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE     -0.32700      0.5591     -0.5849   0.566-0.133    -0.1462     -0.1129
OILSHOCK    -1.0039      0.6011      -1.670   0.111-0.358    -0.3946     -0.1732
INITGDP  -0.19752E-01 0.4966E-01  -0.3977   0.695-0.091    -0.0922     -0.0854
CONSTANT     2.0734      0.4999       4.147   0.001 0.689     0.0000      1.3715
|_stop
```

Mixed Ex. Rate Countries Without Initial GDP and Interest (Unemployment)

```
 OLS ESTIMATION
      23 OBSERVATIONS      DEPENDENT VARIABLE = UNEMPSTD
...NOTE..SAMPLE RANGE SET TO:     1,    23

 R-SQUARE =    0.1246      R-SQUARE ADJUSTED =    0.0370
VARIANCE OF THE ESTIMATE-SIGMA**2 =    1.2567
STANDARD ERROR OF THE ESTIMATE-SIGMA =    1.1210
SUM OF SQUARED ERRORS-SSE=    25.133
MEAN OF DEPENDENT VARIABLE =    1.5117
LOG OF THE LIKELIHOOD FUNCTION = -33.6555

MODEL SELECTION TESTS - SEE JUDGE ET AL. (1985,P.242)
 AKAIKE (1969) FINAL PREDICTION ERROR - FPE =       1.4206
    (FPE IS ALSO KNOWN AS AMEMIYA PREDICTION CRITERION - PC)
 AKAIKE (1973) INFORMATION CRITERION - LOG AIC =  0.34956
 SCHWARZ (1978) CRITERION - LOG SC =              0.49767
MODEL SELECTION TESTS - SEE RAMANATHAN (1992,P.167)
 CRAVEN-WAHBA (1979)
    GENERALIZED CROSS VALIDATION - GCV =          1.4451
 HANNAN AND QUINN (1979) CRITERION =              1.4723
 RICE (1984) CRITERION =                          1.4784
 SHIBATA (1981) CRITERION =                       1.3778
 SCHWARZ (1978) CRITERION - SC =                  1.6449
 AKAIKE (1974) INFORMATION CRITERION - AIC =      1.4184

                    ANALYSIS OF VARIANCE - FROM MEAN
                      SS          DF          MS              F
REGRESSION        3.5761          2.      1.7880          1.423
ERROR             25.133         20.      1.2567        P-VALUE
TOTAL             28.709         22.      1.3050          0.264

                    ANALYSIS OF VARIANCE - FROM ZERO
                      SS          DF          MS              F
REGRESSION        56.136          3.      18.712         14.890
ERROR             25.133         20.      1.2567        P-VALUE
TOTAL             81.269         23.      3.5335          0.000

VARIABLE   ESTIMATED  STANDARD   T-RATIO      PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     20 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
EXRATE    -0.40076     0.5162   -0.7763   0.447-0.171    -0.1792    -0.1383
OILSHOCK  -0.98976     0.5872    -1.685   0.107-0.353    -0.3890    -0.1708
CONSTANT   1.9790      0.4307     4.595   0.000 0.717     0.0000     1.3091
|_stop
```