

Real Interest Rates in the Early 1980s

James Ross McCown
Florida Atlantic University
John D. MacArthur Campus
5353 Parkside Drive
Jupiter, FL 33458

Phone: (561)-799-8626
Fax: (561)-799-8535
Email: jmccown@fau.edu

Version: 10/13/01

JEL codes:

Keywords: Interest rates, budget deficits

Abstract:

This paper examines the causes behind the high ex post real interest rates experienced in the United States during the early 1980s. We show that expected long-term inflation rates were very high during the period, resulting in ex ante long-term real interest rates that were much lower than the ex post rates. Ex ante real rates in the high-deficit early 1980s were not much higher than those experienced during 2000, a year that had a large budget surplus.

I. Introduction

During the period from 1982 to 1985, nominal interest rates on U.S. Treasury securities were relatively high, ranging from 8% to 12% (Table 1). Many observers, including Paul Volcker, chairman of the Federal Reserve Board during the period, have claimed that high federal budget deficits (Table 1) were the cause of the high interest rates.

The CPI inflation rate ranged from 8 to 12 percent during the period from 1978 to 1981, but fell to an average of just under 4% during the 1982 – 1985 period (Table 1 and Figure 1). However, nominal interest rates remained at almost the same levels as those experienced during the 1978 – 1981 period. Thus, the ex post real interest rates were very high, averaging nearly eight percent for five-year and ten-year Treasury notes during the 1982 – 1985 period (Table 2).

Ex post real interest rates are little more than an historical artifact. The important real interest rates are the ex ante real rates, because both the borrower and lender must make some forecast of inflation before the loan is made, and come to an agreement on a nominal interest rate, which includes both a real rate plus expected inflation. This presents a problem for the researcher, because ex ante real rates are impossible to observe directly, and difficult to estimate.

If the ex ante real interest rates were as high as the ex post rates during the 1982 – 1985 period, then why did the U.S. GDP grow so rapidly in the 1983 – 1986 period (Table 1)? An exogenous shock that causes real interest rates to rise should have an inhibiting effect on output growth. Cecchetti (1992) shows that ex ante real interest rates were very high during the initial phases of the great depression.

If expected inflation rates during the 1982 – 1985 period were higher than the subsequent realized inflation rates, then the ex ante real interest rates were lower than the ex post real interest rates. The purpose of this research is to show that this was indeed the case. The realized inflation rates were very high during the 1978 – 1981 period and then fell to a fairly constant level just below 4% during 1982 - 1985. Even if short-term expected inflation rates may have dropped to 4% in 1982, it is unlikely that long-term expected inflation also dropped that quickly. Both borrowers and lenders would take into account their 1978 - 1981 experiences with high inflation, and make their decisions concerning nominal interest rates accordingly.

Using survey data of expected inflation, taken during the period, we show that the long-term (five and ten year) inflation expectations during the 1982 – 1985 period were much higher than the subsequent realized inflation rates, and thus the ex ante real rates were lower than the ex post real rates.

Section II examines expected inflation during the 1981 – 1985 period. Section III discusses the link between federal budget deficits and interest rates. Section IV concludes.

II. How high was expected inflation during the 1982 – 1985 period?

See Table 1 and Figure 1. The realized inflation rate ranged between 8% and 12% during the 1978 – 1981 period, dropped to less than 4% in 1982, and stayed at that level through 1985. If the expected inflation rates during the 1982 – 1985 period were equal to the realized inflation rates, then the ex ante real interest rates were equal to the ex post

real interest rates. In Table 2, we see that the average five-year ex post real rate was 7.82% during 1982 – 1985, and that the average ten-year ex post real rate was 7.94%.

Consider a hypothetical investor who is contemplating the purchase of a 10-year bond in 1983. He has seen the inflation rate fall to 4% in the last year. He might very well expect the short-term inflation rate for the coming year to also be 4%. But would he expect the inflation rate to stay at 4% or less for the coming ten years?

The high budget deficits of the 1982 – 1985 period give us yet another reason to suspect that long-term expected inflation rates were high during this time. If investors feared that the high budget deficits would be monetized by the Federal Reserve, and that such monetization would cause high inflation to resume, then expected inflation rates would have been much higher than the average 4% realized inflation rates of the period.

We compute our estimates of the ex ante real rates using contemporaneous survey data of expected inflation. Hoey, Rolley, and Hotchkiss (1988 and 1989) at Drexel Burnham Lambert conducted surveys of decision-makers in the financial industry concerning their inflation expectations for five-year and ten-year periods, during the 1980s. The results are in Table 3 and in Figures 2 and 3. Subtracting the survey expected inflation rates from the nominal interest rates gives an average 5.14% real interest rate for the five-year note for the 1982 - 1985 period, and an average 5.26% real interest rate for the ten-year note. These estimated real rates are much lower than the ex post real rates computed in Table 2. It is reasonable to assume that the market participants used the high inflation experience of 1978 – 1981 to at least some extent in forming their long-term forecasts. Although we can never be certain exactly what the market expectations of inflation were at the time, the surveys are probably the most accurate method, since these

surveys were taken at the time that these bonds were being traded on the markets, and the nominal interest rates were being determined.

III. Do high federal budget deficits cause high interest rates?

Paul Volcker (1992) expressed his attitude towards the large budget deficits in the early 1980s:

I lost no opportunity to emphasize that the result was to keep interest rates higher than they would otherwise be, a point that seemed self-evident to most of us, although it was denied by some enthusiastic supply siders. (pp. 177 – 178).

There have been numerous studies of the relation between federal budget deficits and interest rates. Most of them find no significant link, including Mascaro and Meltzer (1983), Makin (1983), Dewald (1983), Motley (1983), Hoelscher (1983), Canto and Rapp (1982), Horrigan and Protopapadakis (1982), and Plosser (1982).

Hoelscher (1986) finds a relation between deficits and ten-year Treasury bond rates for the 1953 – 1984 period. His model estimates that each \$100 billion of federal deficit raise the rate on the bond by 142 basis points. The 1984 deficit is estimated to have raised the rate by 225 basis points. However, Hoelscher does not adequately control for expected inflation in his model. He only uses expected inflation for a one-year forecast period, using survey data. He needs to use the expected inflation rate for a ten-year forecast period.

If we could do a controlled experiment and hold all other variables constant, an increase in the federal budget deficit should increase interest rates by increasing the supply of bonds. Why, however, have most researchers found little or no link between deficits and interest rates? One potential explanation is Ricardian equivalence. If

investors see an increase in the budget deficit and realize that implies higher future taxes, they will increase their savings accordingly, thus increasing the demand for bonds. Aside from Ricardian equivalence, there is also the possibility of exogenous changes in the demand for government bonds. Also, investors consider government bonds and private debt instruments to be substitutes, to at least some extent. Changes in the supply of private debt can cause changes in the interest rate on government debt.

Our estimates of the ex ante real interest rates of ten-year Treasury Notes, during the high deficit years of 1982 – 1985, are 5.26% using contemporaneous surveys of expected inflation. This compares with real rates as high as 4.3% on ten-year Treasury inflation-indexed securities during 2000, a year in which the federal government ran a budget surplus of 237 billion dollars. If deficits and surpluses truly have a significant impact on real interest rates, one would expect a larger difference.

IV. Conclusion

Ex post real interest rates were very high during the 1982 – 1985 period, averaging nearly 8% for five-year and ten-year Treasury Notes. This research shows that the ex ante real rates were likely much lower. Using survey data of long-term expected inflation, the real rates were just above 5%. Although realized inflation rates were fairly low during the 1982 – 1985 period, it is clear that investors took into account their recent experiences with high inflation during the earlier 1978 – 1981 period, and maintained high expectations of inflation for a few years afterward.

The high federal budget deficits of the early eighties are usually cited as the cause of the high ex post rates. However, the ex ante real rates computed in this research for the

1982 – 1985 period are not much higher than the real rates on inflation-indexed ten-year Treasury Notes during 2000, a year in which the federal government ran a large budget surplus.

Acknowledgements:

I would like to thank Alan Viard, Sarmilla Vishwasrao, Ky-Hwang Yuhn, and seminar participants at Florida Atlantic University. Alan Viard and Huston McCulloch provided data. Any errors are my own.

Table 1

Select Annual Data

	Federal Budget Deficit (billions)	CPI Inflation Rate	Real GDP Growth Rate	Nominal interest rate One year T-bills	Nominal interest rate Five year T-Notes	Nominal interest rate Ten year T-Notes
1977	53.7	6.73 %	4.32 %	6.08 %	6.99 %	7.34 %
1978	59.2	8.46	5.78	8.32	8.24	8.30
1979	40.7	12.50	0.92	10.30	9.30	9.26
1980	73.8	11.72	-0.16	11.92	11.37	11.34
1981	79.0	8.56	-0.14	14.28	13.90	13.63
1982	128.0	3.82	-1.15	11.96	12.64	12.64
1983	207.8	3.68	6.50	9.49	10.77	11.06
1984	185.4	3.92	4.44	10.67	11.98	12.16
1985	212.3	3.77	3.27	8.31	9.99	10.39
1986	221.2	1.07	2.14	6.34	7.31	7.65

Sources: Deficits and GDP are from the Federal Reserve Bank of Saint Louis. CPI inflation rates are from IFS. Nominal interest rates are from McCulloch and Kwon (1993)

Table 2

Ex Post Real Interest Rates

	Average ex post real interest rate One year Tbills	Average ex post real interest rate Five year T-Notes	Average ex post real interest rate Ten year T-Notes
1977	-0.65 %	-2.31 %	1.05 %
1978	-0.13	-0.24	2.34
1979	-2.20	2.12	3.90
1980	0.19	6.03	6.73
1981	5.71	10.15	9.59
1982	8.14	9.37	8.89
1983	5.81	7.34	7.35
1984	6.74	8.44	8.60
1985	4.54	6.11	6.91
1986	5.27	2.97	4.10
1982 – 1985 Average	6.31 %	7.82 %	7.94 %

Ex post rates are computed as the nominal interest rate on each note, minus the CPI inflation rate for the subsequent period equal to the maturity of the note. Figures are annual averages of monthly rates.

Table 3

Estimated Ex Ante Real Interest Rates – Utilizing Survey Data of Expected Inflation Rates Compiled by Hoey, Rolley, and Hotchkiss (1988 and 1989)

	Five Year TNotes	Ten Year TNotes
1981	5.32 %	5.51 %
1982	5.68	5.69
1983	4.40	4.51
1984	5.86	6.01
1985	4.60	4.83
1986	2.40	2.33
1982 – 1985 Average	5.14 %	5.26 %

Estimated ex ante rates are computed as the difference between the nominal interest rates for each note minus the survey expected inflation for the respective time horizon.

Bibliography

Canto, V. and D. Rapp, 1982. The 'crowding out' controversy: Arguments and evidence, *Federal Reserve Bank of Atlanta Economic Review* 67, 33 – 37.

Cecchetti, S, 1992, Prices during the great depression: Was the deflation of 1930 – 1932 really unanticipated?, *American Economic Review* 82, 141 – 156.

Dewald, W., 1983. Federal deficits and real interest rates: theory and evidence, *Federal Reserve Bank of Atlanta Economic Review* 68, 20 – 29.

Hoelscher, G., 1983. Federal borrowing and short-term interest rates, *Southern Economic Journal* 50, 319 – 333.

Hoelscher, G., 1986. New evidence on deficits and interest rates, *Journal of Money, Credit, and Banking* 18, 1 – 17.

Hoey, R., Rolley, D., and Hotchkiss, H., 1988. *Inflation Expectations Decision Makers Poll 1978 – 1988* (Drexel Burnham Lambert, New York).

Hoey, R., Rolley, D., and Hotchkiss, H., 1989. *Decision Makers Poll* (Drexel Burnham Lambert, New York).

Horrigan, B. and A. Protopapadakis, 1982. Federal deficits: A faulty gauge of government's impact on financial markets, *Federal Reserve Bank of Philadelphia Business Review*, 3 – 16.

Makin, J., 1983. Real interest, money surprises, anticipated inflation, and fiscal deficits, *Review of Economics and Statistics* 65, 374 – 84.

Mascaro, A. and A. Meltzer, 1983. Long and short-term interest rates in a risky world, *Journal of Monetary Economics* 12, 485 – 518.

McCulloch, J. H. and H. Kwon, 1993. U.S. term structure data, 1947 – 1991, *Working Paper*, Ohio State University.

Motley, B., 1983. Real interest rates, money, and government deficits. *Federal Reserve Bank of San Francisco Economic Review*, 31 – 45.

Plosser, C., 1982. Government financing decisions and asset returns, *Journal of Monetary Economics* 9, 325 – 352.

Volcker, P. and T. Gyohten, 1992. *Changing Fortunes: The World's Money and the Threat to American Leadership* (Times Books, New York).

Figure 1: Annual U.S. Inflation Rates

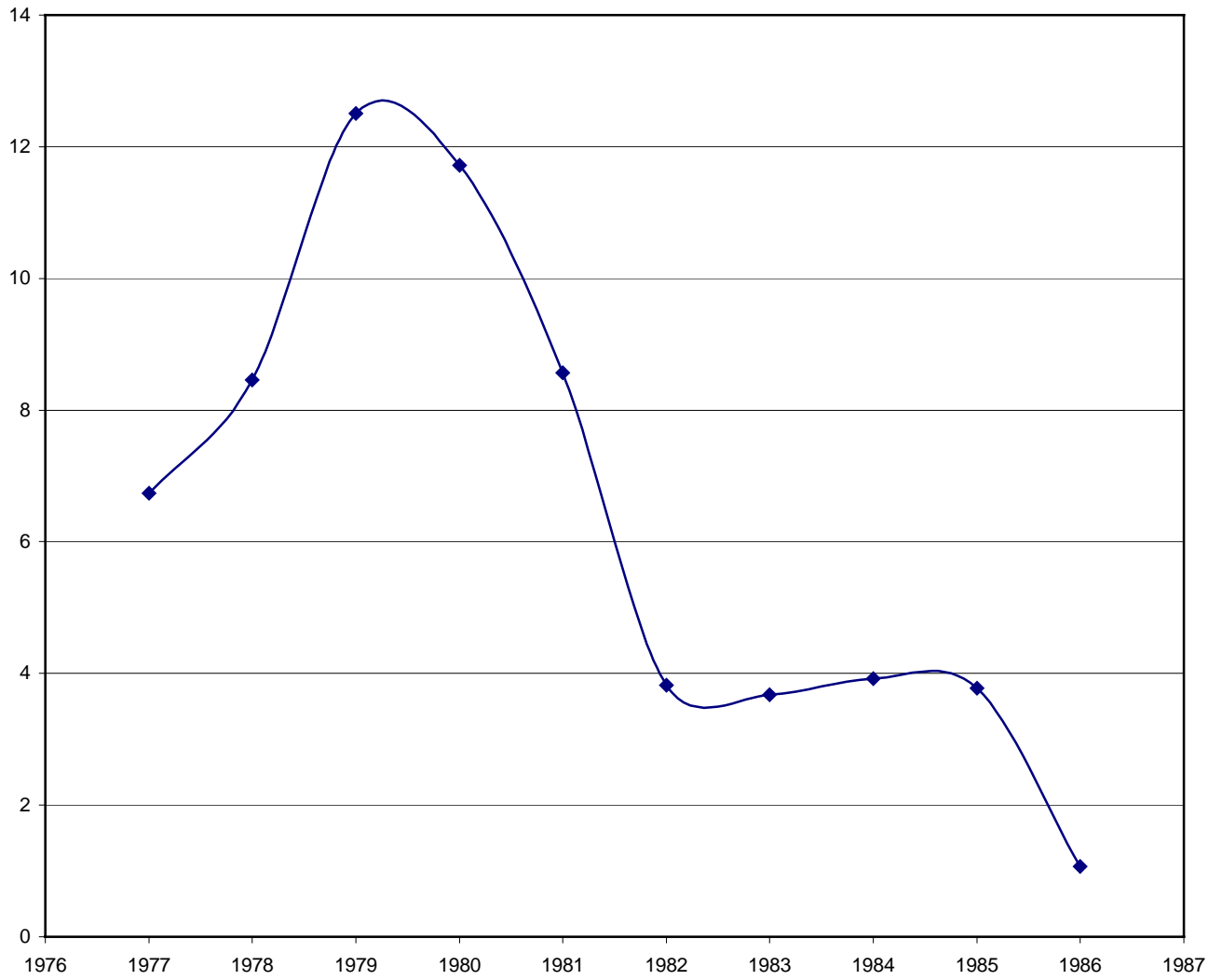


Figure 2: Five-Year Ex Post vs. Ex Ante Real Rates (Survey Data)

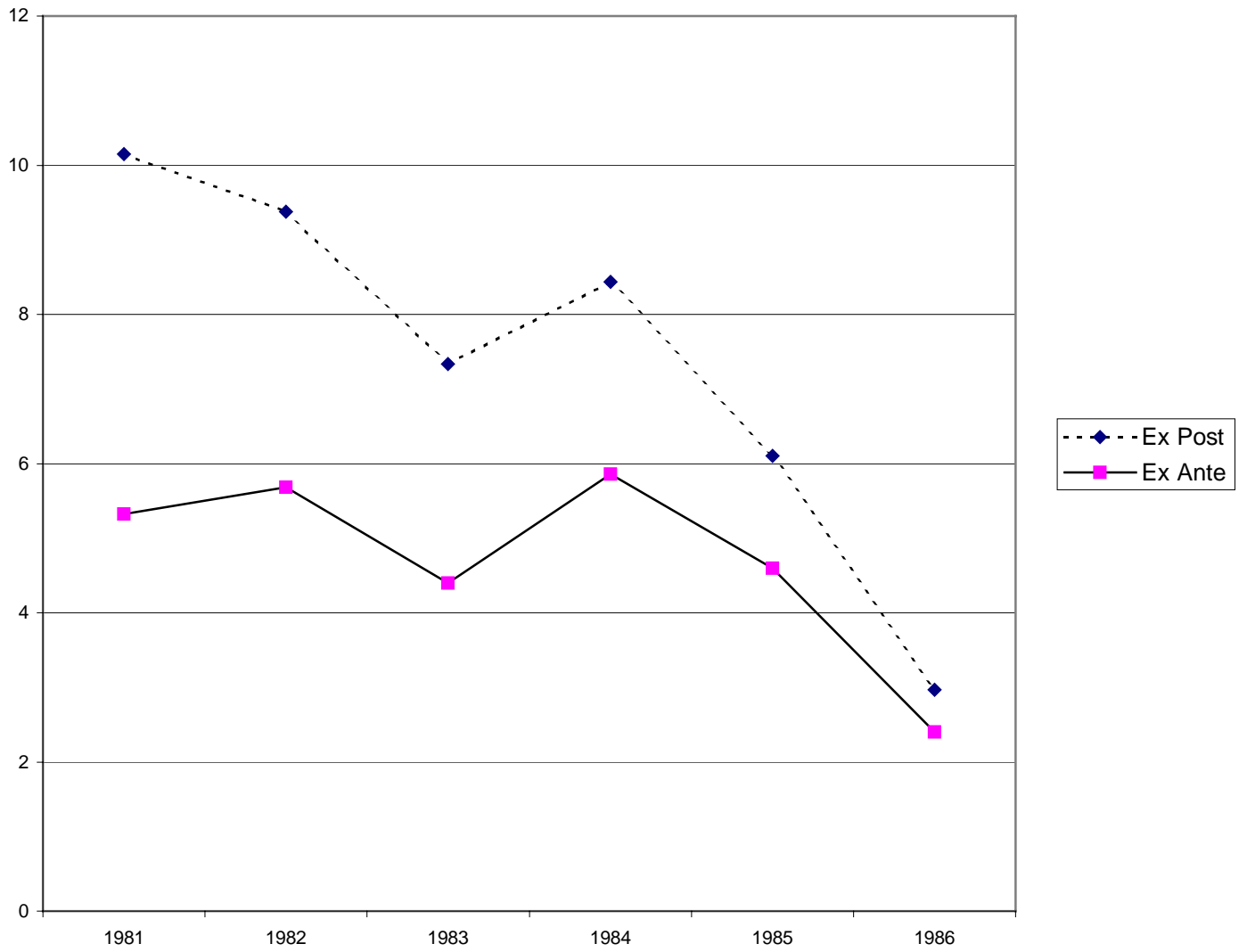


Figure 3: Ten-Year Ex Post vs. Ex Ante Real Rates (Survey Data)

