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International Impacts on U.S. Inflation in the 1970s

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The United States experienced the most severe, sustained inflation in the 1970s since the turn of the century. The usual monetarist explanation points to excessive growth in the money supply. Indeed, as measured by M1-B, the domestic money supply grew at an average annual rate of 2.6 percent in the 1950s, 3.8 percent in the 1960s, and 6.4 percent in the 1970s. Nevertheless, there are other explanations for the inflation than the monetary one. This article cites the augmented importance of the foreign sector for the U.S. economy and argues that its impact was larger than previous studies indicate.

Studies estimating the effect of the foreign sector on U.S. domestic inflation usually focus on the 1973–1974 inflationary episode.[1] However, one would expect the impact of the foreign sector on current inflation to be cumulative.[2] Moreover, available studies typically do not control for variations in the relative size of the foreign sector and may thus yield inconsistent estimates of the foreign sectoral influence.

Using regression analysis of post-1972 overlapping quarterly data, we estimate both short-run and long-run impacts of the international area on U.S. consumer price inflation. The foreign sectoral variables in our estimating equation include the relative size of the foreign sector as well as export and import prices. Our results suggest that the international sector constitutes the major source of influence on U.S. price behavior in the 1970s. We find the effect of the import sector to be more important than the export sector, and the relative size of the import sector to be nonextraneous, in determining U.S. consumer prices. However, the export sector also exercises a positive short-run influence.

We first discuss the expanded U.S. foreign sector and its implications for domestic inflation. Section II develops an econometric model. The estimation and empirical results are presented in Section III. Section IV concludes the paper.

I. The Expanded Foreign Sector

As shown in Table 1, the combined total of the U.S. export and import sectors in real terms has grown from 7.7 percent of Gross National Product (GNP) in 1950 to 18.2 percent in 1980. This growth has occurred in both sectors but has been particularly pronounced in the export area during the 1970s. The somewhat slower growth of the *real* import sector is probably attributable to substantially

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[1]Examples of these studies are Berner, et al. [1975], Dewald and Marchon [1977], Levy [1978], Modigliani and Papademos [1976], and Weintraub [1976].

Most of the studies employ regression analysis of time series data that are weighted significantly by the pre-1973 period. However, Berner, et al., using an input-output matrix, attributes 28 percent of the increase in consumer prices from 1971:3 to 1974:2 to foreign factors. This finding, which obviously fails to capture the price expectations effect of the foreign sector, is lower than those obtained from regression methods. Such regression estimates generally range between 40 percent and 50 percent.

[2]For instance, effects of the floating exchange rate of the dollar and the cartelization of petroleum by the Organization of Petroleum Exporting Countries (OPEC) as of 1973 should not be limited to the 1973–1974 period.

TABLE 1
EXPORTS AND IMPORTS AS A PERCENT OF GNP CALCULATED FROM CONSTANT $ GNP

	Exports	Imports	Exports plus Imports
1946	5.7	2.9	8.6
1950	4.4	3.3	7.7
1955	4.7	3.6	8.2*
1960	5.2	4.2	9.4
1965	5.5	4.3	9.9*
1970	6.5	6.1	12.6
1971	6.3	6.2	12.5
1972	6.5	6.5	13.0
1973	7.8	6.5	14.3
1974	8.7	6.5	15.0*
1975	8.4	5.8	14.2
1976	8.5	6.5	15.0
1977	8.3	6.7	14.9*
1978	8.9	7.2	16.0*
1979	9.9	7.4	17.3
1980	10.9	7.3	18.2

*Totals of Export and Import percentages differ because of rounding.

SOURCE: Computed from the National Income and Product Accounts of the U.S., U.S. Department of Commerce.

rising prices of importable world commodities, particularly oil.

A number of explanations can be offered for the increasing share of the U.S. foreign sector. Specifically, the growth of developing nations and their growing demand for imported products must have contributed to this trade expansion. In addition, multinational corporations came of age in the 1970s. Further, the devaluation of the U.S. dollar, which began in August of 1971, and its 1973 free float from gold probably lent stimulus. Also, enlarged U.S. Current Account deficits, caused primarily by exceedingly high international petroleum prices, served to increase the *world's* supply of dollars leading to its depreciation and the consequent stimulus to U.S. exports.

Depreciation of the dollar exerts a direct inflationary impact by raising import and import-related prices to U.S. consumers, thereby exacerbating the increases initiated by the Organization of Petroleum Exporting Countries (OPEC). It could also be indirectly inflationary if it contributes to the excess aggregate demand for the U.S. exports which are less than perfectly elastic in supply. Expectations of higher future prices, created in part by these foreign sectoral variables, may also serve to nurture the inflationary process.

II. The Model

We assume that the rate of change of U.S. prices is a function of the rates of change in nominal wages, import prices, expected inflation rates, and a demand-pull factor, expressed as a function of excess domestic and foreign demands in the product market. It reflects domestic and external factors, such as world liquidity, the exchange rate, and external real factors.[3] These international factors are presumed to be summarized by foreign sectoral price behavior.

On the basis of the above assumptions, we estimate a semi-reduced form price equation of the form:[4]

$$\dot{P}_t = b_0 + b_1\dot{P}_{(t-1)} + b_2\dot{M}_t + b_3\dot{Q}_t + b_4'\bar{F}_t + U_t \qquad t = 1, 2, \ldots, T; \quad [1]$$

where

$\dot{P}_t$ = the rate of change of U.S. consumer prices in period t;
$\dot{P}_{(t-1)}$ = the growth rate of U.S. consumer prices, lagged one period;
$\dot{M}_t$ = the rate of change of the money supply for the t^{th} period;
$\dot{Q}_t$ = the growth rate of real output in period t;
$\bar{F}_t$ = a vector of relevant foreign sectoral variables for the t^{th} period;
u_t = the t^{th} period's error component, assumed to be subject to a first-order autocorrelation scheme;

b_0, b_1, b_2, b_3, b_4' are regression coefficients to be estimated;[5] the t index represents the time period; and T is the sample size.

$\dot{P}_{(t-1)}$ is included in the above equation to reflect the adjustment of current price inflation on the basis of the previous period's. Its coefficient, b_1, is expected to be positive if inflationary expectations are such as to cause the current inflation rate to adjust positively with the previous period's. The parameter b_1 should also account for the delayed effects of previous money and other (real) factors on current inflation. The coefficient of M_t measures the short-run effect of the rate of change in the money stock and is expected to be nonnegative, while b_3 represents the net effect of the "productivity" and "gap" effects.[6] It will be negative (positive) as the former effect is greater (less) in magnitude than the latter effect.

The relevant foreign sectoral variables include rates of change in import and export prices, with coefficients expected to be positive.[7] Other foreign sectoral variables represented by the vector $\bar{F}$ in the estimating equation comprise variables measuring the importance of the foreign sector. We represent these as the percentages of real values of export and import products relative to U.S. real GNP.[8] If the inflation rate emanating from the international area is consistently above that of the U.S., then an expanded foreign sector is likely to exacerbate the impact of foreign-induced inflation.[9]

III. Estimation and Empirical Results

In estimating equation [1] we measure the rate of consumer price inflation (omitting the t index), $\dot{P}$, by the rate of change in the personal consumption price deflator, CD; import price inflation is expressed as the rate of change of the import price deflator, MD; the money stock is measured by M1 (and M1B); real output is the gross domestic product in constant dollars; the effect of excess foreign demand is accounted for by introducing the growth rate of the export price deflator, XD. All variables, except those measuring the relative size of the foreign sector, are expressed as overlapping quarterly changes between successive years.[10]

The above equation was estimated on the basis of 1973–1980:1 data using a combi-

[3]For a full specification of the theoretical model, see Fosu [1980]. In the model, nomial wages are expressed as a function of labor market excess demand and the expected inflation rate.

[4]Variations of this equation have been estimated by, for instance, Modigliani and Papademos [1975], and Spitaller [1978]. Also, see studies cited in Footnote 1 above. For a detailed derivation of the equation, see Fosu [1980].

[5]b_4' is a row vector of coefficients for the foreign sectoral variables.

[6]The "productivity" effect is the real output effect, which is expected to be negative. The "gap" effect is the (demand) influence on price inflation of the growth of output relative to productive capacity, and it is expected to be positive.

[7]The coefficient of the import price variable varies positively with the importance of importables in gross domestic product. For example, larger input-output coefficients are expected to raise the coefficient

The impact of foreign excess demand may be channeled into higher foreign sectoral prices. In particular, the export price variable, assuming a full specification of relevant domestic factors in the price equation, may be reflecting foreign excess demand for domestic products.

[8]The importance of the foreign sector may also be measured by such other factors as the input-output coefficients of the product components of the foreign sector. Furthermore, import-competing goods may influence the extent to which any foreign-originated price is transmitted. A larger price elasticity of demand for imports, resulting from for instance a greater elasticity of substitution between imports and import-competing goods, would *reduce* more *both* the import price rise and increases in the relative size of the import sector.

[9]Existence of an effective cartel like OPEC could insure that import prices stay consistently above domestic prices. The data do show that import prices have trended significantly above domestic prices in the 1970s.

[10]The idea of quarter-on-quarter changes was rejected partly because of the inevitable large ratio of noise to signal effect. For a discussion of this point, see for example, Eckstein and Wyss [1972, p. 135].

It is also expected that, even though seasonally adjusted data are used in our analysis, the overlapping quarterly data will help to reduce any residual seasonal noise.

nation of the Hildreth-Lu search and Cochrane-Orcutt iterative procedures to correct for first-order autocorrelation. Because of the presence of a lagged dependent variable, estimating the autocorrelation coefficient, ρ, and the regression coefficients by direct minimization of the residual sum of squares would produce nonlinear estimating equations. Alternatively, conditional sum of squares minimization could be used by first estimating ρ.[11] We employed the Cochrane-Orcutt method to obtain values for ρ, and then applied the Hildreth-Lu procedure to insure global minimization of the error sum of squares. In addition, standard errors of the coefficients were adjusted upward to correct for negative biases due to the presence of the lagged dependent variable.[12] Results of the estimation are presented in Table 2.

With reference to Table 2, coefficients of the foreign sectoral price variables are positive and statistically significant in all equations except equation (4).[13] Equations (1) and (5) show that the import sector has positively impacted on U.S. consumer price inflation. Equations (2) and (6) reveal a similar influence of the export sector.

[11]See for example Johnston [1972, pp. 315–320].

[12]For a discussion of the need for adjustment of the variance-covariance matrix due to the presence of a lagged dependent variable, see, for example, Cooper [1972].

[13]Statistics reported in Table 2 show no evidence of (positive) autocorrelation. When there is a lagged dependent variable, then the appropriate statistic to test for autocorrelation is Durbin h rather than the Durbin-Watson statistic, which would be biased toward 2.0 (see Johnston [1972, pp. 312–313]. Durbin h is defined as

$$h = \hat{\rho}\sqrt{\frac{T}{1 - T\hat{v}(b_1)}} \doteq \left(1 - \frac{DW}{2}\right)\sqrt{\frac{T}{1 - T\hat{v}(b_1)}}$$

where $\hat{\rho}$ is the estimated autocorrelation coefficient, T is the number of observations, $\hat{v}(b_1)$ denotes the estimated variance of the coefficient of the lagged dependent variable, and DW is the Durbin-Watson statistic. Since h has the standard normal distribution, there is no evidence of positive autocorrelation at the .05 significance level when its value does not exceed 1.645. Thus, as long as $DW \geq 2.0$, $h < 1.645$. Hence, we report h values only when $DW < 2.0$.

To assess the relative importance of the two foreign sectors, both the export and import price variables have been included as separate variables in the regression equation. The results are provided in equation (4), Table 2. Unfortunately, the high correlation between the two variables (a simple correlation of .93) makes it difficult to separate the independent influences of the two sectors. Subsequently, the import and export price variables, MD and XD, are weighted to form XMD, which denotes the rate of change of the weighted arithmetic mean of the export and import price deflators, with export and import values serving as the respective weights. Results of the estimation involving the replacement of MD and XD with XMD are presented as equations (3) and (7), Table 2. As expected, the coefficient of XMD is positive and significant in each equation, suggesting a positive impact of the combined foreign sector on domestic price behavior. More important, the larger XMD coefficients (of .092 and .105 from equations (3) and (7), respectively) as compared correspondingly with those of MD (equations (1) and (5)) may suggest a positive independent short-run impact from the export sector.

Equations (5), (6), and (7) of Table 2 contain variables measuring the relative size of the foreign sector—MGNP, XGNP, and XMGNP. These denote, respectively, the values of imports, exports, and exports plus imports, as percentages of GNP. We note that while an increasing export sector appears to exercise no influence on CD, an expanding import sector has exacerbated the domestic consumer price inflation in the 1970s. Moreover, addition of MGNP to the equation containing MD (compare equations (1) and (5)) significantly improves the "goodness of fit," as measured by $\bar{R}^2$ and SEE.[14] Furthermore,

[14]Using the coefficients of determination, we obtain an F value of 4.40 [$F = 22(.970 - .964)/(1 - .970)$], which is statistically significant at the .05 level. Hence, at the .05 significance level, we reject equation (1) in favor of the unrestricted equation (5).

TABLE 2
DETERMINANTS OF THE RATE OF U.S. CONSUMER PRICE INFLATION, 1973–1980:1—REGRESSION RESULTS FROM A SEMI-REDUCED FORM PRICE EQUATION (DEPENDENT VARIABLE = CD)*

Equation	Constant	M1	GDP	MD	MGNP	XD	XGNP	XMD	XMGNP	CDL1	$\bar{R}^2$	SEE	DW Statistic (Durbin h)
(1)	1.998	.032	.018	.068[a]						.615[b]	.960	.457	2.48
	(1.741)	(.094)	(.089)	(.017)						(.189)			($h < 0$)
(2)	−.025	.176[c]	.008			.096[a]				.745[a]	.955	.484	2.32
	(1.749)	(.088)	(.096)			(.024)				(.175)			($h < 0$)
(3)	1.777	.068	.007					.092[a]		.598[a]	.960	.457	2.58
	(1.816)	(.092)	(.089)					(.023)		(.199)			($h < 0$)
(4)	2.154	.043	.009	.057[c]		.027				.576[a]	.958	.464	2.58
	(1.961)	(.107)	(.089)	(.033)		(.053)				(.206)			($h < 0$)
(5)	−5.083[a]	.020	.148[b]	.067[a]	.809[a]					.814[a]	.965	.427	2.04
	(1.526)	(.067)	(.057)	(.009)	(.265)					(.077)			($h < 0$)
(6)	1.315	.169[a]	−.004			.087[b]	−.168			.757[b]	.953	.492	2.41
	(2.583)	(.090)	(.112)			(.033)	(.408)			(.281)			($h < 0$)
(7)	−7.086[b]	.113	.138[b]					.105[a]	.485[c]	.752[a]	.961	.449	1.86
	(2.909)	(.068)	(.064)					(.017)	(.249)	(.124)			($h = .49$)

*CD, M1, GDP, MD, XD, XMD, and CDL1 are all expressed as percent changes between corresponding quarters of successive years; they are, respectively, the rates of change of the consumer price deflator, the money stock measured by M1, real gross domestic product, the import price deflator, the export price deflator, the weighted arithmetic mean of the import and export price deflators (the respective weights are the import and export values), and CDL1 is CD lagged one quarter. MGNP, XGNP, and XMGNP are, respectively, imports, exports, and imports plus exports, as percentages of GNP. $\bar{R}^2$ is the adjusted coefficient of determination, and SEE denotes the standard error of the estimate.

[a]Statistically significant at the .01 level (a two-tailed test).

[b]Statistically significant at the .05 level (a two-tailed test).

[c]Statistically significant at the .10 level (a two-tailed test).

while the coefficient of MD is hardly altered by the addition of MGNP, the effect of CDL1 is nevertheless raised, thereby augmenting the "long-run" impact of the import price variable.

Using $\bar{R}^2$ and SEE, we may infer from Table 2 that equations containing the import variables provide better fits than those that include the export variables. Moreover, replacing MD with XMD does not improve the goodness of fit, although it raises the short-run response. Deterioration in the goodness of fit in the case of equation (7), as compared with equation (6), apparently results from substituting XMGNP for MGNP. Unlike the import sector, an expanded export sector does not appear to exert an independent influence on domestic price behavior, i.e., in addition to the effect exercised by the export price variable. Such a result is not surprising, however, since the data show that, for the 1970s, while the import price trended *consistently* above domestic prices, the export price did not. (See also Footnote 9.) In addition, that the simple correlation coefficient between XGNP and MGNP is close to zero (.05) suggests a possible aggregation problem associated with constructing XMGNP.

On the basis of goodness of fit, we shall select and analyze equations (5) and (7) as reflecting the best alternatives among the seven presented in Table 2. From equation (5), the short-run effect of import prices on domestic prices is estimated as 0.067. Thus with U.S. consumer price inflation averaging 7.7 percent annually over the sample period (1973–1980:1), and the import price inflation averaging 15.2 percent,[15] we estimate that rising import prices have produced a short-run contribution of approximately 13 percent for the U.S. consumer price inflation over the 1973–1980:1 period. Similarly, with the combined import and export sector price inflation averaging 13.5 percent over the same period, we estimate from equation (7) a short-run impact of the combined foreign sector as approximately 18 percent of the domestic price inflation.

From equations (5) and (7) of Table 2, we calculate, respectively, average "long-run" cumulative (steady state) impacts on domestic price inflation of 0.36 and 0.42 for the import and the combined foreign sectoral price variables.[16] On the basis of the average behavior of these variables, as given above, these impacts translate into approximately 71 percent and 74 percent of the "long-run" 1973–1980:1 domestic price inflation as having been accounted for by the import and the combined import plus export sectors, respectively.

Considering other implications of our empirical results, equations (5) and (7) of Table 2 suggest, with the coefficients of the gross domestic product being positive and significant, that the gap effect outweighs the productivity effect. This result of course is plausible especially in the 1970s. Although industries have generally operated with excess capacity, obsolescence of energy-intensive capital in the 1970s may suggest that *productive* capacity is perhaps much lower than "nominal" capacity.[17]

Table 2 shows that the *short-run* impact of the money supply, as measured by M1, is generally not significantly different from zero. This result may seem puzzling at first, especially in the light of the generally acclaimed importance of monetary variables in affecting commodity price behavior. Nevertheless, other authors have arrived at similar results.[18]

[15]Note that these inflation rates are the averages of overlapping quarterly rates and would thus be somewhat lower than those averages computed on the basis of rates of change from the beginning to the end of the year.

[16]The long-run impact entails the effect of the foreign sector on lagged inflation as well. Specifically, steady state is achieved in the limit when the previous period's inflation rate approaches the current inflation rate.

[17]"Nominal" capacity is defined as the sum of productive capacity and nonproductive capacity.

Another explanation for the implied zero short-run monetary impact may be that, especially for the 1970s, the M1B is the more relevant monetary series. Utilizing 1973–1979 data, we experiment with the M1B money variable, obtaining:[19]

$$\begin{aligned} CD = {} & \underset{(1.258)}{.822} + \underset{(.061)}{.1171M1B} + \underset{(.085)}{.0317GDP} \\ & + \underset{(.013)}{.067MD} + \underset{(.137)}{.687CDL1} \\ & n = 27 \quad \bar{R}^2 = .958 \quad DW = 2.06 \\ & h < 0 \quad SEE = .439 \end{aligned} \tag{8}$$

$$\begin{aligned} CD = {} & \underset{(1.433)}{-4.621} + \underset{(.035)}{.070M1B} + \underset{(.055)}{.129GDP} \\ & + \underset{(.008)}{.069MD} + \underset{(.213)}{.733MGNP} + \underset{(.072)}{.780CDL1} \\ & n = 27 \quad \bar{R}^2 = .965 \quad DW = 1.86 \\ & h = 1.21 \quad SEE = .403 \end{aligned} \tag{9}$$

As observable from equations (8) and (9), the monetary variable now (M1B) exhibits a significantly positive coefficient, suggesting a positive short-run impact for money supply. However, note the robustness of the import price coefficients, which have remained virtually unchanged from those obtained earlier using M1 (compare with the corresponding equations (1) and (5)). Based on equations (8) and (9), respectively, we estimate a long-run impact of the import price as .21 and .31. These differ only slightly from the corresponding values of .18 and .36 obtained earlier from equations (1) and (5), respectively, where M1 was used instead of M1B. Results from utilizing the M1B series then confirm our earlier finding. That is, while the short-run effect of the import price remains the same, the long-run impact increases considerably when variations in the relative size of the import sector are accounted for. Furthermore, controlling for the relative import sectoral size improves significantly the goodness of fit of our model.[20]

How do our estimates compare with those of previous studies? Unfortunately, most of the relevant studies employ different measures of the dependent variable.[21] Spitaller [1978], however, explains "consumer prices" and obtains, with 1958–1976 overlapping quarterly data, short-run and long-run import price impacts of .04 and .27, respectively (see pages 269 and 271). Since he utilized the M1 series, the more corresponding set of comparable estimates in our study consists of .07 and .36 from equation (5). These are obviously respectively larger than Spitaller's.[22] Conjecturing that the difference between these estimates may be explained by the possibility that Spitaller's sample period was dominated

[18]See, for instance, Modigliani and Papademos [1975]. The authors, using 1953–1971 annual data, found that the short-run effect of M1 on domestic price behavior was statistically not different from zero. The same result was obtained when they tried a one-year lag of M1. Our experiment produced similar results.

Indeed, the exogeneity of the money supply has been questioned. Moore [1979], for instance, finds that changes in the money stock are explained significantly by, in particular, previous nominal wage rate changes.

[19]We concentrate our analysis now on the import sector, which provides the best fit on the basis of R^2 and SEE. All variables in the equations are as defined earlier. Again, the same estimation procedure described earlier is utilized here.

[20]The relevant F statistic equals 5.25 [$F = 21(.972 - .965)/(1 - .972)$], which is significant at the .05 level.

[21]For example, Modigliani and Papademos [1975] use the "Consumer Price Index excluding food." They [1976, p. 10] find that combined import *and* farm prices account for 60 percent of the rise in consumer prices *excluding* food in 1974. Since food prices were also impacted, however, in the 1970s by petroleum supply shocks, it is not clear that their dependent variable is the more appropriate one. Also, Dewald and Marchon [1977, p. 38] estimate that 46 percent of the increase in the GNP price deflator for 1973–1974 is accounted for by import prices.

[22]The null hypothesis that the short-run impacts are equal, for instance, is rejected at the .01 level with a t value of 4.14.

by the pre-1973 period when a different structure might have been effect, we reestimated equation (5) using 1947–1980:1 data, obtaining:

$$\begin{aligned} CD = & -.367 + .080MI - .007GDP \\ & (.398) \quad (.049) \quad (.029) \\ & + .067MD + .209MGNP + .675CDL1 \\ & (.011) \quad (.117) \quad (.059) \\ & n = 127 \quad \bar{R}^2 = .937 \quad DW = 2.06 \\ & h < 0 \quad SEE = .699 \end{aligned} \tag{10}$$

Equation (10) yields short-run and long-run import price effects of .07 and .21, respectively. Thus, although there is no change in the former, the long-run impact is reduced considerably when the sample period extends significantly into the pre-1973 era.

IV. Conclusion

We have presented evidence demonstrating that the U.S. international sector, defined to include the export as well as the import sector, has been *the* major source of consumer price behavior in the 1970s, accounting for over 60 percent of the long-run consumer price inflation during the 1973–1979 period.[23] Our evidence suggests that the post-1972 period is characterized by a larger long-run impact than previous estimates based primarily on pre-1973 sample periods would imply.[24] Furthermore, we find that the increase in importance of the import area appears to have exacerbated the inflationary process of the 1970s. Our results also show that failure to control for variation in the relative size of the import sector underestimates the *long-run* foreign sectoral impact in the 1970s. Although the import sector provides a better explanation, than the export sector, for U.S. consumer price behavior, a positive independent short-run impact from the export area is implied.

Our findings indicate that the international sector was more important than shown by previous studies of price inflation in the 1970s. Should the significance of the foreign sector continue, as is likely at least for the foreseeable future, the current study suggests that the international arena may deserve nontrivial attention, even in the case of the "almost closed" United States.

[23]The long-run response to MD of .31 from equation (9) translates into an impact of 61 percent.

[24]See, for instance, studies cited in Footnote 1. Note that these estimates are usually for the 1973–1975 period when the rise in import prices was considerably higher than that for the overall 1973–1979 period, so that such estimates would be even lower if applied to the whole post-1972 epoch considered here.

References

Berner, R., P. Clark, and B. Lowrey. "International Sources of Domestic Inflation," Joint Economic Committee, *Studies in Price Stability and Economic Growth* (94 Cong., 1st Sess.), Paper No. 3 (August, 1975).

Cooper, J. P. "Asymptotic Covariance Matrix of Procedures for Linear Regression in the Presence of First Order Autoregressive Disturbances," *Econometrica* (March 1972), vol. 40, no. 2, pp. 305–310.

Dewald, W. G. and M. N. Marchon. "International Prices and Exports in 'St. Louis' Models of Canada, France, Germany, Italy, the United Kingdom, and the United States," The Ohio State University College of Administrative Science, Working Paper Series 77-17 (May 1977).

Fosu, A. K. "The Importance of Foreign Sectoral Prices in the Determination of United States Consumer Price Behavior," Oakland University School of Economics and Management, Working Paper Series (1980).

Eckstein, O. and D. Wyss. "Industry Price Equations," in *The Econometrics of Price Determination: Conference*, Board of Governors of the Federal Reserve System and Social Science Research Council, Washington (1972), pp. 133–165.

Johnston, J. *Econometric Methods*, 2nd Ed., 1972.

Levy, M. B. "International Influences on U.S. Inflation 1971–1976," U.S. Department of Commerce, Bureau of International Economic Policy and Research (March 1978).

Modigliani, F. and L. Papademos. "Monetary Policy for the Coming Quarters: The Conflicting Views," *New England Economic Review*, Federal Reserve Bank of Boston (March/April 1976), pp. 2–35.

———. "Target for Monetary Policy in the Coming Year," *Brookings Papers on Economic Activity*, No. 1 (1975), pp. 141–163.

Moore, B. J. "The Endogenous Money Stock," *Journal of Post Keynesian Economics* (Fall 1979), vol. 4, no. 1, pp. 49–70.

Spitaller, E. "A Model of Inflation and Its Performance in the Seven Main Industrial Countries, 1958–1976," *International Monetary Fund Staff Papers* (June 1978), vol. 25, no. 2, pp. 254–277.

Weintraub, E. R. *The Impact of the Federal Reserve System's Monetary Policies on the Nation's Economy*, Staff Report of the subcommittee on Domestic Monetary Policy of the Committee on Banking, Currency and Housing, House of Representatives, 94 Cong., 2nd Sess. (December 1976).