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Inflation, Financial Development and Growth

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The last decade saw an explosion in research interest on economic growth. In particular, there have been a large number of thorough empirical investigations of the differences in growth rates among countries over long periods of time. These studies tend to emphasize particular aspects or causes of the growth process. Among the important correlates of economic growth that have been studied are inflation and the extent of financial sector development. In this paper we examine the interaction between the growth-inflation and growth-finance relationships.

It is generally thought that there is a negative relationship between inflation and long-term economic growth. However, the willingness of observers to express this hypothesis seems much stronger than the empirical evidence for it. Early empirical studies provide very mixed results with a variety of data sets and approaches that attempt to provide empirical substantiation for the hypothesis (see Haslag (1997)). It is difficult to pin down a negative long-term relationship because in the short-run a Philips curve phenomenon can lead to a positive relationship between growth and inflation. Several influential studies in the early 1990s (Fischer (1993), Barro (1996)) provided the empirical basis for the widely supported negative relationship. More recently, Bruno and Easterly (1998) have provided a thorough examination that provides some clarification. They conclude that the negative relationship between inflation and growth is due to high inflation episodes. Inflation has a negative impact on growth in the long run that is due to high inflation episodes; the threshold for an inflation effect on growth may be as high as 40 percent per year.

The empirical relationship between financial sector development and economic growth is much more robust; there is now an extensive literature that substantiates the relationship with a variety of data (see Khan (2000) and Levine (1997)). While the hypothesis that financial structure aids growth dates back many years (the emphasis on the role of the financial sector is due to Goldsmith (1969) and McKinnon

(1973)), firm evidence for the relationship did not appear until the 1990s when King and Levine (1993) provided cross-country evidence for the post war period and Wachtel and Rousseau (1995) provided evidence from long time series for several countries. These studies showed that the depth of financial sector development and greater provision of financial intermediary services are associated with economic growth. Additional work has showed that other features of financial development are also associated with higher growth rates such as stock market liquidity (Rousseau and Wachtel (2000)) and improved accounting, bankruptcy and governance procedures (Levine, Loayza and Beck (2000)).

Surprisingly, there have been few efforts to bring these two strands of the modern empirical growth literature. There are discussions in the theoretical literature of the finance-growth-inflation nexus. Inflation matters in many theoretical growth models because it alters the returns on money, which can have real sector consequences. However, there are various theoretical channels by which inflation affects growth and theory does not provide an unambiguous set of relationships among finance, growth and inflation. Nevertheless, the tripartite relationship is particularly important because inflation is related to financial repression. Inflation can repress financial intermediation by eroding the usefulness of money assets and by leading to policy decisions that distort the financial structure. The channel by which inflation effects growth may run, at least in part, through the financial sector.

We are aware of only one empirical effort to address these relationships and a few other studies that address the relationship between inflation and financial sector development (all of these are as yet unpublished). Andres, Hernando and Lopez-Salido (1999)[1] point out that the "two strands of the empirical literature [the finance-growth and inflation-growth relationships] have lived separate lives." Their paper brings the two strands together with a data set of mostly industrialized (OECD) countries over a relatively short time span. The finance-growth relationship is weak and not very robust, possibly because there is limited variation in financial sector development among these countries. However the negative inflation growth relationship is robust, although it is not clear whether the result is due to high inflation episodes in certain countries.

The effect of inflation on financial sector development is examined in Boyd, Levine and Smith (1996) and in Haslag and Koo (1999). Both of these papers show that inflation is associated with financial repression; the financial sector is less developed as inflation increases, particularly when the average inflation rate is high.[2]

Our purpose here is to explore the triangle of relationships – finance-inflation-growth – with the broader data sets that have been used in the recent empirical literature on growth and to see whether a direct effect of inflation on growth can be identified as well as an indirect effect through financial sector development. In our earlier papers (Wachtel and Rousseau (1995), Rousseau and Wachtel (1998 and 2000)), we have used time series data for individual countries, cross sections of countries with data

[1] A reading of their Banco De Espana Working Paper provoked our interest in this topic.

[2] Haslag and Koo also show a positive effect of financial depth on growth and a weak negative effect of inflation on growth with a specification that differs from ours. They examine a cross-section of countries with data averaged for the entire 1960-89 period.

averaged over time and panel data sets to examine the relationships between financial sector development and economic growth. Here we examine five-year averages extending from 1960 to 1995 for a cross section of countries. We estimate the growth relationships with that have become fairly common in the literature. The financial sector measures are broad indicators of the depth of intermediary activity that are available for large number of countries for considerable periods of time.

Our aim here is to answer two related questions:

1. Does inflation inhibit growth directly and/or through a negative impact on financial sector development?
2. Does financial sector development lead to growth when the inflation rate is held constant?

Some of the reasons for the inflation-growth and finance-growth relationships will be briefly described in the next section. The following section describes the data that will be used and it is followed by a presentation of results.

Why Do Inflation and Finance Matter?

There are two distinct relationships between the inflation rate and economic growth. The first is the short-run Philips curve relationship. In the short-run, a higher level of inflation is often associated with more rapid growth. The reason is simply that in the short-run economic expansions will often create demand pressures that lead to inflation. However, for a variety of reasons that we will not go into here, the Philips curve relationship does not persist beyond the short run. The second is the negative long-term relationship that is often observed in low frequency or cross-country data, particularly with relatively high inflation rates.

The negative impact of inflation on growth in the long run can be due to direct effects and to indirect effects through the financial sector. Direct effects include the higher transactions and information costs in an inflationary environment that inhibit economic development. For example, economic agents will find planning difficult when inflation makes nominal values uncertain. Firms and individuals will be reluctant to enter contracts when inflation is imperfectly predicted and judgments about absolute and relative prices are uncertain. The reluctance to enter contracts over time will inhibit investment and entrepreneurship. Thus inflation will have a direct effect on resource allocation and economic growth.[3]

These inhibiting effects of inflation are not likely to emerge at very low inflation rates. The reason is that low inflation rates are easier to forecast and at low inflation rates the costs of forecast errors are not large. If inflation is 1 per cent and the forecast is for 2 per cent then a large proportional forecast error has been made but the costs of the error and consequent resource misallocations are probably small. It is for

[3] Growth theory provides a variety of mechanisms that can lead to both positive and negative relationships between growth and inflation (see Haslag (1997) for a survey). Both Mundell and Tobin suggested mechanisms for a positive effect of inflation on growth. Mundell suggested that inflation reduces financial wealth and leads to more saving while Tobin suggested that inflation leads to portfolio adjustments from money to capital.

this reason that the literature on the negative growth effects of inflation suggests that the relationship emerges when inflation is above a threshold of at least 20 per cent.

The indirect channel for the negative effect of inflation on growth is through its effects on financial sector development. Inflation will inhibit the development of the financial sector and financial sector development has a positive effect on growth. High inflation will inhibit any long term financial contracting and financial intermediaries will tend to maintain very liquid portfolios. Thus, in an inflationary environment intermediaries will be less eager to provide long-term financing for capital formation and growth. High inflation is often associated with various forms of financial repression as governments take actions to protect certain sectors of the economy. For example, interest rate ceilings and credit allocation are common in high inflation environments. Such controls lead to inefficient allocations of capital that inhibit growth. Now, the relationship between financial repression and inflation can be bi-directional. In some instances, repression is a crude effort to protect certain sectors from inflation. In other instances, financial repression that is introduced to assist the government finance its own activities is a cause of both inflation and resource misallocation.

There are many facets of the relationship between the depth of financial sector development and economic growth. In summary, a deeper and more active financial sector will encourage savings and investment and improve the allocation of savings to investment projects. A well developed financial sector encourages a higher level of capital formation and most importantly leads to improved allocation of capital.

Data and Methodology

An almost standard empirical framework has emerged since Barro (1991) and King and Levine (1993) introduced cross section regressions for the study of growth among countries. Growth equations include a standard set of explanatory variables that provide robust and widely accepted proxies for growth determinants. Furthermore, the use of data averaged over a number of years has become a standard approach for analyzing long-term determinants of growth. Our empirical framework draws on these decade old traditions.

Our data set is constructed as a panel of country observations from the World Bank's *World Development Indicators*, and includes as many as 84 countries over the period 1960-95.[4] Since our interest is the longer-term effects of inflation and finance, we use five-year average data as the frequency of observation.[5] Data are thus available for seven time series observations for each country. Missing data for individual countries in particular five-year periods reduces the total number of observations that are available for any given estimation procedure.

[4] The 1999 version of *World Development Indicators* includes 227 countries, but the availability of an adequate array of financial indicators limits the coverage of our sample to 84 countries. King and Levine's (1993) sample is of similar size.

[5] The use of time series averages in panel data for cross-country studies has become commonplace. Earlier studies take average data over a decade or even several decades. We prefer the shorter period because it allows for more time series variation in the data.

The by now standard specification of the basic growth equation regresses the average rate of real per capital GDP growth for the five-year period on a standard set of conditioning variables:

- Initial real GDP has an expected negative sign due to real convergence. Everything else held constant, a high GDP country will have a lower growth rate since gradual convergence is expected.
- The log of the initial secondary school enrollment rate is used as a proxy for human capital investment and enters with an expected positive sign. School enrollment rates (called SEC in the tables) are more widely available than more specific measures of human capital. It is a good overall indicator of the commitment towards investments in human capital.
- Fixed effects for the time periods are included because global business cycle conditions result in variations in growth rates over time that are common to many countries. The fixed effects (dummy variables for the time periods) are always significant as a group. They are retained in all equations although the coefficients are not shown in the Tables.

The additional variables examined here are the inflation rate and measures of financial sector development. The inflation rate is the average annual inflation rate over the five-year period. Three measures of financial sector depth are used in the study:

- M3/GDP
- (M3-M1)/GDP
- Total credit / GDP

The broad money supply M3 includes all deposit type assets and is a measure of intermediary activity. As a financial sector becomes more developed and exhibits greater depth, there will be more activity by financial intermediaries. M3 less M1 takes the pure transactions assets out of the ratio (currency and transactions deposits) and focuses on the intermediation activities of depository institutions. Financial depth is also reflected by the activities of non-depository intermediaries and direct finance. The total credit ratio reflects the overall level of financial intermediation in an economy.

Since coefficients in equations for the GDP growth rate may be influenced by simultaneity between growth and contemporaneous measures of inflation and financial depth, we use instrumental variables to extract their pre-determined components in the course of estimation. The instruments used for inflation and financial depth are their values in the starting year of each five-year period. Following Levine and Zervos (1996), we further ameliorate the simultaneous impact of growth on financial depth by using initial values of the ratios of exports plus imports to GDP and government expenditure to GDP, as well as initial values of those financial depth measures not included as regressors as additional instruments.

Simple correlations of the variables are shown in Table 1. The financial ratios show positive but not terribly large correlations with GDP growth: .177 for M3, .149 for (M3-M1) and .106 for the credit ratio. The negative correlation of inflation with growth is -.189. The financial ratios are correlated amongst

themselves and for this reason we will experiment with one at a time. The financial ratios are also highly autocorrelated from one five year period to the next while the autocorrelation of inflation is only .173.

Variable means are also shown in Table 1 with the observations divided into quartiles by the inflation rate. The GDP growth rate is 2.48% per year in the first inflation quartile but only 0.92% in the fourth quartile. Note that the growth rate differs by only 0.35% between the first and third quartiles and then drops sharply by 1.21%. The finance ratios all decline monotonically as we move from the first to the fourth inflation quartiles. The finance ratios are relatively close together in the first two quartiles and then drop sharply from the second to the third and the third to the fourth inflation quartiles.

Regression Results

Instrumental variables estimates of the basic growth equation with the contemporaneous 5-year average inflation rate and a measure of financial depth are shown in the top panel of Table 2. The finance variables are all highly significant. To interpret the magnitude of the finance effects on growth consider a 10% increase in the financial depth ratio from its mean. The increase in the annual growth rate is about 0.6 to 1.0 percentage points. The inflation effects are numerically small but are about twice their standard errors in each instance. It would take an increase in the inflation rate of more than 300 percentage points to depress the growth rate by 1%. The log of the initial secondary school enrollment rate, a measure of human capital investments, has a significant and positive growth effect. Finally, the log of initial GDP has a negative effect consistent with some regression towards the mean or GDP convergence over time.

The second panel of Table 2 shows growth equations without inflation. The coefficients on the finance ratios are somewhat larger and the absolute t-statistics are slightly bigger. The third panel shows growth equations with inflation but with the finance ratios omitted. The small negative inflation coefficient is unaffected by the omission of a finance ratio. These results are as expected given the small correlations between inflation and any of the finance ratios. There is no indication from these full sample regressions that the finance and inflation effects are dependent on one another.

The results in Table 2 would seem to be strongly supportive of a financial depth effect on growth that is independent of inflation and of a small negative inflation effect on growth as well. However, the comparison of the results with and without the inflation rate suggests that the inflation effect on growth is in part working through the finance variables.

The final panel of Table 2 also experiments with the timing of the inflation effect. Equations are shown with contemporaneous inflation and lagged (previous five-year period) inflation. The negative effect of inflation on growth is stronger with the contemporaneous inflation rate.

The literature on inflation and growth indicates that the relationship is due to high inflation episodes. This is consistent with the very small but statistically significant inflation coefficients in Table 2. These results could be driven by outlying observations. There are seven (out of 571) observations where the five-year average annual inflation rate exceeds 500%. We examine the outlier effects and the nonlinearity in the relationships by segmenting the sample into high and low inflation components. First,

we take a 40% inflation rate as the "high inflation" cut off. Less that 10% of the observations have inflation above 40% (remember that this is the average inflation rate for a five year interval and not just one year). Bruno and Easterly (1998) suggest the 40% threshold for the definition of high inflation episodes. They find that growth falls sharply when inflation crosses that threshold and then recovers rapidly when inflation comes down. Second, we divide the sample at the median inflation rate for the entire sample, which is 8.3%. Third, we show results for the entire sample with the seven hyperinflation (above 500%) observations removed.

Table 3 summarizes the results for these alternative ways of segmenting the sample. In the top panel inflation and finance coefficients are shown for equations that include both. In the bottom panel only the finance ratios are included in the equations. All equations include the other conditioning variables (initial GDP, initial SEC and the fixed effects). The results are consistent across the three measures of financial depth.

The negative effect of inflation on growth occurs only in high inflation environments. The negative inflation effect is driven by the small number of hyperinflation observations. The inflation effects are insignificant when these observations are removed. However, the insignificant inflation coefficients can be due to positive (Phillips curve) and negative inflation effects that offset each other. With low inflation rates there is some indication of a positive (Phillips curve type) relationship even with the five-year average data.

The positive effect of financial depth on growth disappears with high inflation. Holding the inflation rate constant in high inflation situations, improvements in financial depth do not contribute to growth. With inflation itself omitted from the equation, the finance effect is still small in the high inflation environments.

The full sample regressions in Table 2 showed that the finance and inflation effects were independent of one another. However, the segmentation of the data by inflation rate in Table 3 indicates that the relationships are more complicated; the relationship between inflation and finance requires further investigation. The direct negative effect of inflation on growth is a hyperinflation effect. At less than hyperinflation levels the relationship is a complicated interaction of positive and negative effects and simultaneity among the variables. The effect on growth of financial depth is robust but disappears when inflation is high.

Although the equations in Tables 2 and 3 are estimated with instruments for inflation and the finance variable, there may still be a great deal of simultaneity among the variables. We have already noted that the Phillips curve phenomenon might result in contemporaneous correlations between inflation and growth that obscures the longer-term effects from inflation to future growth. Moreover, inflation will have contemporaneous effects on the finance ratios. High inflation will increase the opportunity costs of holding money and lead agents to economize on money holdings. Thus, money to GDP ratios might decline as a direct consequence of the inflationary environment. Further, the finance to GDP ratios might decline in a high inflation environment if nominal debts do not increase as rapidly as GDP. This is

particularly likely if financial repression that is common in high inflation episodes keeps real interest rates low or even negative. Thus, additional work is needed to distinguish between short run and long run inflation effects on growth.

Although our results show distinct effects of inflation and financial depth on growth, there may also be an indirect effect of inflation on growth through its impact on financial depth. Table 4 summarizes inflation coefficients in equations for each of the financial ratios. The equations include all of the variables included in our growth model – log initial GDP, log secondary school enrollment, fixed effects for time periods and an inflation variable. The inflation variable is once again the average inflation rate for the 5-year period and the equations are estimated with instruments for inflation.

For the full sample the inflation effects are mostly negative. The results are stronger when the hyperinflation observations are removed. When the sample is divided in half at the median or at the high inflation threshold, there are striking differences. In low or below median inflation environments, there is a negative relationship between inflation and financial depth. In high or above median inflation environments, the relationship is insignificant.

Inflation effects economic growth directly and indirectly through its effect on financial depth. In the low inflation samples inflation often has a positive effect on growth although it has a negative effect on financial depth. The direct and indirect effects can be combined to estimate the total effect of inflation on growth. For example, consider the relationship between contemporaneous inflation and the M3/GDP ratio. The total effect for the low (<40%) inflation sample is the sum of a direct effect and an indirect effect through the financial variable:

$$.051 + .029(-.841) = .027$$

The indirect effect is negative and reduces the direct effect by about half. In all of the instances where the direct inflation effect is positive, it is offset by about half by the indirect effect through the inflation effect on financial depth.

In summary our results indicate that the effect of financial development on growth is robust. Holding inflation constant does not remove the finance-growth link. However, the relationships are not as strong when we restrict the estimation to high inflation episodes. The financial ratios might be imperfect measures of financial development, particularly at high inflation levels. We use these ratios as measures of the depth of financial intermediation or the development of the intermediary sector. However, changes in inflation can alter the ratios significantly without conveying any information about the performance of the financial sector. In some instances credit may grow faster than GDP and in some instances GDP may grow faster. Thus, changes in the financial ratios may be uninformative particularly in high inflation environments. Further work with more refined measures of financial sector development is needed to distinguish the various effects on growth.

We find that the inflation-growth relationship is also difficult to identify. There is a direct inflation effect on growth that is positive for low levels of inflation and negative for high levels of inflation. The somewhat ambiguous results on the inflation – growth relationship is not surprising. Haslag's (1997)

review of the literature shows that the results are very mixed. The negative growth inflation relationship is found when inflation rates are above about 10% and is more likely to be found with low frequency data observations. However, the relationship is not robust to changes in the set of other variables held constant. Levine and Renelt (1992) found the relationship to be weak in growth equations that include the investment to GDP ratio, which suggests that the direct inflation channel might be less important than a channel that works through finance and investment.

The finance – growth relationship, on the other hand, has been found to be very robust. Levine (1997) provides an exhaustive survey and Khan (2000) brings it up to date. Nevertheless, the observed relationship between growth and financial development in cross-country studies does not necessarily imply causality. Causality from finance to growth is indicated by additional work that explicitly identifies finance mechanisms and by the statistical tests with time series data (for example Rousseau and Wachtel (1998 and 2000)).

Our results can be compared to those of Andres, Hernando and Lopez-Salido (1999) who find only weak evidence of a finance-growth relationship among OECD countries from 1961-93. They show a strong inflation-growth relationship but do not indicate whether it is due to high inflation observations. Haslag and Koo (1999) in a cross section of countries over three decades show large effects of inflation on measures of financial depth. They find that inflation (which they take as a proxy for financial repression) has a negative effect on financial depth and that the effect varies with the inflation rate. Consistent with our results, they find that at high inflation rates, inflation is not related to financial development. Although they show differential inflation effects on financial development, they do not test for differential effects of inflation on growth. The financial depth effects on growth are robust but the inflation effects with 30-year average data or initial inflation are less powerful. The differences with our results that show a strong direct effect of inflation on growth are probably due to their choice of inflation variables.

Conclusion

In our introduction we posed two questions, which we can now answer. First, our results indicate that inflation inhibits economic growth both directly and indirectly through its effect on financial sector development. However, the direct effects are due to high inflation situations and largely disappear when inflation is moderate. The indirect effects of inflation through its effect on financial depth are strongest when inflation is moderate. Second, we find that the strong and robust effect of financial sector depth on economic growth is largely unaffected by the presence of the inflation rate. However, the effect of financial depth is much weaker in high inflation environments.

Although we have been able to provide some rudimentary answers to the questions posed, our results indicate that there is much more to be learned about these relationships. In particular, why is the finance-growth relationship weak when inflation is high? In addition, why does the direct inflation-growth relationship become significant? These and many more questions can be posed as we learn more about these important tripartite relationships.

Table 1

Summary Statistics for Five Year Periods, 1960-95

Correlations of Variables

	GDP Growth	Log SEC	Inflation	M3/GDP	(M3-M1) /GDP	Credit /GDP
GDP Growth	1					
Log SEC	.136	1				
Inflation	-.189	.037	1			
M3/GDP	.177	.499	-.033	1		
(M3-M1)/GDP	.149	.524	-.050	.925	1	
Credit/GDP	.106	.493	-.035	.771	.809	1

Autocorrelations

Inflation	M3/GDP	(M3-M1)/GDP	Credit/GDP
.173	.896	.901	.894

Variable Means by Inflation Quartile, 1960-95

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
GDP Growth	2.48	2.23	2.13	0.92
Inflation	2.28	6.31	11.16	137.6
% Of GDP:				
M3	49.1	46.6	40.8	34.3
M3 – M1	28.4	26.5	23.3	19.6
Credit	40.7	37.3	32.6	25.8

NOTE: The inflation quartiles are 4.1%, 8.3% and 15.2%.

Table 2
Growth Equations, 1960-95

Panel A: Full Equations (N=479)

Financial Variable:	**M3/GDP**	**(M3-M1)/GDP**	**Credit/GDP**
Constant	-1.108(1.6)	-0.784(1.1)	-0.919(1.2)
Log initial GDP	-0.259(2.0)	-0.297(2.3)	-0.338(2.3)
Log initial SEC	0.907(4.0)	0.917(4.3)	1.104(5.2)
Inflation	-0.003(2.5)	-0.003(1.9)	-0.003(2.3)
Financial variable	0.023(4.2)	0.031(4.1)	0.018(2.7)
R-bar sqd./SEE	.221/2.27	.245/2.46	.217/2.50

Panel B: Equations Without Inflation (N=479)

Financial Variable:	**M3/GDP**	**M3-M1/GDP**	**Credit/GDP**
Constant	-1.370(2.0)	-0.893(1.3)	-1.008(1.4)
Log initial GDP	-0.219(1.7)	-0.283(2.2)	-0.346(2.3)
Log initial SEC	0.832(3.9)	0.853(4.1)	1.057(5.0)
Financial variable	0.025(4.6)	0.035(4.8)	0.023(3.4)
R-bar sqd./SEE	.231/2.48	.237/2.47	.218/2.50

Panel C: Equations Without Financial Variables

	(1960-95)	**(1965-95)**	**(1965-95)**
Constant	-1.418(2.1)	-1.578(2.3)	-1.493(2.0)
Log initial GDP	-0.133(1.1)	-0.126(1.0)	-0.158(1.2)
Log initial SEC	1.026(5.1)	1.032(4.7)	1.088(4.7)
Inflation	-0.004(2.4)		-0.005(2.6)
Inflation lagged		-0.0002(0.6)	0.0006(1.1)
R-bar sqd./SEE	.169/2.56	.183/2.54	.123/2.63
N	517	459	446

Notes: Absolute values of t-statistics are in parentheses following each regression coefficient.
All equations include fixed effects that are not shown.
N = number of observations

Table 3

Summary of Growth Equation Coefficients, 1960-95

Equations with Inflation and Finance ratio

INFLATION SAMPLE:	Inflation	M3		Inflation	M3-M1		Inflation	Credit
<40%	0.051(2.0)	0.029(4.9)		0.050(2.0)	0.040(4.9)		0.040(1.5)	0.023(3.1)
>40%	-0.002(2.6)	-0.009(0.4)		-0.002(2.7)	-0.003(0.1)		-0.002(2.7)	0.003(0.1)
< Median	0.214(1.5)	0.036(5.6)		0.247(1.7)	0.045(5.0)		0.170(1.1)	0.030(3.4)
> Median	-0.004(2.9)	0.002(0.2)		-0.003(2.7)	0.009(0.6)		-0.004(2.8)	0.005(0.4)
<500%	0.004(0.7)	0.025(4.7)		0.002(0.4)	0.034(4.6)		0.001(0.2)	0.022(3.2)

Equations with Finance ratio only

INFLATION SAMPLE:	M3		M3-M1		Credit
<40%	0.025(4.6)		0.035(4.6)		0.020(2.9)
>40%	-0.016(0.7)		0.005(0.2)		0.001(0.0)
< Median	0.033(5.3)		0.040(4.7)		0.026(3.2)
> Median	0.005(0.4)		0.021(1.5)		0.012(1.0)
<500%	0.024(4.6)		0.033(4.6)		0.022(3.2)

Notes: Absolute values of t-statistics are in parentheses following each coefficient.
There are 435 observations with inflation < 40% and 44 with inflation >40%. There are 223 observations with inflation below the median and 256 with inflation above. The median inflation rate was calculated from the full sample of data.

Table 4

Effect of Inflation on Finance Variables, 1960-95

Coefficients on Contemporaneous Inflation

INFLATION SAMPLE:	M3/GDP	(M3-M1)/GDP	Credit/GDP
Full Sample	-0.023(1.7)	-0.021(2.2)	0.006(0.5)
<500%	-0.171(3.5)	-0.100(2.7)	-0.089(2.1)
< 40%	-0.841(4.1)	-0.594(3.9)	-0.715(4.1)
> 40%	0.013(1.7)	0.008(1.2)	0.010(1.8)
< Median	-2.162(1.3)	-2.154(1.8)	1.056(0.8)
> Median	0.009(1.0)	0.000(0.0)	0.017(2.0)

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