TRANSMISSION MECHANISM AND PUBLIC POLICY EFFECTIVENESS BETWEEN THE U.S. AND THE EU ECONOMIES

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ABSTRACT
This paper deals with the transmission mechanism between the U.S. and the EMU economies. It considers an interdependence model between the two economies by looking at the aggregate supplies, aggregate demands, and their money markets to assess this relationship. Public policy effectiveness is also examined to measure their outcome. The empirical results reveal that the degree of interdependence between the U.S. and the Euro-zone country-members is high; the public policy is more effective in the U.S. and less in the EU. But, this union in Europe, this passion for the uncontrolled openness of the economies, and the worst of all, this suspicious globalization reserve many surprises to our repressed politicians and to our naïve citizens, who vote for them or worse, they have just imposed their confinements undemocratically (without referenda) to the “poor” people.

INTRODUCTION
The objective of this analysis is to determine how Macroeconomic shocks and changes in foreign income and other macro-variables affect domestic equilibrium and to test the effectiveness of public policies. In an interdependent world, as it is for the U.S. and the EU economies, disturbances affecting production (aggregate supply) and income (aggregate demand) in one country can have significant effects on other countries (EU). An economy can be subject to major dislocations associated with economic events (shocks) abroad because of their openness, interdependence, lack of self-sufficiency, factors and markets liberalization, integration, and pressure towards globalization. For instance, by reducing EU demand for U.S. goods, hence reduction in U.S. exports, due to a recession and unemployment abroad, can be spilled over or be transmitted into recession and unemployment in the U.S. economy, as (Rivera-Batiz and Rivera-Batiz, 1985; Dornbusch, 1980; Kallianiotis and Petsas, 2006a and b) say, or transmission of Macroeconomic shocks, due to monetary interdependence, as Dibooglu (2000) confirms.

Transmissions of Macroeconomic shocks and spillover effects point to the global nature of income determination in an interdependence world and especially today with the internationalization of our economies. Suppose a monetary or fiscal expansion results in a U.S. boom. As income grows, U.S. imports will swell because some of the additional spending falls into purchases of foreign goods and services, especially with this high income elasticity of the demand for imports that Americans have. Since higher domestic imports correspond to an increase in European exports to the U.S., the U.S. income expansion generates an export-led production and income expansion abroad. In other words, the U.S. boom is transmitted to Europe as Americans spend more on European goods.

On the other hand, an induced expansion of European income can be expected to increase European spending on U.S. goods, feeding back into the U.S. economy in the form of increased exports to Europe and therefore increased U.S. production and income. The process involves a repercussion effect of the initial U.S. autonomous spending expansion on the U.S. economy. This repercussion effect is positive in the sense that it serves to further expand U.S. income. In interdependent economies, foreign income and employment can be affected by domestic disturbances. Also, a supply shock (like, an increase in the price of oil) can affect negatively production, income, and positively prices domestically and be spread abroad.

Policy-makers of a country must concentrate in the national economy (the social welfare of their citizens) by taking into consideration the exogenous events, like changes in oil prices, world interest rates, imported inflation, imported unemployment, payment crises, debts obligation, foreign unfair competition, etc. In a domestic decision-making process, the international repercussions of national decisions should not be neglected. Coordination policies are necessary among all economies and countries must match domestic and foreign instruments and objectives through cooperation for the benefits of the nation. Public policies have become less effective, due to this openness of the world and the huge interdependence among nations. A major concern for the western economies is the tremendous increase of borrowing. Consumer debt soars and causes many financial and social problems to the citizens. Their entire monthly income goes to pay off credit-cards and loans, which will slow economic
growth in the future (households income is becoming banks’ wealth). American men in their 30s are worse off than their fathers’ generation, a reversal from just a decade ago, according to a new study by John Morton and Isabel Sawhill. Europe must be worse with all these illegal immigrants, which have pulled down median wages and with the high cost of living (even though that authorities present low inflation), the real wages have declined for many workers.

This theoretical, descriptive, and empirical analysis presents a two-country (the U.S.A. and the EU, actually, the Euro-zone), multi-equation static open economy macroeconomic model. It studies the alternative point-in-time or partial equilibrium values for a set of eight endogenous variables for each country associated with alternative possible settings for the exogenous ones (four policy instruments and two shock variables) at the particular point in time under consideration. The distinguishing feature of the static analysis is that it is capable of determining alternative values of the endogenous variables, taking as given only the values of the exogenous variables at that point in time, which may include values of endogenous and exogenous variables that were determined in the past and are thus given or predetermined at the present moment. (Sargent, 1979, pp. 1-5). The model is in static equilibrium at a particular moment, if the endogenous variables take values, which assure that the structural equations are all satisfied. To answer the typical question addressed in statics, the reduced form equations corresponding to the system might be found, but here, the objective is to determine the transmission mechanism and the effectiveness of public policy and not the identification problem of the model. These reduced form equations are sets of equations, each expressing one endogenous variable as a function of only the exogenous ones. (Pindyck and Rubinfeld, 1981, pp. 319-352; Kallianiotis and Petsas, 2006c).

We try to be very careful with the assumptions, which are used, here. The most of the models today are using heroic assumptions, so their results are unrealistic and untrue. Individuals gather and process, as many as they can, from the available information, but this information is not complete and, of course, is not correct. Thus, people cannot have rational expectations, due to inferior (controlled) information and to high opportunity cost of acquiring it. Also, the formation of our expectations is wrong because our reasoning is incorrect. The human reason can be correct only when we will reach perfection; until that time, it would be much better, if we will not use at all our “rational expectations” (or use them carefully and moderately) to affect the world and forecast its future.

A two-country, multi-equation static model (Aggregate Supply, Aggregate Demand, and Money Market equilibrium) is used here to provide a representation of the real world between USA and EU. Variables can interact with each other across equations and through time, so the model can describe and explain the behavior of these economies. The variables determined by the model (endogenous) are: Y, E, P, X, u, S, C, I; while the variables given from outside (exogenous) are, (1) the policy ones: G, T, M, i and (2) the supply shock ones: P_{oil} and w, for each country. Our model consists of 6 structural equations in 8 endogenous variables and 6 exogenous variables. We assume that future expectations are not known and that people have not perfect foresight. The exogenous variables are assumed to be right-continuous functions of time, and furthermore are assumed to possess right-hand time derivatives of at least first and some time higher order at all points in time. Also, we assume imperfect capital mobility with dirty floating exchange rates, gradual adjustment of prices, and sluggish output response to fiscal and monetary shocks.

**A PARTIAL EQUILIBRIUM OPEN ECONOMY MACROECONOMIC INTERDEPENDENCE MODEL**

The model is a partial equilibrium open economy Macroeconomic one, which comprises the aggregate supplies, demands, and money markets in both countries. Its structure contains foreign variables that we can test the interdependence between the economies and policy variables by which the public policy effectiveness will be examined. The theoretical model is taking into consideration the works by (Bryant, Henderson, Holtham, Hooper, and Symansky, 1988; Dornbusch, 1980; Rivera-Batiz and Rivera-Batiz, 1985; Sargent, 1979; Kallianiotis, 1991, 1996 a and b, 1998, 2000, 2001, and 2004; Kallianiotis and Boutchev, 1996; Kallianiotis and Petsas, 2006a, b, and c). The general two-country model is as follows:

**The Aggregate Supply (AS)**

For the domestic (U.S.) economy and for the EU, the AS can be written as follows,

\[
Y = F[P, w, T, \frac{EP^*}{P}, (i - \pi) - (i^* - \pi^*), P_{oil}, u, E]
\]

\[
F_p > 0, F_w < 0, F_T < 0, F_{EP^*} < 0, \frac{F_P}{P} > 0, F_{(i - \pi) - (i^* - \pi^*)} < 0, F_{P_{oil}} < 0, F_u < 0, F_E < 0
\] (1)

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\[ Y^* = F^*[P^*, w^*, T^*, \frac{E^* P}{P}, (i^* - \pi^*) - (i^* - \pi^*)], \]
\[ F^*_P > 0, F^*_w < 0, F^*_T < 0, F^*_E > 0, \]
\[ F^*_{(i^* - \pi^*) - (i^* - \pi^*)} > 0, F^*_P > 0, F^*_u < 0, F^*_E > 0 \tag{2} \]

where, \( Y \) = real income (output), \( P \) = the price level, \( w \) = wage rate, \( T \) = taxes, \( \frac{E^* P}{P} = TOT \) = the terms of trade (the real exchange rate), \( i \) = nominal short-term rate of interest, \( \pi \) = inflation rate, \( E \) = exchange rate ($/euro), \( P_{oil} \) = price of oil, \( u \) = unemployment rate, \( P_{oil} = \frac{P_{oil}}{E} \), and an asterisk (*) denotes the foreign country.

Solving eq. (1) for \( P \), we receive the AS function, which is positively sloped in \( P-Y \) space,
\[ P = AS[Y, w, T, \frac{E^* P}{P}, (i^* - \pi^*) - (i^* - \pi^*)], \tag{3} \]
and for the foreign country, from eq. (2), we get the \( AS^* \) curve.
\[ P^* = AS^*[Y^*, w^*, T^*, \frac{E^* P}{P}, (i^* - \pi^*) - (i^* - \pi^*)], \tag{4} \]

The Aggregate Demand (AD)

The U.S. aggregate demand can be presented as follows,
\[ Y = D[P, \pi, T, \frac{E^* P}{P}, M, C, I, G, X, X^*, Y^*], \]
\[ (i^* - \pi^*) - (i^* - \pi^*), S, E] \tag{5} \]
\[ D^*_P < 0, D^*_C < 0, D^*_T < 0, D^*_E > 0, D^*_M > 0, \]
\[ D^*_C > 0, D^*_I > 0, D^*_G > 0, D^*_X > 0, D^*_X^* < 0, \]
\[ D^*_T > 0, D^*_L > 0, D^*_D < 0, D^*_S < 0, D^*_E > 0 \]

and for the foreign country,
\[ Y^* = D^*[P^*, \pi^*, T^*, \frac{E^* P}{P}, M^*, C^*, I^*, G^*], \]
\[ X, X^*, Y^*, (i^* - \pi^*) - (i^* - \pi^*), S^*, E] \tag{6} \]
\[ D^*_P < 0, D^*_C < 0, D^*_T < 0, D^*_E > 0, \]
\[ D^*_M > 0, D^*_C^* > 0, D^*_T^* > 0, D^*_E^* > 0, \]
\[ D^*_C^* < 0, D^*_T^* > 0, D^*_E^* > 0, D^*_L > 0, D^*_S < 0, D^*_E < 0 \]

where, \( M \) = the money supply, \( C \) = private consumption, \( I \) = private investment, \( G \) = government spending, \( X \) = exports, \( S \) = saving, and an asterisk (*) denotes the foreign country.

By solving eqs. (5) and (6) for \( P \) and \( P^* \), we determined the \( AD \) and \( AD^* \) function, which are negatively sloped in \( P-Y \) space.
\[ P = AD[Y, \pi, T, \frac{E^* P}{P}, M, C, I, G, X, X^*, Y^*], \tag{7} \]
\[ (i^* - \pi^*) - (i^* - \pi^*), S, E] \]
\[ P^* = AD^*[Y^*, \pi^*, T^*, \frac{E^* P}{P}, M^*, C^*, I^*, G^*], \tag{8} \]
\[ X^*, X^*, Y^*, (i^* - \pi^*) - (i^* - \pi^*), S^*, E] \]

The Money Market equilibrium (LM)

The domestic money market equilibrium shows that real money supply is equal to real money demand and equal to the stock of money,
\[ \frac{M}{P} = L(Y, i, E) \]
\[ L^*_Y > 0, L^*_i < 0, L^*_E < 0 \tag{9} \]
and
\[ \frac{M^*}{P^*} = L^*[Y^*, i^*, E] \]
\[ L^*_Y^* > 0, L^*_i^* < 0, L^*_E^* > 0 \tag{10} \]

where \( M \) = the money supply.

Eq. (9) can be solved for \( i \) and the LM curve is provided:
\[ i = LM\ (Y, M, P, E) \]  
\[ (11) \]

For the foreign country the \( LM^* \) locus is:
\[ i^* = LM^* (Y^*, M^*, P^*, E) \]  
\[ (12) \]

In order to solve the system, we can utilize (Keynes', 1936; Hicks', 1937) apparatus. This simply entails adopting the strategy of collapsing the equations of the model into a system of two equations, the AD and AS functions and one the money market (LM) for each country. The ultimate objective will be to estimate the coefficients of these variables and to find the size of these effects (interdependence and repercussion) between each of the two countries (United States with European Union). Also, to determine the size of the effects of the external shocks on our endogenous variables and the effects of the policy variables (instruments) on the variables in question.

In other words, we want to examine the effects of a supply shock, demand shock, and money supply shocks on output and prices. Also, capital flow shocks will be important; especially lately, due to the Iraqi war many Muslims are investing their funds in EU instead of the U.S. because they are afraid that U.S.A. might freeze their funds in the future. Likewise, some sly speculators are investing currently in South-East Europe trying to falsify the seven thousand years old civilization of the region. We will attempt to identify the effects of the different shocks and the public policy instruments within a structural VAR framework and to see their impulse responses on the target (objective) variables.

**TEST OF STATIONARITY AND COINTEGRATION OF THE VARIABLES**

The unit root issue is important in the context of the standard regression model. The assumptions of the classical model necessitate that dependent and independent variables must be stationary and the error terms must have the following properties (assumptions): \( E(\epsilon_t) = 0 \), \( E(\epsilon_t^2) = \sigma^2 \), and \( E(\epsilon_t, \epsilon_{t-1}) = 0 \). In the presence of nonstationary variables, there might be a spurious regression. In this case, the regression equation must be estimated in first differences. If the nonstationary variables are integrated of the same order and the residual is stationary, the two series are cointegrated. We test the variables in our regressions for stationarity by using a (Dickey-Fuller, 1979; Phillips-Perron, 1988) test and for cointegration by using Johansen (1991, 1995) methodology.

The finding that most of the macro-variables contain a unit root (Table 4) has spurred the development of the theory of non-stationary time series analysis. Engle and Granger (1987) pointed out that a linear combination of two or more non-stationary series may be stationary. If such a stationary linear combination exits, the non-stationary time series are said to be cointegrated. This stationary linear combination is called the cointegrating equation and may be interpreted as a long-run equilibrium relationship among the variables.

Consider the logarithmic linear equation of the Money Market equilibrium, eq. (9), which can be written as,

\[ m_t - p_t = \alpha_0 + \alpha_1 y_t + \alpha_2 i_t + \alpha_3 e_t + \epsilon_t \]  
\[ (9') \]

where, \( m_t - p_t \) is the real quantity of money balances, \( y_t \) is the real income, \( i_t \) is the interest rate (opportunity cost of holding money), \( e_t \) is the exchange rate ($/euro), \( \epsilon_t \) is the stationary disturbance term, and \( \alpha_j \) are parameters to be estimated. All the variables, except the interest rate, are expressed in natural logarithms (\( m_t = \ln M_t \)); lower case letters are the \( \ln \) of the capital ones.
For the theory to make any sense at all, any deviation in the demand for money must necessarily be temporary in nature. If $\varepsilon_t$ has a stochastic trend, the errors in the model will be cumulative so that deviations from money market equilibrium will not be eliminated. Hence, a key assumption of the theory is that the $\{\varepsilon_t\}$ sequence is stationary. The problem confronting, here, is that $y_{tpm}$ and $t_{pe}$ are nonstationary $I(1)$ variables, except $i_t$, which is stationary $I(0)$. As such, these nonstationary variables can meander without any tendency to return to a long-run level. However, the theory expressed in eq. (9) insists that there exists a linear combination of these nonstationary variables that is stationary.

Solving eq. (9') for the error term, we can rewrite it as,

$$e_t = m_t - p_t - \alpha_0 - \alpha_1 y_t - \alpha_2 i_t - \alpha_3 \varepsilon_t \quad (9'')$$

Since, $\{\varepsilon_t\}$ must be stationary, it follows that the linear combination of integrated variables given by the right-hand side of eq. (9'') must also be stationary. Thus, the theory necessitates that the time paths of the four nonstationary variables $\{m_t\}, \{p_t\}, \{y_t\},$ and $\{\varepsilon_t\}$ be linked. The aggregate supply and aggregate demand functions and the money market equilibrium, here, are examples of stationary combinations of mostly nonstationary variables. Of course, within any equilibrium framework, the deviations from equilibrium must be temporary. The purpose of these cointegration tests is to determine whether our group of nonstationary series are cointegrated or not. The results of the cointegration test outputs for our multi-variables models by using a Johansen and Juselius (1990) method are presented in Tables 5, 6, 7, and 8.

In addition, a Vector Autoregression (VAR) is used, for the above forecasting system of the interdependent variables between the U.S. and EU and the policy variables, to analyze the dynamic impact of random disturbances on the system of variables. The VAR approach sidesteps the need for structural modeling by treating every endogenous variable in the system $(Y, Y^*, P, P^*, \text{ etc.})$ as a function of the lagged values of all of the endogenous variables in the system.

For example, suppose that real income ($y_t$) and prices ($p_t$) are jointly determined by a VAR and let a policy variable ($i_t$) be the exogenous variable,
Empirical Results

We started analyzing the U.S. and EU data by looking and comparing their mean values, their natural logarithms, their growth, and their standard deviations (Table 1). The growth of GDP is higher in the U.S., the exchange rate between dollar and euro is very risky (σ_Y = 31.23%), the price level (inflation) is higher in the U.S. (which makes the EU data suspicious); the growth of exports and imports is higher in the EU, but their standard deviations are very high, too. The growth of wages is higher in the U.S.; the unemployment rate is much higher in EU (π_EU = 8.6%, π_US = 5.0%); the saving rate is very small (δ ≅ 0%) in the U.S.; consumption is growing more in the U.S. and investment more in the EU; the growth of government spending is higher in the U.S., due to the military expenditures; money is growing more in the U.S.; the interest rates are almost the same in both entities (except, i_FF = 5.25% and i_OND = 4%).

Next, we looked at the correlation coefficients (ρ_{X,Y'}) between the U.S. and the EU macro-variables (Tables 2a and 2b). The ρ_{X,Y'} is higher than 0.5 between Y' and Y, Y' and P, P', Y' and M, Y' and u, Y' and C, Y' and M2, between P' and Y, P' and P, P' and M, P' and w, P' and u, P' and C, P' and G, P' and M2. Interest rates have a negative correlation with most of the variables. These reveal a high interdependence between the two economies, the U.S. and the EU one (i.e., ρ_{Y,Y'} = 0.98). At the same time, we test the causality between the variables in the two economies (Tables 3a and 3b). The U.S. Y causes Y', E', P', X', M', C', I', G', and M2'. The exchange rate E causes I'; X and M cause X', M', and I'. Unemployment u causes E, u', I', i_OND. U.S. consumption (C) causes Y', E, P', X', M', and I', and M2'. The policy variables (G, T, M, and i instruments) cause Y', E, P', X', M', u', G', M2', M, and i_OND.

Then, the next table reported, here, is Table 4, which presents an Augmented Dickey-Fuller and Phillips-Perron unit root test for the variables of our model. The only stationary series are: w, u, i_FF, and i_s for the U.S. and m', x', and m' for the EU. The rest of the variables contain a unit root, they are integrated of order one [I(1)]. Tables 5, 6, 7, and 8 give the results of the cointegration tests of eqs. (1), (2), (9), and (10). Trace tests and maximum eigenvalue ones indicate that our equations are cointegrating (stationary).

Finally, Tables 9, 10, and 11 show the least squares estimations of the aggregate supplies, aggregate demands, and money market equilibria in the U.S. and EU. The coefficients of y and y' are highly significant and reveal the interdependence between the two economies. Table 11 discloses the significant effects not only of the domestic variables on money supply, but of the exchange rate, too. Table 12 shows the Vector Autoregression Estimates of the five (5) public policy objective variables (q, p, u, i_{L-T}, ca) and the effectiveness of policy instruments (i_FF, M', T, G) on the ultimate objective variables. Real income (q) is affected negatively by i_FF and positively by M2, T, and G. Prices (CPI) are affected positively by i_FF and nothing else. The unemployment rate is affected negatively by M2 and taxes. The L-T interest rate is affected positively by i_FF, M2, and taxes. The current account is affected by taxes only. Figure 1 gives the impulse responses after a shock on the innovation variable and its transmission to all the other endogenous (objective) variables through the dynamic (lag) structure of the VAR (Table 12). Table 13 presents the VAR of the same five (5) public policy objectives for the EMU. The real income (q') is affected positively by the i_OND and G'. The inflation (p') is affected negatively by G'. The unemployment rate (u') is affected negatively by the i_OND. The L-T interest rate (i_{L-T}') is not affected by any policy instrument. The current account (ca') is affected negatively by M2 and positively by G'. (The results for the EU are a little incompatible with free-market economic theory). Figure 2 provides the impulse responses for the EU of its VAR (Table 13).

SOME SOCIO-POLITICAL IMPLICATIONS OF MACROECONOMIC SHOCKS AND PUBLIC POLICY EFFECTIVENESS

Countries are different (even though the tremendous pressure that they face from the globalists) and each one faces its own idiosyncratic shocks; then, self-sufficiency is necessary, also independent public policies are needed to stabilize the domestic economy and improve the domestic social welfare, which depends on the socio-philosophical conditions and value system of the country and not on some value neutral economic and financial indicators.

We assume imperfect capital mobility, here, which means that a rise in domestic interest rates above the European rates generates capital inflows, but not in such massive amounts as it is required with the low return on the European rates. In the context of imperfect capital mobility, the government can attain the goals of internal balance (full employment) and external balance (balanced payments) through the use of a fiscal and monetary policy mix. Our concern is the...
determination of output (and employment), prices (inflation), interest rates, current account balance, and the level of the exchange rate in these two economies (U.S. and EU) operating under flexible exchange rates. We are particularly interested in the problem of EU suffering from unemployment and of the U.S. from high interest rates and current account deficits. Their national, business, and households debts are very high in both entities, which have disastrous personal and social effects currently and might have negative effects in the future on both economies.

In a world of managed (dirty) floating exchange rates, the Central Banks intervene from time to time in foreign exchange markets, which will affect the international reserve holdings of central banks (Fed and ECB). Many times, they do not allow the exchange rate to adjust to guarantee external payments balance. Then, the economy’s international transactions carried out and recorded by the current account (CA) and capital account (KA) are not balanced to zero, but an official reserve settlements account (OS) requires to make the Balance of Payments (BP) zero.

\[ BP = CA + KA + OS = 0 \]  

Since Spring 2003, it has been a surge of capital outflows from the U.S. to the Euro-zone as many investors from the Middle-East and Arab nations (due to the fear that the U.S. might freeze their funds) sought to sell dollars to purchase more safe European assets. These increased capital outflows have not contributed to the current account improvement of the U.S. This excess supply of dollars, associated with the capital outflows, has depreciated the dollar in foreign exchange markets. The current process tends to shift demand toward domestic goods and away from European ones, thus improving the current account balance (if Marshall-Lerner conditions holds), and if the U.S. is producing these products that Americans and foreigners are demanding.

The central banks’ holdings of international reserves are influenced by the international transactions of domestic and foreign residents. At a given level of the exchange rate (E), and in the absence of any disturbances affecting autonomous spending, eqs. (1) and (2) provide us with the combinations of domestic (p) and foreign (p*) prices and incomes (Y and Y*) that create equilibrium in the aggregate economies (AD=AS). These are the AD and AS curves. A rise in the nominal money supply increases real money balances, at a given level of the price of domestic goods. As domestic interest rates decline, investment and aggregate demand for domestic goods increase, at a given level of price, and shifts the AD schedule to the right. This increase in AD will affect the prices gradually. As the price of domestic goods increases, employment will also tend to rise over the short run. The result is an increase in output. As prices rise, employment increases, because real wage is declining.

Changes in the nominal money supply induce shifts of the AD curve. An open market purchase will clearly increase the money supply and at a given price level, the resulting increase in real money balances would then place downward pressure on domestic interest rates, inducing capital to flow out of the economy and depreciating domestic currency. The consequence would be an expenditure switch out of foreign and into domestic goods, with a resulting increase in spending on domestic goods. This corresponds to a shift of the AD curve to the right. An expansion of demand for domestic goods and services has become necessary for small EU economies, which have high unemployment and foreign trade deficits.

This short-run output boom induced by the increase in the money supply is closely linked to the decline in real labor costs associated with this disturbance. With nominal wage rates rigid over the short-run, the inflationary spur associated with the monetary expansion will reduce real wage rates. These reduced real labor costs and the consequent stimulus to domestic production have, as a counter part, a greater competitiveness of domestic goods in international markets, which is reflected in an increased real exchange rate.

In conclusion, the short-run expansionary impact of the monetary disturbance is closely linked to the decline of real wages, which spearheads an increase in net exports. Then, an expansion of the money supply will tend to shift the aggregate demand curve upward. By increasing the money supply, policy makers could, in principle, move the economy to full employment. It speeds it up by igniting inflation and therefore reducing real wages in the short-run. A domestic monetary expansion leading to increases in nominal and real exchange rates (currency depreciation) raises AD by improving the trade balance. At the same time, this policy implies that the foreign countries whose currencies appreciate both in nominal and real terms will face deteriorating net exports and a contraction of AD. Expansionary domestic monetary policy raises domestic real income-albeit, if temporarily at the expense of a reduction in real income abroad. Then, international policy conflicts arise from currency-depreciating policies under flexible exchange rates. These public policies effects have been lost for the EU members, because of their common currency (euro) since January 1, 2002. On the other hand, the U.S. is benefited from the depreciated dollar the last five years.

The aggregate demand curve is derived on the basis of a given level of the money supply, the exchange rate, the TOT, the real interest differentials, aggregate spending, foreign
income, and fiscal policy parameters. Changes in any of these variables will tend to shift the AD curve. A rise in the nominal money supply increases real money balances, at a given level of the price of domestic goods. The aggregate demand curve is derived on the basis of a given level of the money supply, the exchange rate, the TOT, the real interest differentials, aggregate spending, foreign income, and fiscal policy parameters. Changes in any of these variables will tend to shift the AD curve. A rise in the nominal money supply increases real money balances, at a given level of the price of domestic goods. At a given price level, $P_0$, as domestic interest rates decline, investment and aggregate demand for domestic goods increase. Changes in the exchange rate and the TOT also tend to shift the AD schedule. A devaluation switches demand toward domestic goods, at any given level of domestic prices, thus shifting the AD curve to the right.

Also, any expansionary fiscal (monetary) policy has a positive multiplier effect on the AD for domestic goods, at any given level of prices shifting the AD curve to the right. Finally, any increase in foreign income has a positive effect on our AD, depending on the foreign income elasticity of their demand for imports.

Public policies, then, are playing a major role in our economies and affect the real macrovariables and our lives. On the other side, we have the production of a nation, the aggregate supply. The interaction of AS and AD determines the equilibrium level of output (real income) and prices in the economy. The aggregate supply is derived on the basis of given wages, TOT, real income differentials, exchange rate and unemployment rate. As the price of domestic goods increases, employment will also tend to rise over the short run. The result is an increase in output. This positive relationship between changes in prices and quantity supplied of domestic goods in the short run is the short run AS curve of domestic goods. As prices rise, employment increases because real wage is declining, then the output increases.

The economy is in short run equilibrium when the quantity demanded of domestic goods equals the quantity supplied of domestic goods. There is a simultaneous short run equilibrium in the goods, money, and labor markets. But a broad array of situations can destabilize an economy, leading it to either, balance of payments difficulties, national debts, recessions and high unemployment (as it is in the EU for the last years), accelerated price increases (inflation) or to all of them combined. An external shock in the form of increased raw material and energy prices (as it happened before, where the price of oil rose in one year from $11.38 to $29.88 per barrel; in July 2006, its price surpassed $75.00 per barrel, today, June 12, 2007 it is $65.06) would raise the costs of imported inputs, inducing the AS curve to shift to the left, causing domestic prices to rise and output to fall. Internal events in the economy may also contribute to destabilization, i.e., an increase in taxes, which will shift the economy’s AS leftward, increasing domestic prices, reducing private saving, deteriorating the economy’s international competitiveness, worsening its trade balance and reducing its national product. Increased government spending could have a permanent positive effect on output if the economy is below full employment, but at the same time, it will be inflationary if not combined with measures such as tax cuts, that shift aggregate supply. Internal events in the economy may also contribute to destabilization, i.e., an increase in wages (but this is impossible today, due to shifting of power in labor market from workers to businesses), which will shift the economy’s AS leftward, increasing domestic prices, deteriorating the economy’s international competitiveness, worsening its trade balance and reducing its national product because multinational firms are moving to lower cost countries. Financial markets volatility (risk) could cause serious problems in the future. Currently the housing market and the automobile industry have created problems in the U.S. growth ($g_D = 0.6\%$ during the 1st quarter of 2007).

The long run equilibrium of an economy occurs at that point where there is full employment and balanced payments. Today, almost all countries are in disequilibrium because they face unemployment and deficits in their balance of payments accounts. The free-market economy is acting procyclically and without government’s and central bank’s interventions, the economies will be in long-run disequilibria for a very long time. Macroeconomic adjustment programs are intended to speed up the adjustment of an economy toward long-run equilibrium. Policies must be enacted in situations, in which the economy is not characterized by full employment and price stability, but is instead suffering initially from high unemployment, chronic inflation, trade account deficit, and national debt. A wide range of disturbances can destabilize an economy, leading it to stagnation, unemployment, inflation, deficits or to all these problems combined.

The asset market equilibrium is represented by the money market, eqs. (9) and (10). The money supply, here, is also affected by the exchange rate (the balance of payments conditions of the country). The nominal money supply is endogenously determined by the economy (central bank is targeting interest rate, $i_{ff}$). With a fixed interest rate, eqs. (9) and (10) state the combinations of money, price, income, and exchange rate that clear the money market.
Investors in U.S. and EU can borrow or lend at \( i \) and \( i^* \). Arbitrage between domestic and European capital markets causes interest rate parity (IRP) to hold. When the domestic interest rate increases above the European level \((i_t > i^*_t + f_t - s_t)\), there will be a huge inflow of foreign funds into the U.S. economy, generating a massive capital account surplus and consequently a current account deficit and a domestic currency appreciation. This dollar appreciation would cause the interest rate \((i)\) to fall, IRP will be created and balance of payments equilibrium might be restored.

The equilibrium of the economy occurs when there will be a simultaneous equilibrium in the goods and money markets at the interest rate \( i_0 \) and with a freezing funds risk premium (FFRP), \([i_0 = i^*_t + (f - s) + FFRP_t]\). Aggregate supply will be equal to aggregate demand at the price level \( P_0 \) and at an equilibrium level of output equal to \( Y_0 \). Then, the money market equilibrium condition, eq. (9) becomes,

\[
\frac{M_t}{P_t} = L(Y_t, i^*_t, f_t - s_t, FFRP_t, e_t) \tag{16}
\]

where, \(-s_t\) and \(e_t\) cancelled because are equal to zero. Then, the above real money equation becomes,

\[
\frac{M_t}{P_t} = L(Y_t, i^*_t, f_t, FFRP_t) \tag{17}
\]

Equation (17) determines the equilibrium level of income in the domestic economy by solving it for \( Y_0 \), which is becoming,

\[
Y_0 = F\left(\frac{M}{P}, i^*_t, f, FFRP\right) \tag{18}
\]

Equation (18) shows that the equilibrium level of income, \( Y_0 \), can be determined by \( M_0, P_0, i^*_o, f_o \), and \( FFRP_0 \). Then, the forward rate \((f_0)\) drives the spot rate \((e_0)\), too.

An expansion of government spending \((G)\) raises aggregate demand for domestic goods and shifts the AD curve upward. This results in upward pressure on domestic interest rates, generating incipient capital inflows as investors shift their portfolios toward the relatively more attractive domestic assets. The government will supply more securities to finance this new budget deficit. This will appreciate the U.S. dollar and will induce a switch of aggregate demand out of domestic goods and into imports, deteriorating the current account and shifting a little to the left the AD curve. But, this increase in aggregate demand will increase income (from \( Y_0 \) towards \( Y_F \)). The high income raises money demand and interest rate rises. This increase in income has no lasting effect. Of course, the central bank (Fed) has an interest rate target and will expand the money supply to keep the interest rate on target. This will shift the AD curve to the right. As a result of the downward pressure on domestic interest rates, the economy would face massive capital outflows as investors switch toward the relatively more attractive European assets. The result is a depreciation of the U.S. dollar. This depreciation in turn, shifts aggregate demand toward domestic goods and production reaches \( Y_F \). Then, this expansionary fiscal and tight monetary policy have increased interest rate, deteriorated the budget deficit, increased output (unemployment has declined), depreciate the currency, and improved a little the current account.

Within the context of imperfect capital mobility, the government can attain the goals of internal balance (full employment) and external balance (balanced payments) through the use of monetary and fiscal policies. But, these public policies have been lost for the EMU country members; they have become exclusive policies of the ECB and of the European Commission. The countries in Euro-zone have lost their exchange rate policies (devaluation of their currencies) and the free trade agreements with the rest of the world do not allow them to use any protective trade policies (tariffs, quotas, qualitative restrictions, etc.). Also, from 2003 to 2007, we had an unexpected appreciation of the euro, which has affected EU exports negatively, but prices in Euro-area have not decline, they have increased absurdly, which show that free market does not work, there, so the euro and the entire Economic and Monetary Union was not a very good and thoughtful choice. Rather, it was disastrous for the sovereign nation-state.

The data show that the U.S. is close to full employment (U.S. is relatively close to this point of production), but EMU is far away to the left of it (high unemployment). If the equilibrium of the economy lies to the left of this vertical segment of the AS line, it faces unemployment. The desired point in terms of the government’s and central bank’s goals is at full employment, where both internal and external balances are obtained. An appropriate combination of fiscal and monetary policies is necessary to attain internal and external balance. Trade balance equilibrium requires an expenditure-switching policy from foreign to domestic goods and an optimal interest rate to affect positively the capital account balance and the domestic economy.

In situations where countries share unemployment and recession, or are under worldwide inflationary pressures,
monetary policy with floating rates may engender in international policy conflicts. On the other hand, when business cycles in different countries are out of phase, such policies may in effect have negative repercussion effects abroad. The United States was in a recessionary situation (as it was in 2001) while Europe is suffering from unemployment and rampant inflation (due to the introduction of euro). In this context, U.S. expansionary monetary policy had potentially stimulated the economy by inducing a U.S. dollar nominal and real depreciation. The impact of the policy abroad, on the other hand, might be deflationary (but it did not happened), resulting in lower inflation and output (high unemployment). Given the stage of the business cycle abroad, however, such effects were not very beneficent. It can thus be concluded that international policy conflicts would erupt from the use of monetary policy under floating exchange rates, interest differentials, price differentials, and speculation from the private sector (multinational firms and wealthy individuals).

Another popular theory, the “rational” expectations theory suggests that anticipated money growth should not have systematic effects on output, while unanticipated money growth may have effects over the short run, but none over the long run. A major stumbling block on the empirical work in this area lies in the problems associated with decomposing money growth into its anticipated and unanticipated components. Since there are not observed variables, they have to be estimated. This turns out to be a difficult statistical problem, as assumptions have to be made regarding the information individuals have available in forming their expectations, the government’s behavior, uncertain international events, corruption, the underground economy, natural disasters, speculations, globalization, the lack of objective knowledge, and so forth.

CONCLUDING REMARKS

Here, we wanted to test the effectiveness of public policies on supply and demand shocks in the two economies (U.S. and EU). Also, the effects of the exogenously given shocks: Changes in foreign variables (Y*, P*, E, i*) and price of oil (Poil), which affect the TOT, real interest rate differential, and price of energy and changes in wages (cost of production). Policy variables, like taxes (T), government spending (G), money supply (M), interest rate (i), and exchange rate (E) can improve aggregate supply, as it revealed with the empirical analysis.

In a world of unemployment and recession, no one can observe countries (especially large economies inside the Euro-area) undertaking competitive money supply expansions intended to raise domestic output by exporting the unemployment abroad because they have lost their most important public policy, the monetary one (the fiscal has been lost earlier). Similarly, in a world of inflationary pressures, countries tightening their money supplies might be able to reduce their inflation rate by transmitting it to other countries. These policy losses would cause serious economic and social crises in EU. A domestic (EU) monetary contraction would lower domestic prices but, at the same time, would tend to appreciate domestic currency, implying foreign currency (U.S. dollar) depreciation. Even though such depreciation might be associated with a short run improvement in net exports and output abroad, it might also raise foreign prices, which is not a welcome event in economies close to full employment, whose main worry is inflation. In today’s EMU economies, the problems are very acute, high inflation, very high unemployment, and above all the loss of their public policies (fiscal due to Maastricht criteria and monetary, due to ECB and euro).

A coordinated expansion by the EU countries would be able to impinge on domestic output and employment. If the EU countries pursue expansionary aggregate demand policies (increased G) this will tend to raise each expanding country’s interest rate, inducing the world interest rate to rise. Under perfect capital mobility, a rise in the world interest rate above its American counterpart would generate massive capital flight out of the U.S.A. (the euro has become a competitive international reserve currency, thanks to the Middle East crises, which are becoming worse every day), a sharp depreciation of the U.S. dollar and moderate output expansion in the U.S. It is consequently, quite possible to have international transmission of disturbances under fluctuating exchange rates, as Dornbusch and Krugman (1976) mentioned. A foreign income disturbance associated with changes in world interest rates will generally be transmitted domestically. A coordinated fiscal expansion in Europe might thus aid in pulling the U.S. economy out of the current small growth.

Under imperfect capital mobility, both monetary and fiscal policies will influence domestic output, with the effectiveness of fiscal policy oppositely related to the degree of capital mobility in the economy. Flexible exchange rates insulate the economy from isolated foreign autonomous spending disturbances (Euro-zone country-members lost this advantage), but not from a general coordinated disturbance by a group of foreign countries like the EU. A coordinated fiscal policy initiative by a group of major countries abroad affects world interest rates and is transmitted worldwide. Within this context, expansionary fiscal policy simultaneously engaged in by major countries will stimulate income growth in the world economy. Of course, countries
have to maximize their domestic social welfare and not what the irrational and unpatriotic globalists are claiming today.

What we have discussed here illustrates the inherent difficulties of attaining multiple objectives in a free-market open economy and especially if these economies are members of the same economic and monetary union. Contractionary monetary and fiscal policies oriented toward a rapid improvement in the balance of payments will generate a sharp recession and increased unemployment. Alternatively, if a devaluation is used to attain balanced payments and to raise output, prices will rapidly increase, fueling inflation. Finally, if contractionary demand policies are attached to devaluation as a package, price stability and balanced payments can in principle be attained, but unemployment will not be completely eliminated, especially lately, with the destruction of the small businesses. The main reason for these conflicts of objectives lies in that, with an unchanged aggregate supply curve, the range of possible equilibria of the economy will lie along the curve, implying a short-run trade-off between output and price increases. This suggests that policies oriented toward increasing aggregate supply (shifting the AS curve to the right) may have an important role in macroeconomic adjustment programs. This type of approach was popularized in early 1980s by so called “supply side economics”, whose emphasis was on the use of tax cuts, labor market incentive policies, and other policies intended to manipulate aggregate supply. Moderation in consumption, increase in saving, and reduction of waste is necessary for a nation’s future.

The character of political, economic and monetary unions is deeply influenced and depend on the density of associational life in the union, the level of social trust, the education, the language, the history, the culture, the tradition, the religion, and a variety of other socio-cultural factors that lead countries and individuals into closer social relations within the union. Now, on matters of policy; the future of the common agricultural policy (CAP) with the creeping reductions on farmers’ subsidies, the Union’s external trade relations (especially with the unrivalled China), cooperation on defense with the U.S., the absurd enlargement (even to Asia), etc; the voices of the small nations and single individuals must be heard through referenda. Further ambitions for European integration need to be balanced by an understanding of the gains and losses that countries have had from the European projects. Security and safety is also a serious issue and especially for Greece (The Balkan region is very unstable, due to the new Muslim nations that the U.S. and the EU have created, there). Trade with the U.S., China, and the rest of the world is another major problem together with inward investment and the high unemployment and promoting healthy competition rather than oligopolies and monopolies, as at present. People must be encouraged to save instead of over-consuming and wasting their resources. Domestic small businesses and industries need to be protected for the benefits of the country.

There are many who oppose the EU’s objectives in principle and the practical benefits it affords its members, but at the same time there are former communist countries that want to join and some of them already became members on May 1, 2004 and on January 1, 2007. The likelihood that the EU can fulfill its own promises of “ever-closer” union, while remaining open to new members (expanded even to the non-Christian Asia) on the same terms is slim indeed. The first thing that will be missing, are the unique historical circumstances of the years between 1945 and 1989, which cannot be reproduced. The world is moving towards a new era; the century of delusion, of rebellion, of corruption, of abuse of power, or slavery, of ignorance, of destruction, of waste, and of apostasy. The disruptive effect of the decline of the Soviet Union has been at least as great in the East as in the West, due to the loss of balance between them. Germany, on the other hand, after its reunification has become once again the great power of Europe leaving far behind France and the others. Germans do lead Europe today, but the remaining question is, where should they take it? Their questionable past is also following them and is making them more arrogant. England is just following the U.S. Europe is too far for Britons. A cooperation with all the EU members might help the dissolution of this antinational artificial structure, the EMU. These supranational institutions have destroyed the sovereignty of the EU member-states.

Finally, the heterogeneity of the EU is unique. Institution building is taking place in the absence of a strong legitimating myth or ideology or belief structures, etc. The process is an ad hoc one, leading to greater future problems. The directed by the “dark powers” U.S. through NATO is in major control of the EU. We hope, there, to be some powerful sources of resistance to those oppressive institutions and their policies if they will act against individuals, as we saw lately from Poland and Spain and from France and the Netherlands (against the Euro-constitution). EU is an extremely diverse mosaic of nations, if someone studies the given diversity of historical experience, political, religious, and cultural cleavages across the entire continent. The European polity is extremely fragmented, reflecting diverse member state interests and an institutional structure based on a complex distribution of power across the European Council, Commission, Court, Parliament, and the new Constitution; consequently, they could lead to conflicts and confrontations among its members, with Russia, and even with the United States, as it happened during 2003 with the Iraqi invasion.
REFERENCES


“Tables, Figures, and endnotes available upon request from Ioannis N. Kallianiotis”.