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Confronting Rubinomics and the Clinton Administration Economic Boom

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Abstract

The "crowding-out" debate is an important controversy in macroeconomics. More recently, the crowding-out debate was put in the forefront as an aftermath of the Clinton Administration economic boom legacy, in particular by the former Treasury Secretary Robert Rubin. Rubinomics or the argument that "fiscal discipline" will bring private investment to a growth path as a result of a decrease in real interest rates is appealing. However, we conclude based on data from the experience of the US economy during this period of extraordinary "fiscal discipline" that the evidence does not validate the arguments of Rubinomics

Introduction

By all macroeconomic standards, the eight-year administration of President William Jefferson Clinton was a significant improvement over the previous 24 years. The period from 1970 to 1980 was a period marred by the first significant recession since the 1930s (1974-75) and the emergence of the problem of stagflation. The period from the election of Ronald Reagan to the election of Bill Clinton was characterized by the conquest of inflation at the cost of sluggish growth, a failure to revive productivity growth and an unemployment rate that averaged over 7.1 percent, the highest for a 12-year period since the 1930s.[1]

With this as a basis for comparison, the Clinton Administration ends up looking like a great success. Real GDP growth rose to 3.7%. Productivity growth rose to 1.9% (and was 2.5% or above between 1996 and 2000). Unemployment averaged 5.2% while inflation averaged 2.6% but what was most impressive was that when unemployment fell below 5% in 1997 and kept falling (reaching 4% in 2000), the rate of inflation did not rise. In fact in 1997 it was 2.3% and in 1998 it actually fell.[2]

One of the major changes in policy that occurred during that administration is the change from high federal deficits to, first, reduced deficits and then two and a half years of surplus. Rubin and Weisberg (2003) and the Clinton Council of Economic Advisers argue that the achievement of “fiscal discipline” which caused the reduction in the federal budget deficit and the brief experience with surpluses was a crucial element in the prosperity of that decade.

Rubin’s memoir takes the argument further by comparing the current administration’s policies unfavorably with those of the Clinton administration. More recently, Rubin, Orszag and Sinai (2004, henceforth ROS), have focused on the serious damage that could be done to expectations and long run growth prospects if budget deficits reach levels of 5% of GDP and remain at that high level[3]. On the other hand, Stiglitz (2003) and Pollin (2003) do not accept the view that the successes of the 1990s were caused by the reduction in the budget deficit and the brief emergence of a budget surplus. Stiglitz has argued that the prosperity of the 1990s occurred in spite of, not because of, the reduction in budget deficits.[4] Pollin who has written extensively on the role of deficits in the American macro economy has argued that the budget deficit reduction was more than matched by a private sector borrowing explosion.[5] The result was a debt-driven expansion based in part on a large upward movement in both consumption and investment, which were stimulated by the bubble in the stock market. We believe that because of the current dispute about the importance of fiscal discipline both during the 1990s and into the future, a serious investigation of the alleged beneficial impacts of the Clinton Administration’s deficit reduction, or “Rubinism” if you will, is in order.

Plan of the Paper

The paper will start with a detailed analysis of the reasoning expressed during the well-documented meeting between President-elect Clinton and Fed Chairman Alan Greenspan in December of 1992. There are two versions of the "lesson" Greenspan presented to the President-elect in Woodward (1995) and Woodward (2001) and we will identify the economic implications of Greenspan's "seminar" with the President-elect. We will similarly utilize the arguments in the various Economic Reports of the President and in ROS to create a series of precise predictions about the alleged positive impacts of moves towards budget balance.

Then, we will present what actually happened during the 1990s in the wake of the decisions of 1993 and 1997 that led to reductions in the federal budget deficit. The flow of funds accounts of the Federal Reserve System will be utilized to track government borrowing (and negative borrowing). Various estimates of real interest rates will be presented including some based on expectations of inflation as evidenced by the blue-chip economic forecasters' predictions. The net borrowing, interest rates and investment decision-making will be compared to see if the Rubin-Greenspan prediction was borne out by the historical experience of the Clinton years.

We will then turn to the private sector and the foreign sector. We will compare the reduction in government borrowing to the increase in private borrowing and the increase in borrowing from abroad.

All of this evidence will be presented in comparison with the decade of the 1980s when there was an allegedly "irresponsible" increase in the budget deficit, which supposedly led to serious problems with long run economic growth and a long run increase in international indebtedness.

Finally we conclude with a statement as to what the actual experience of the US economy during the 1990s tells us about the validity of what the supporters of the current President Bush deride as "Rubinism."

The Famous December 1992 Meeting Between Bill Clinton and Alan Greenspan

Woodward (1995, 2001) gives a brief but powerful glimpse of perhaps the most significant meeting that shaped the economic agenda for the Clinton Presidency. According to Woodward's account, Greenspan gave the President-elect an extremely important economics lesson at that meeting. Here is what Woodward (2001) reported Greenspan said.

Perhaps no single overall economic event could do more to help the economy … than a drop in the long-term interest rates … The Fed didn't control them. But credible action to reduce the federal deficit would force long-term interest rates to drop, as the markets slowly moved away from the expectation of inevitable inflation. Business borrowing costs, mortgages and consumer credit costs would go down … Establishing credibility about deficit reduction with the markets would lower rates and could trigger a series of payoffs for the economy. … Lower long-term rates would galvanize demand for new mortgages, refinancing at more favorable rates and more consumer loans. This would in turn result in increased consumer spending, which would expand the economy.

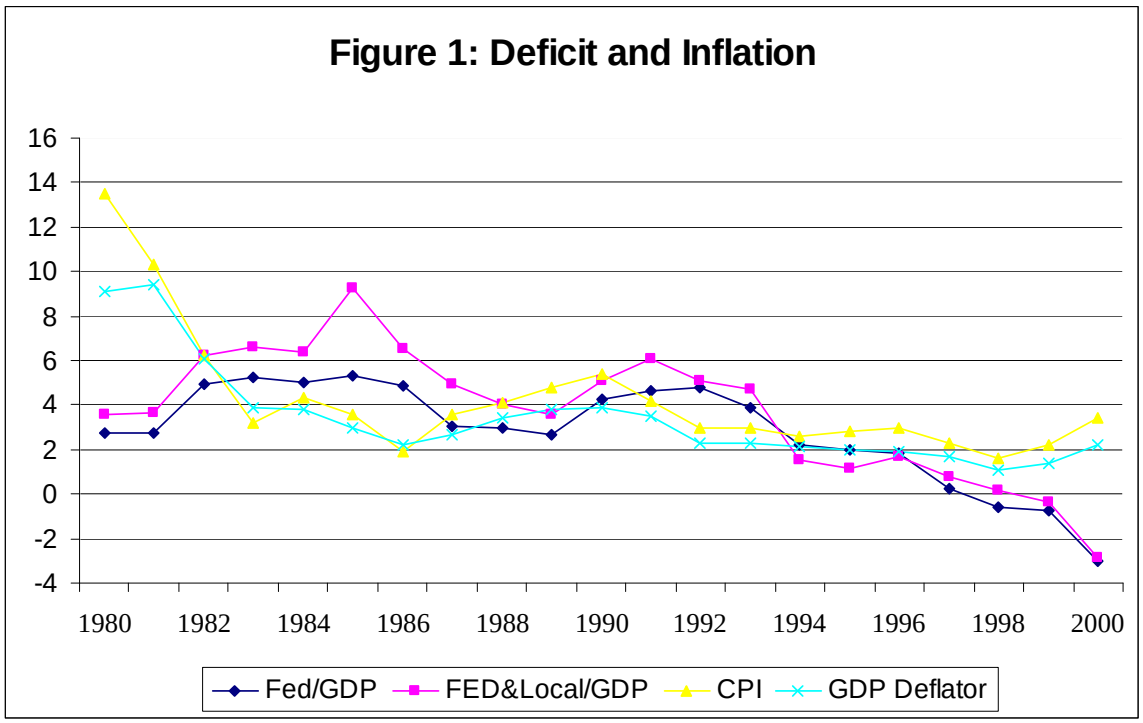
Greenspan's reasoning as to why long-term interest rates were so high and why Fed policy could not lower them is also worth repeating:

> The long-term rates … were an unusual 3 to 4 percent higher than the short-term fed funds rate, at about 7 percent. The gap between the short-term rate and the long-term rate... was an inflation premium being paid for one simple reason. The lenders of long-term money expected the federal deficit to continue to grow and explode. They had good reason, given the double-digit inflation of the late 1970s and the expanding budget deficits under Reagan. They demanded the premium because of the expectation of new inflation.[6]

From this short presentation flows all of the arguments reiterated many times that the good growth in the economy during the late 1990s was caused at least in part by "fiscal discipline." In other words, there seems to be a large slice of the "conventional wisdom" that suggests that the economy was successful between 1995 and 2000 (or perhaps all the way till May, 2001) because President Clinton heeded Greenspan's advice and Clinton, in turn, got Congress to go along with a credible deficit-reduction plan.

But how good was this "economics lesson" as Woodward calls it that Greenspan gave to Clinton? First of all, the historical evidence presented is woefully incomplete. Consider Greenspan's explanation of why an alleged inflation premium had to be paid on long-term borrowing. He blamed that on "the double-digit inflation of the late 1970s and the expanding budget deficits under Reagan" Since lenders cannot force businesses and individuals to borrow from them, another part of this issue is why borrowers were willing to pay these high long-term interest rates. How do the two events Greenspan alluded to constitute reasons for lenders to demand and borrowers to pay an inflation premium?

The double-digit inflation of the 1970s occurred before the expanding budget deficits under Reagan. They were associated with dramatic increases in oil and energy prices. During the 1980s, by contrast, oil and energy prices were falling relative to prices in general. Furthermore, there was virtually no acceleration of inflation as a result of the Reagan deficits. As Figure 1 shows[7], the rate of inflation was 4.3 % or lower from 1984 through 1988 despite the fact that deficits remained at high levels as a percentage of GDP until 1986. After reaching rates above 5.5% per year between 1973 and 1982, inflation was below 5% from 1983 through 1991 (with a one year spike at 5.4% in 1990) after which it fell below 3%.[8]



What could Greenspan have been talking about?

A clue can be found in a different version of the same conversation, described by the same author, Woodward (1995). In this description of the "economics lesson" the historical evidence is presented differently: "The double-digit inflation of the late 1970s *had been induced by the budget deficits from the Vietnam War*."[9] This can help explain the connection between the experience of double-digit inflation in the 1970s and the presumed impact of the Reagan deficits. Adding this version of the discussion to the one in Woodward (2001) leads to the following analysis:

1) The budget deficits from the Vietnam War (1966-68) had led to inflation in the late 1970s.

2) Decision-makers in 1993, 94, etc. would look at the Reagan deficits of the 1980s and reason that by the end of the 1990s, these budget deficits would have produced another round of double-digit inflation.

3) Thus, they were insisting on a relatively high inflation premium.

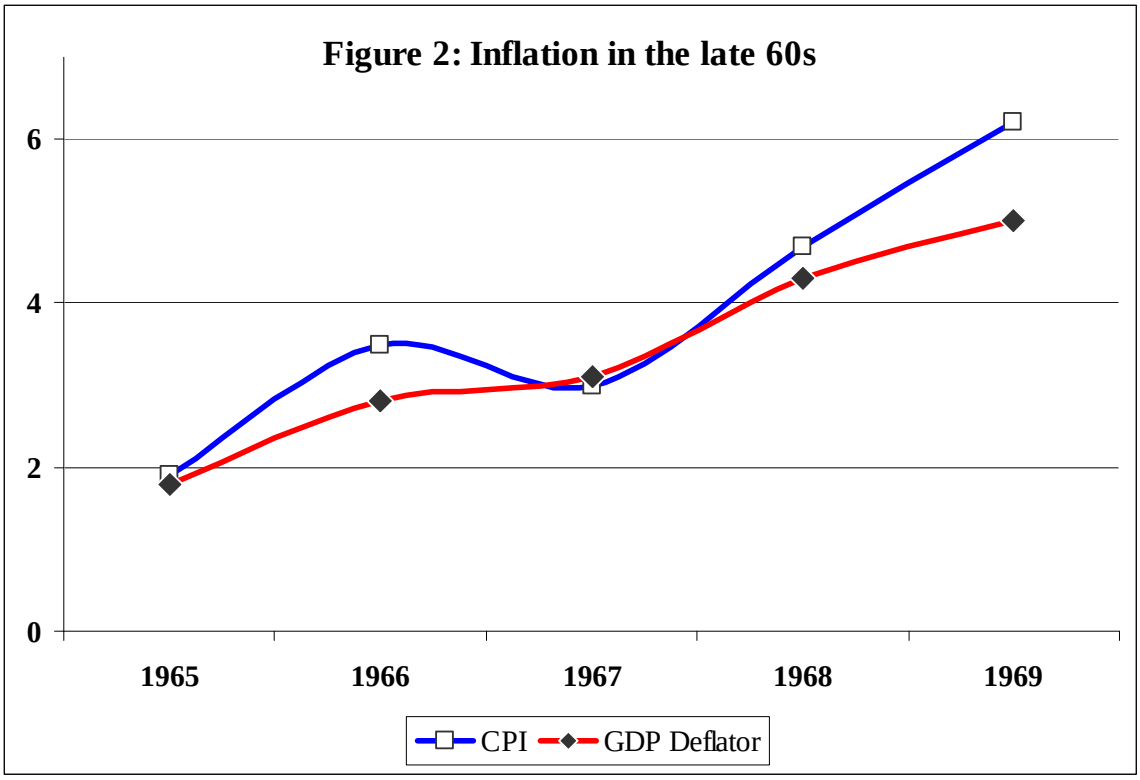
This interpretation is consistent with ROS' argument developed in two papers[10] and reiterated forcefully in Rubin and Weisberg (2001). This argument asks the reader to depart from the traditional short run analysis of the alleged effect of budget deficits – that the extra government borrowing leads to a rise in interest rates which crowds out some private borrowing and thus reduces private investment. Instead, ROS assert that expectations of future deficits will create expectations of future inflation. To take the Greenspan lesson (Woodward 1995) as an anticipation of ROS' conclusions, the experience of the late 1960s budget deficits and the subsequent double-digit inflation of the 1970s created a memory that led to a series of inflationary expectations for the 1990s which were triggered by the Reagan-Bush deficits of the 1980s.

How Good Was the Economics Lesson from Alan Greenspan?

It is hard to know where to begin in making sense of this analysis. On a most basic level, if decision-makers in 1993, etc. were really "predicting" double-digit inflation by the end of the decade, then a measly 7.67% interest rate on 30-year Treasury Bonds (7.01% on 10-year Treasuries) would hardly compensate investors for such a run-up. Second, if that were the impact of the budget deficits that the economy experienced in the 1980s and early 1990s, why didn't that show up in the Blue Chip consensus Economic Forecasts in 1991, 92 and 93? It is true that expectations are formulated either explicitly or implicitly in the minds of thousands of economic decision-makers and are thus very difficult to track accurately. Nevertheless, it is possible to discern at least some of the influences on expectations in the various official forecasts made by private and public entities. According to the Congressional Budget Office, the blue-chip two-year forecast for inflation in the Consumer Price Index was 4.4 percent in 1991, 3.5 percent in 1992, and 3.4 percent in 1993.[11] These forecasts are consistent with the spread between long term and short term interest rates that existed at the time but not with predictions of a re-run of the "double-digit inflation" of the 1970s.[12]

Let us now consider the crucial element that was omitted from the discussion in Woodward (2001) but which had been present in Woodward (1995). What was the impact of the budget deficits from the Vietnam War?

As Figure 2 shows, the CPI rose at a rate of 1.9% in 1965, 3.5 % in 1966, 3.0 % in 1967, 4.7% in 1968 and 6.2% in 1969. (The latter increase occurred, by the way, despite rather significant increases in interest rates and a significant fiscal swing in the federal budget from a deficit of 2.9% of GDP in fiscal 1968 to a surplus of .3% of GDP in the next fiscal year – the first half of which was in 1968.)[13]



For the next three fiscal years, the budget deficit never got above 2.2% of GDP. Meanwhile, inflation declined from 1970 through 1972 until it exploded in 1973 and 74 in response to the first oil price spike. We find it totally unpersuasive to suggest that the budget deficits of 1966-69 had created the conditions for the inflation experience of 1973-75 (after which inflation again declined until 1979). There are many more significant candidates for an explanation – not the least of which is the international price of oil. Thus, if we believe that expectations are being formed based on experience, let us give credit to the economic decision-makers acting on these expectations. We do not believe that any economic decision makers looking back on the economic history of the US between 1965 and 1992 would have made the judgment that Chairman Greenspan was reporting to President-elect Clinton.

The Clinton Administration's Own View

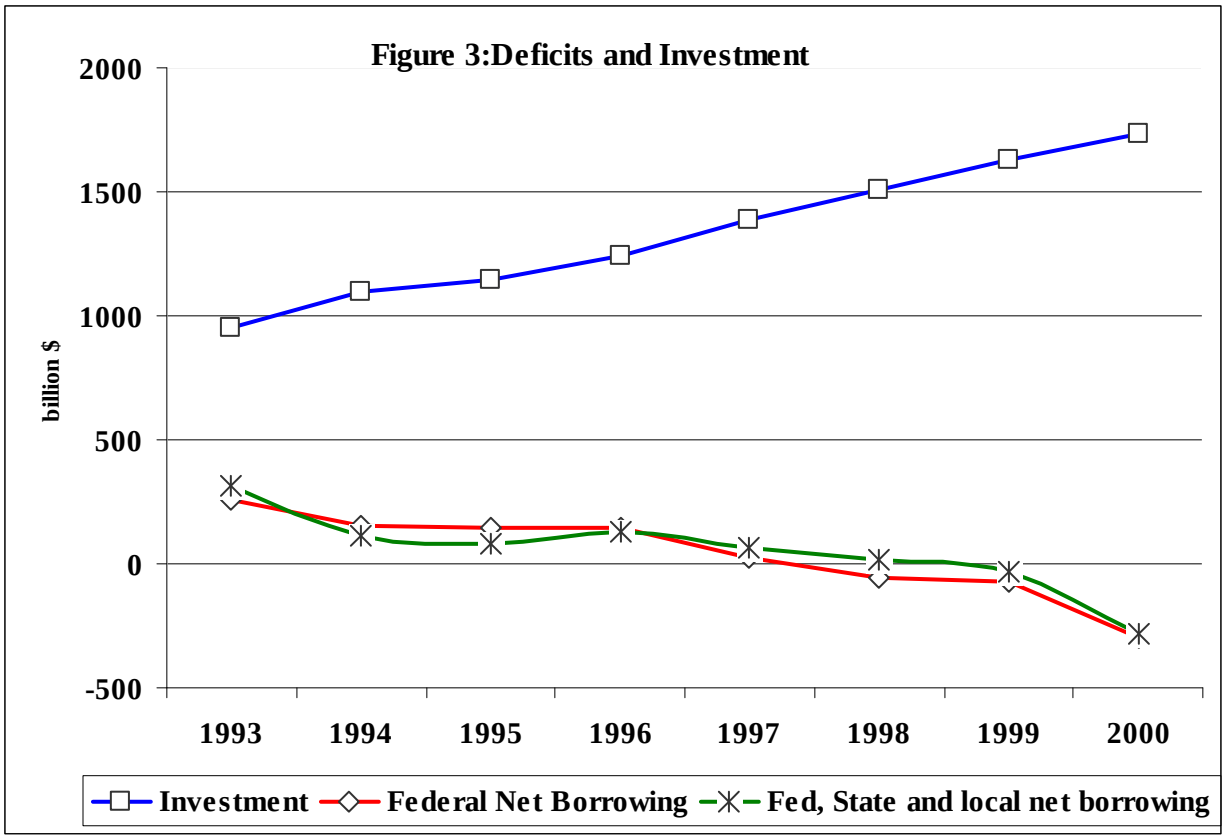
Whatever we might think of the reasoning Greenspan used in convincing Clinton that deficit reduction was an essential policy goal, it still remains a fact that deficits were reduced and (briefly) turned into surpluses over the eight years of the Clinton Presidency. In January of 2001, the Council of Economic Advisers made the following argument:

The Omnibus Budget and Reconciliation Act of 1993 was the right policy package at the right time … long-term interest rates remained stubbornly high. … Bond yields were being predictably affected by the forces of supply and demand: the Federal Government was set to run a deficit of almost $300 billion … With an oversupply of government bonds and the prospect of even more to come, bond and stock prices were depressed, and yields were correspondingly high…

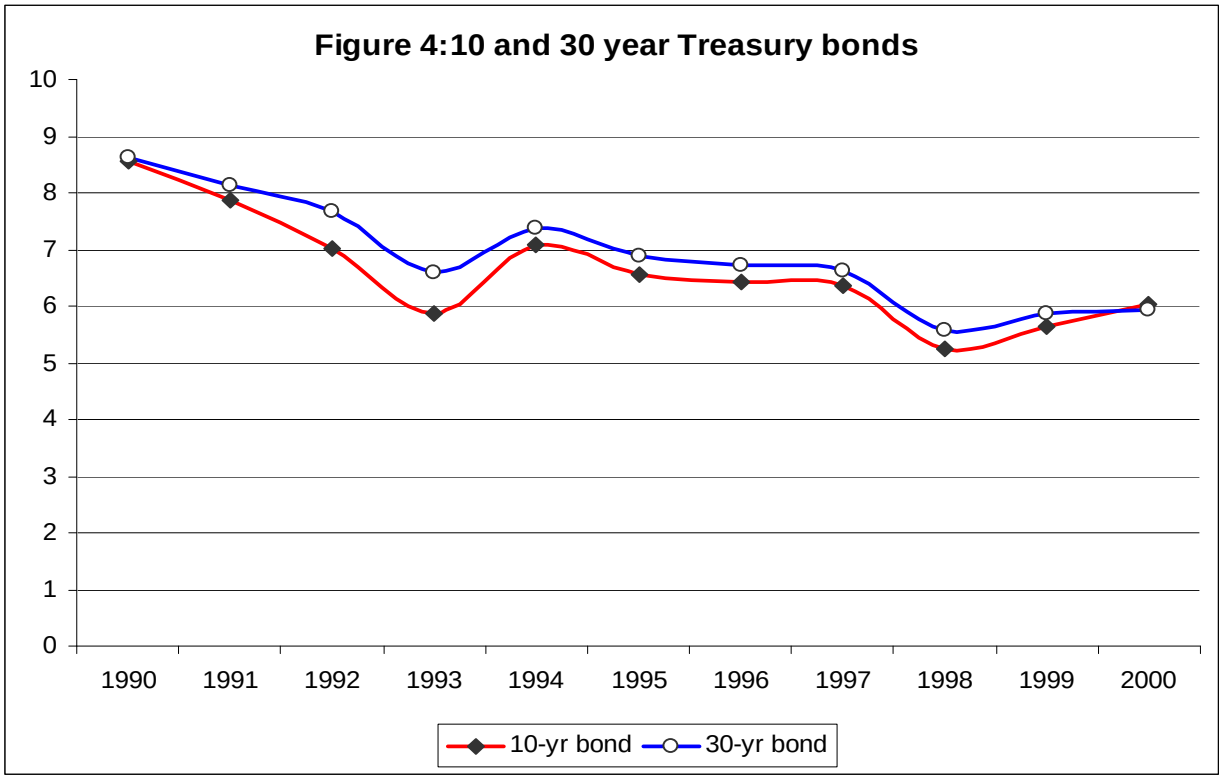
> In 1992, the new Administration was elected on a promise to turn the deficits around. After a tough political battle in 1993, the Administration was able to deliver on that promise … The markets responded quickly to this serious effort to address the deficit by lowering expectations of future inflation, and long-term interest rates accordingly fell….

> As economic growth and further restraints on spending … turned the huge deficits into surpluses, a new fiscal environment emerged. The 10-year Treasury rate fell below 6 percent in 1998 and 1999… that rate stood at only 5.7 percent in November 2000. …
>
> Ultimately, the combination of falling prices for investment goods and reduced interest costs stimulated dramatic growth in investment… investment grew 13 percent per year between the first quarter of 1993 and the third quarter of 2000.
>
> The result has been a virtuous cycle, in which the right policies in 1993 kicked off a chain reaction of smaller deficits, lower costs of capital, higher investment, increased technology in the workplace, and faster economic growth. [14]

As Figure 3 shows, this is a powerful story. There is a clear and inverse relationship between the government deficit (federal, state and local as well) and investment from 1993 onward.[15]



At the same time, as Figure 4 shows, there is a clear and consistent decrease in nominal long-term rates in the 1990s.



However, the evidence presented in this brief statement focuses exclusively on nominal values. We are told about the various interest rates in nominal not real terms. We are told about absolute increases in nominal investment but not about the relationship between investment and GDP. We are also told nothing about the direction of causation. The rise in investment might have increased incomes so much that deficits fell as a result of those increases.

The major reason budget deficits are considered to have negative consequences for economic growth is because the extra government borrowing "crowds out" some private borrowing from the credit markets. With only a certain amount of national savings, when government entities increase borrowing that allegedly causes interest rates (the cost of borrowing) to increase. The argument concludes with the assertion that the rise in interest rates reduces private investment. The reduced private investment, in turn, reduces economic growth. Reversing this problem with lowered deficits and ultimately surpluses allegedly creates the virtuous cycle that the Council of Economic Advisers referred to in the post-1993 period. Instead of crowding out private borrowing, the reduced deficits and ultimately surpluses involve "making room" for more private borrowing by lowering interest rates.[16]

On the Validity of the Arguments

How do we determine whether this explanation is accurate or not? The first thing we need to do is to understand what we need to measure. Absolute numbers in economic analysis usually mean nothing. If we say that the budget deficit is $300 billion in a given year we have no idea whether that is a dangerously large deficit or a small relatively manageable one. It is only after we compare it to Gross Domestic Product that we get an idea of its impact. So the first thing we have to do is to measure the budget deficit as a percentage of GDP. Though usually all attention is focused on the amount of federal borrowing, since states and localities often do significant amounts of borrowing for capital projects, it is important to also show the borrowing by both levels of government – again, as a percentage of GDP.

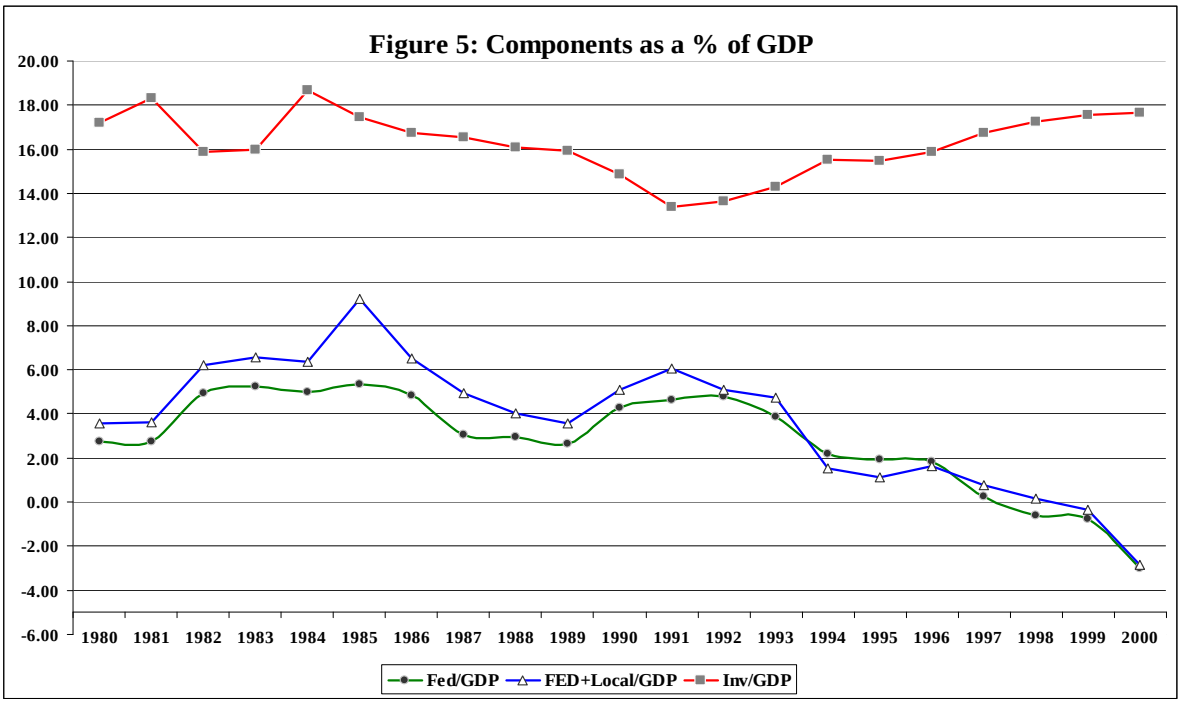
The next step in the argument is the alleged impact on interest rates. Since Alan Greenspan focused his discussion on the long-term interest rate (usually the 10-year Treasury bond), we should too. However, unlike the Economic Report of the President, we believe that information that "the 10-year Treasury rate fell below 6 percent in 1998" leaves out some crucial information – what happened to

inflation at that time? The real burden of interest rates are the actual dollars you must pay in interest as the loan matures less the decline in the burden of repaying the principal as a result of inflation. Thus, after the fact, the real burden of repaying a loan with interest is the nominal (or face value) interest rate less the rate of inflation during the life of the loan. We could call that the ex-post real interest rate.

Since borrowers and lenders actually do not know the inflation rate that will prevail over the life of the loan, they set the nominal interest rate, as Greenspan told Clinton, with an inflation premium. We can approximate that by subtracting some predicted rate of inflation (we're using the blue-chip two-year economic forecast reported by the Congressional Budget Office every year) from the nominal rate of interest. We could call that the ex-ante real interest rate. If crowding out were to occur, we should see rising budget deficits as a percentage of GDP being associated with rising real interest rates.[17] If "making room" were to occur we should see falling budget deficits (and rising surpluses) as a percentage of GDP being associated with falling real interest rates.

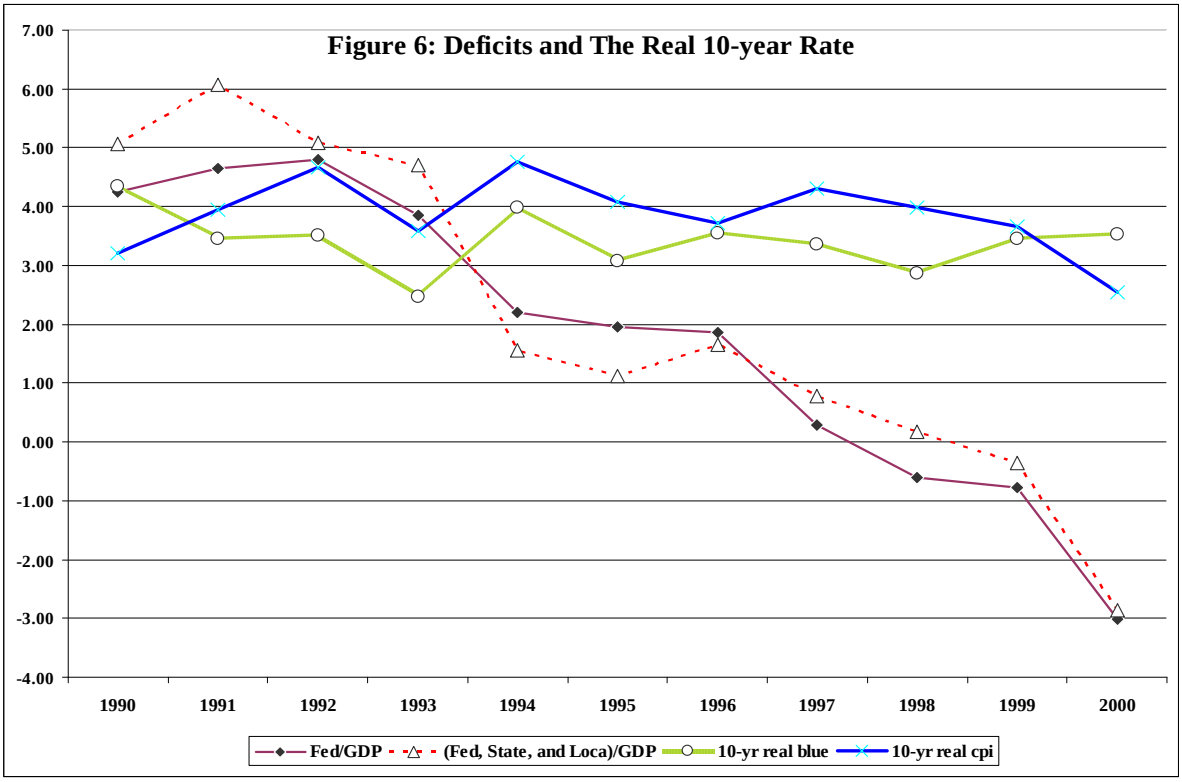
Finally, to see if the long-term interest rate has a major impact on investment decisions, we should not be just looking at changes in the absolute level of investment but at the ratio of investment to GDP. It is only when investment rises as a percentage of GDP that it plays a dynamic role of driving both total demand and economic growth as well as improving the productivity outlook. To really see the benefits of fiscal discipline as predicted by Greenspan and as claimed by the Clinton Council of Economic Advisers, we would have to see the declining deficits of the 1990s and the brief experience with surpluses at the end of the decade associated with declining real interest rates and rising investment as a percentage of GDP.

As Figure 5 shows, the reduction in the deficit as a percentage of GDP is accompanied by an increase in investment as a percentage of GDP. However, the dramatic decrease in the deficit as a percentage of GDP starting in 1993 (achieving a federal surplus from 1998 to 2000), is not accompanied by an equally significant increase in investment as a percentage of GDP. In other words, although both the deficit and investment as percentage of GDP moved in opposite directions, as "Rubinism" would predict, there is an important difference in the magnitude of their respective changes. In 1993, the federal deficit was 3.85% of GDP (4.71% including state and local). In 2000, this number was -3.01% or a surplus (-2.86 including state and local). This deficit to surplus swing from 1993 to 2000 represents a 178 per cent change (160 per cent including state and local borrowing). However, for the same period, investment as a percentage of GDP went from 14.3% to 17.7%, or a 23.5 per cent change.[18]



Furthermore, this increase in investment as a percentage of GDP occurs while the real long-term rate is not changing significantly. As Figure 6 shows, the real long-term interest rate seems not to

respond to the significant reduction in the deficit as a percentage of GDP. The real long-term rate (adjusted with the blue-chip two-year forecast) actually increases from a low 2.47% in 1993, to a high of 3.53% in 2000.



The obvious increase in investment as a percentage of GDP (as the deficit as a percentage of GDP is decreasing) seems to validate Rubinism. However, it is not the direction but the actual magnitude of changes what matters. Here is where we see the limitations in the predictions, since the expected result, given the significant reduction of the deficit as a percentage of GDP, is a significant jump in investment as a percentage of GDP. However, this was not the case.

Furthermore, although there is an increase in investment as a percentage of GDP, it is difficult to argue that this increase was a reaction to lower real long-term rates, as Rubinism suggests will happen following deficit reduction, since the real long-term rate actually increased from 1993 to 2000.[19]

The alternative explanation is actually very straightforward. It involves the key to the theoretical alternative to crowding out, known as "crowding in." There are many versions of this approach but the one we would like to propose is the idea the in any given year, the investment decision making process is not solely dependent on the cost of capital as measured by the real rate of interest. Just as important, perhaps more important, is the expected rate of profit to be earned on any given investment; expectations, particularly profitability expectations with time horizons as short as 18 months and as long as 5 years, are quite volatile. It is the major reason why investment is a less stable component of aggregate demand than either government purchases or consumption expenditures. Nevertheless, it is pretty much a truism in economics that the better the "business climate" the more positive will be expectations about the profitability of contemplated investment projects.

Turning to our discussion of the period from 1995 to 2000, as real (ex ante) long term interest rates drifted upwards (despite the decline in nominal rates) and real (ex post) rates stayed the same until 2000, we can safely surmise that expected profitability rose more than did expected inflation-based real interest rates. Here is the key to the concept of "crowding in" as an alternative prediction to the crowding out idea that relates budget deficits to declines in investment spending. As Table 1 shows, even if there are significant budget deficits (such as in the 1980s) and even if they were to cause real interest rates to rise (which did not occur after 1984), if expected profitability were to rise, say, one percent for every

increase in interest rates of .5 percent, then despite the rise in interest rates we should expect to see an increase in investment.[20]

Table 1: Deficits and Real Long-term Rates in the 1980s

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Fed/GDP	2.77	2.73	4.95	5.23	5.01	5.35	4.84	3.04	2.96	2.67
FED and Local/GDP	3.57	3.62	6.24	6.57	6.35	9.22	6.50	4.94	4.02	3.58
Real 10-yr (CPI adjusted)	-2.04	3.61	6.8	7.9	8.14	7.02	5.78	4.79	4.75	3.69
Real 10-yr (Blue Chip forecast)	1.36	3.51	5.80	6.20	7.14	6.22	3.88	4.69	4.55	3.79

Private Sector Borrowing

The most significant refutation of the predictions of the Greenspan/ROS argument involves the fact that though government borrowing fell dramatically during the 1990s, national savings actually fell compared to the previous decade because the increase in private sector borrowing as a percentage of GDP more than compensated for the decline in government borrowing. Table 2 shows all four borrowing groups' (federal and state/local governments as well as non-financial businesses and households) activities as a percentage of GDP as well as the net borrowing from overseas by the United States economy. It is significant that despite much talk about the problem of the "twin deficits" in the 1980s,[21] in fact the 1980s required much less borrowing from abroad than did the late 1990s.

Table 2: Average Borrowing as a Percentage of GDP[22]

Years	Fed/GDP	Fed and Local/GDP	Household/GDP	Bus/GDP	National Borrowing/GDP	International/GDP
1980-91	6.32	8.58	7.47	4.82	**20.87**	2.14
1991-00	3.18	3.9	11.48	6.99	**22.37**	6.5

It is true that government borrowing declined dramatically between the two decades. However, private sector borrowing grew more than enough to actually increase the ratio of domestic borrowing to GDP during the Clinton Administration. This coupled with the rise in the percentage of GDP devoted to consumption and the parallel reduction in private and business savings[23] led inexorably to the rise in international borrowing. Now we can see why despite the decline in government borrowing, real interest rates did not fall as the Greenspan "economics lesson" predicted. Absent the international borrowing it is clear that those rates would have risen significantly.

Conclusion

We believe the experience of inflation in the 1970s disabused people of money illusion when it came to interest rates. With high rates of inflation, people were extremely interested in borrowing to buy assets (real estate in particular -- but it applied to businesses as well for equipment and plant purchases), despite virtually astronomical nominal interest rates. This is the only explanation for the fact that even in 1978 and 1979 with inflation rising again after having risen dramatically in 1973 and 1974,[24] the rise in nominal interest rates were no deterrence to investors.[25]

In the early 1980s, the decline in the rate of inflation forced many to discover that borrowing at high interest rates when inflationary expectations are high can lead to very severe dislocations when the predictions about the future do not come true. That was why so many farmers (and other small businesses) lost in the early 1980s because they had borrowed when interest and inflation were both high. The best evidence for this is the Business Failure rate. Between the end of the 1975 recession and

1980, the rate stayed below 40 per 10,000 enterprises and then rose to 110 per 10,000 enterprises in 1983, the year the 1981 recession ended. After falling slightly in 1984 to 107, it rose in 1985 and 1986 (note these were 2 and 3 years after the recovery began) and fell only to 102 in 1987 and 65 in 1989 before beginning to rise as a result of the 1990 recession and sluggish recovery. Before these years, the business failure rate had always followed a pattern of spiking in recession years and falling during subsequent recoveries.[26]

We also believe the experiences of the 1970s and the 1980s would have brought home to business decision-makers the folly of making investment and borrowing decisions based on nominal interest rates. We believe this applies especially to the business sector where the long-term interest rate supposedly has the main impact on decision-making. Thus, we believe that most financial officers in corporations contemplating investment decisions would have attempted to make predictions about inflation when they contemplated the cost of capital.

Obviously it is impossible to know for certain what was in the collective minds of the "aggregate" of decision-makers during the years 1996-2000, but we would argue that the burden of proof is on those who wish to suggest that there was serious money illusion at work.

Furthermore, we strongly disagree with the argument that there was a significant increase in net national savings in 2000, the last year of the Clinton Presidency, as opposed to 1992 the last year before Clinton took office. (Furman 2005)

Following this logic, the policy of deficit reduction and ultimately a surplus was an effective policy because it led to the opposite effect from crowding-out.[27] Thus the policy must be celebrated as the central pillar in the Clinton economic legacy. This is the typical argument presented in a principle of macroeconomic course, with the following two identities[28]:

NATIONAL SAVINGS = PRIVATE SAVINGS + PUBLIC SAVINGS

INVESTMENT = SAVINGS + FOREIGN BORROWING

According to Furman (2005), this is science and there is no need to look at the data! Although not science, we have no quarrels with these identities.[29] We do however have a problem with the assertion that data is not significant. In fact, in all science the desire is to test specific hypotheses against reality (in Economics that reality often comes in the form of data). Our goal in the paper was to attempt a test of the Greenspan predictions in his "economics lesson" with President-elect Clinton as well as the assertions quoted from the Economic Report of the President.[30] Unlike the identities utilized by Dr. Furman, the Greenspan/Clinton scientific prediction was that reducing the budget deficit would generate large increases in national savings, reduce long term interest rates, and then stimulate a significant increase in productive investment.

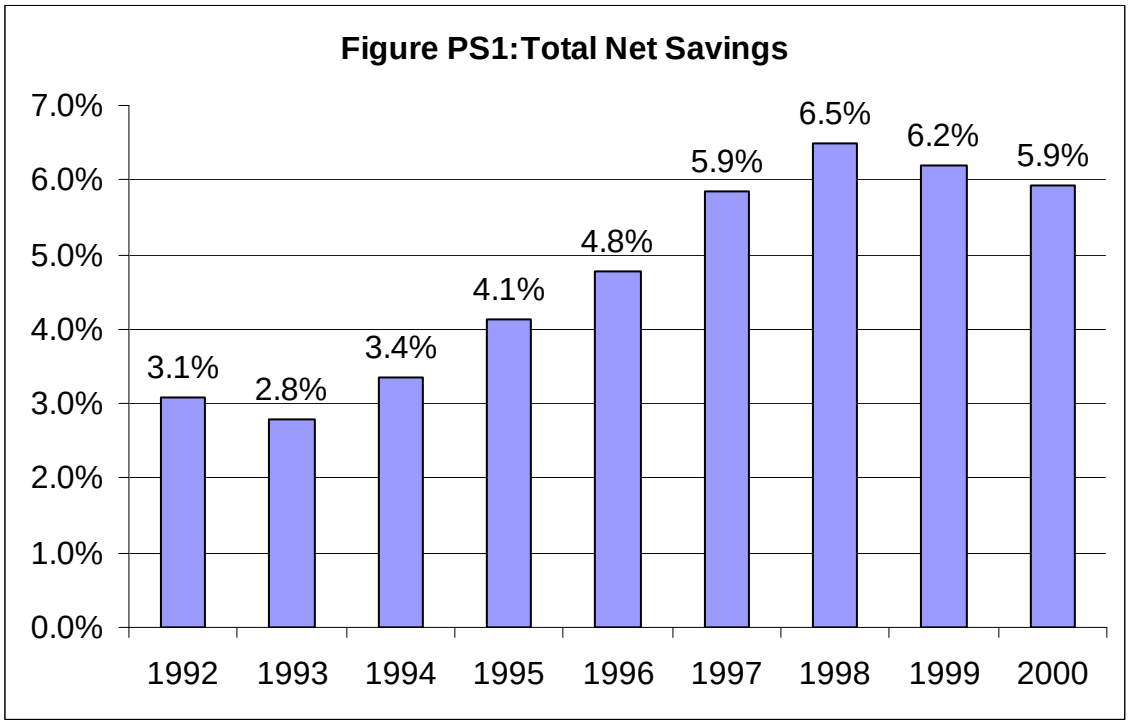
Furthermore, data sources are crucial. Because income is a flow from which savings are generated, and that savings are generated nationally and from abroad, we feel it remains more appropriate to rely on the Flow of Funds Accounts (FOFA) to measure the impact of the policy changes on national savings. In contrast, Furman's reply relies on the National Income and Product Accounts (NIPA) because according to Furman (2005), NIPA data "*are much more applicable to macro questions, like the determination of savings, investment, growth, etc."*[31] Interestingly, from no need to look at data, we have now an argument regarding the relevance of data sources.

We disagree with Furman's (2005) observations about the NIPA data. First, NIPA and FOFA have different scopes. NIPA focus on activity related to current production and income. Unlike NIPA, FOFA include financial flows among the various sectors of the economy encompassing, as explained by the Board of Governors of the FED[32], all net changes in financial claims or liabilities that result from 1- current transactions, 2- decisions to change the composition of financial assets and liabilities, and most important 3- the allocation of saving between investment in physical capital and investment in financial capital.

Leaving aside our dispute about the appropriate data to use to test the Greenspan/Clinton assertions, Furman's (2005) position is a reiteration of those assertions, namely that increased investment followed a decrease in interest rates which had been caused by a savings boom (with a decrease in international borrowing as a byproduct).[33] Their argument is in clear contradiction to ours. Furthermore, Furman (2005) claims that his model not only shows these results but in the absence of the

policies implemented under Clinton, the outcome would have been a lower GDP, savings, and investment, forcing us to confront a higher trade deficit, interest rates and service to the national debt.[34]

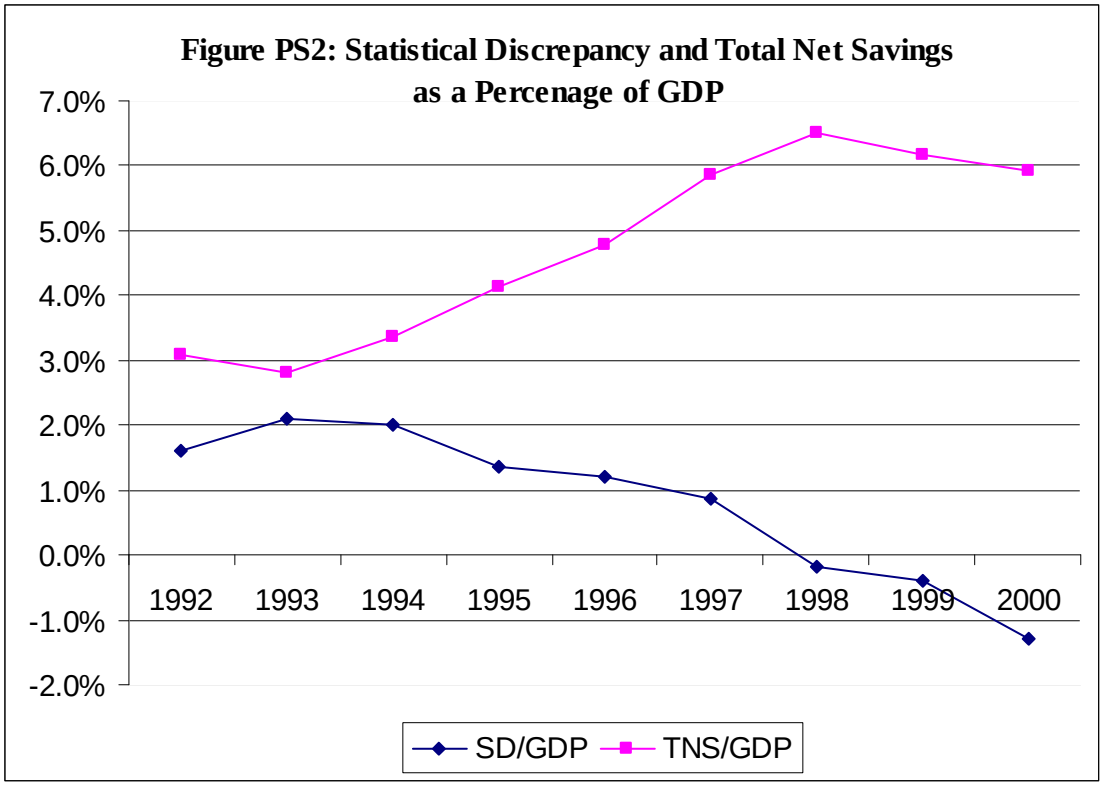
The centerpiece of Furman's (2005) argument rests on evidence that net national savings went from 3.1% of GDP in 1992 to 5.8% GDP in 2000, with NIPA as the source of the data. Although we think it should be clear that NIPA is not the best avenue, we will for the sake of argument explore that presentation further. Using the NIPA one finds that their argument is correct, yet selective. In other words, how can you judge a two term administration with two data points? We rather recommend looking at the entire span of the years that President Clinton was in office. As Figure PS1 shows, although it is true that the total net savings as a percentage of GDP (using NIPA) were higher in 2000 relative to 1992, it is also true that that the 2000 figure is virtually equal to the level in 1997. In other words, by the time President Clinton was ending his second term net savings (using NIPA) were already declining. And please note these were the years that the deficit actually turned to surplus, the years where "making room" should have been occurring.



There is a much more significant limitation to the use of NIPA. A common yet less discussed fact regarding NIPA relates to the Statistical Discrepancy Account (SDA) which plays an important role in the transformation of GDP to National Income.[35]

In theory National Income and GDP should be equal except for the Capital Consumption Allowance that distinguishes Gross from Net Domestic Product. The conventional explanation for the need for an SDA is the fact that individuals will hide income in an effort to pay fewer taxes. Firms have no real incentive to "hide" production and thus the NIPA output side tends to be larger than the income side, resulting in a positive SDA. As Baker (2005) argues, the stock bubble of the 1990s created the incentive for individuals to get a portion of their wages or salaries in the form of stock options. Although money generated from capital gains on stock options should not be measured as income, the Bureau of Economic Analysis is unable to distinguish "compensation" that corporate employees take by cashing in stock options from "regular" compensation. Thus, in the context of a stock market boom, income gets overstated more than compensating for the "hiding" of income that routinely occurs. Since savings is defined as income minus consumption, any error in the measurement of income would be replicated in the measurement of savings. Starting in 1995, because of the impact of the stock market boom, we note a clear decline in the SDA which lasted until 2002. In other words, for that period NI was increasing relative to NNP. In 1998 the SDA even turned negative with NI now exceeding NNP as a result of the stock market bubble.[36]

As Table PS2 shows, fully 2% of the NIPA version of the 3.5% rise in total net savings between 1993 and 1998 is accounted for by a decline in the SDA. As soon as the predicted increases in net savings emerge, SDA starts to decline ultimately turning negative.



In other words, over half of the increase in total net savings that is credited to the Clinton policies is in fact the outcome of measurement error as illustrated by the SDA. Please note, this problem only shows up in the NIPA version of the presentation of the evidence. Thus, using FOFA, as we did, is a superior approach. Therefore, we think, our results are stronger than those of Furman (2005).

We can only conclude based on data from the experience of the US economy during this period of extraordinary "fiscal discipline" that the evidence does not validate the predictions of both Alan Greenspan and the ROS research. Instead, the conclusions of Stiglitz (2003) and Pollin (2003) seem more supported by that experience. None of this should be taken as evidence that the extraordinary borrowing by government going on today will have no negative consequences for the long run economic health of the US economy. The fact that the trade deficit continues at a high ratio to GDP despite the recent decline in the international value of the dollar coupled with the fact that the ratio of international borrowing to GDP remains significant is definitely cause for concern. Nevertheless, the specific arguments advanced by Robert Rubin and others that the prosperity of the 1990s was in part "bought" by government fiscal discipline appears not to have been borne out by the facts.

Endnotes

[1]

Table 3: Various Indicators (%) under different Administrations

	Kennedy-Johnson 1961-68	Nixon-Ford 1969-76	Carter 1977-80	Reagan-Bush 1981-92	Clinton 1993-00
GDP real growth	4.8	2.7	3.4	2.9	3.7
Unemployment rate	4.8	5.8	6.5	7.1	5.2
Productivity growth (non-farm bus. Sector)	3.4	2.1	0.5	1.7	1.9
Inflation rate (CPI)	2.0	6.4	9.7	4.6	2.6

Source: Pollin (2003): 35.

[2] All data from the Economic Report of the President (2004), (henceforth, ERP). The rate of growth of real GDP from p. 287. Productivity data from p. 343. Unemployment data from p. 334. Inflation (CPI) data from p. 358.

[3] The celebration of the "fiscal discipline" of the Clinton Administration has become part of the Democrats' critique of the administration of President George W. Bush. He has been criticized because he inherited a surplus and allegedly frittered it away into a projected $2.1 trillion deficit over the next 6 years according to January 2005 CBO projections. Supporters of the Administration respond in two different and somewhat contradictory ways. First they rightly point out that there was a recession and a war which both began during 2001. These created unexpected requirements to, first, cut taxes to fight the recession and, second, raise spending to prosecute the war on terrorism. This argument seems to be claiming that the deficits may be unfortunate for the economy but they are a "necessary evil." However, many supporters of the current administration have actually argued that deficits are not as serious a problem as the critics claim. With assertions like "Reagan proved deficits don't matter," many have dismissed the criticism of current deficits as "Rubinism" and argued that in the context of an economy suffering from a recession and sluggish growth, deficits help rather than harm the economy.

[4] See Stiglitz (2003): 41-55.

[5] "… to assume that lower interest rates will necessarily follow when the federal government reduces its demand for credit, one must also assume that other factors – including the deregulation of financial markets and the corresponding explosion in speculative financial activity, … will not significantly influence interest rates." Pollin (2003): 71. See also, Ibid: 39-40.

[6] Woodward (2001) pp. 95-96. President Clinton makes no mention of the content of this meeting in his autobiography (See Clinton, [2004]: 451). When he discusses his decision to focus on budget deficit reduction (458-463) he makes no mention of any advice received from Greenspan. However, in explaining why he was apparently, in the words of some supporters "sacrificing everything I believed in under the influence of people who weren't part of our campaign and didn't care about the ordinary Americans who had elected me." Clinton's view was clearly that "...the deficit was killing the economy and that if we didn't fix it, there would be no economic recovery..." (462). This is consistent with what Greenspan said but Greenspan was not as definite. According to the record, the economy was already well on its way to recovery (after a negative .2% growth rate in real GDP during 1991, the four quarters of 1992 experienced significant increases in the rate of growth (4.2% in the first quarter, 3.9% in the second quarter, 4% in the third quarter, and 4.5% in the fourth quarter [www.bea.gov]) while the rate of unemployment peaked at 7.6% in the third quarter of 1992 and began to fall in the fourth, [it was 7.4%] and was down to 6.5% by the end of 1993 [www.bls.gov]). Joseph Stiglitz asserts, "…had we had less deficit reduction, we would still eventually have had a recovery." (Ibid: 50). He rejects the idea that deficit reduction was the key element in the prosperity of the 1990s.

[7] Data sources for all figures are the Bureau of Economic Analysis (http://www.bea.gov), the Bureau of Labor Statistics (http://www.bls.gov), and the Flow of Funds Accounts of the Federal Reserve System (http://www.federalreserve.gov).

[8] CPI inflation from ERP: 358. The inflation rate for the GDP deflator is from Ibid: 295. The deficit/GDP ratios are from the Flow of Funds accounts of the Federal Reserve System (henceforth, FoF). It is important to utilize a ratio rather than absolute figures for budget deficits because the important issue at stake is what kind of impact the government borrowing is having on the credit markets. The absolute numbers do not tell us this.

[9] Woodward (1995): 69 (emphasis added).

[10] Rubin et al., (2004), IMF ("U.S. Fiscal Policies and Priorities for Long-Run Sustainability"), and Brookings ("Restoring Fiscal Sanity").

[11] See Blue Chip Inflation Forecasts in CBO's Economic Forecasting Record (http://www.cbo.gov/)

[12]

Table 4: Short and Long Rates Spread vs. Inflation Forecast

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
10-yr bond-Fed Funds rate spread	0.45	2.17	3.49	2.85	2.88	0.74	1.14	0.89	-0.09	0.68	-0.21
Blue Chip Inflation Forecast	4.2	4.4	3.5	3.4	3.1	3.5	2.9	3	2.4	2.2	2.5

Source: Spread data from ERP: 370. Blue Chip Forecast from CBO's Economic Forecasting Record.

We should note that there is definitely some evidence of a residual inflation fear as evidenced by the fact that even when the spread declined significantly after 1994, the forecasters kept predicting 3% inflation during each of the next three years. What is more significant, however, is that there is no increase in the inflation predictions towards anything remotely close to double-digits. In fact, even in 1992 and 1993, before the deficit cutting policies took effect, the blue chip forecasters were reducing their predicted rates of inflation.

[13] CPI data from ERP: 357. Budget deficits for fiscal years as a percentage of GDP from Ibid: 378.

[14] Economic Report of the President, 2001: 42-43

[15] Investment is in nominal values. Source, ERP: 284. Debt data from FoF.

[16] "Paying off part of the public debt makes more room for corporate debt and equity." Solow (2000): 8.

[17] The ROS approach focuses on the danger for expectations of rising sustained deficits. To test for this, the ex ante real interest rate would be significant. In our analysis we provide data for both versions of the real interest rate.

[18] For GDP and Investment data, see ERP: 284. For borrowing data, see FoF.

[19] The real rate measured either ex ante or ex post increased from 1993 because there was a significant upward spike in 1994 and subsequent reductions in the ex ante (blue chip forecasted inflation) real rate did not reach the level for 1993. However, in 2000, the ex post real rate calculated using the actual rate of increase in the CPI did fall below the level achieved in 1993. From 1996 when the deficit as a percentage of GDP began its plunge towards surplus to 2000 when the surplus was at its maximum, the real long rate measured using the blue chip forecast basically stayed the same while the ex post real rate measured by the CPI rose in 1997 and was at the same level as 1996 before falling in 2000.

[20] This might be an explanation for the fact that investment was strong in the late 1960s despite rising interest rates and even remained strong through 1979 despite exceptionally high interest rates in that year. Investment as a percentage of GDP was 15.5 in 1968, 15.9 in 1969, 19.1 in 1978 and 19.2 in 1979. The sources for Table 1 are FoF, ERP: 284. Note that the deficit as a percentage of GDP kept rising through 1985 and the combined deficit of the federal government with state and local governments was above the high level reached in 1984 for 1986. Nevertheless, beginning in 1984, the real interest rate began to fall.

[21] See Blecker (1992), Friedman (1988). For a summary, see Meeropol (2000): 132-141.

[22] All borrowing information in the table from FoF. GDP data from ERP: 284.

[23] From 1980 through 1991, personal savings as a percentage of disposable personal income averaged 8.73%. From 1991 through 2000, that average fell to 4.68%. Comparing the same time periods for undistributed corporate profits (savings in the corporate sector) as a percentage of GDP we see significant fluctuations but the averages for

the two time periods are 2.5% and 2.6%, hardly enough to compensate for the decline in personal savings (ERP: 320).

[24] CPI inflation had fallen to 5.8% in 1976 after the recession of 1975 but it climbed to 6.5% in 1977, 7.6% in 1978 and 11.3% in 1979.
[25]Investment as a percentage of GDP was at its nadir at 14.1% of GDP in 1975 rising to 16.0% in 1976, then 17.8%, 19.1% and 19.2% in 1977, 78 and 79. [Economic Report of the President, 2005: 208]. Even the increase in inflation in 1979 to 11.3% did not deter investors. It was only the big slam on the brakes administered by the FED in late 1979 and early 1980 that led to a spike in interest rates. The Federal Funds rate jumped from an average of 10-11 percent in the first three quarters of 1979 to 13.6% in the last quarter and averaged 13.4% for the year of 1980. [For 1980, see ibid: 208. For 1979 see Meeropol, Surrender, How the Clinton Administration Completed the Reagan Revolution (Ann Arbor, University Michigan Press, 1998, pbk, 2000): 73.] This led to a short recession in 1980 which caused investment as a percentage of GDP to fall briefly before rising again in 1981.

[26] [See Economic Report of the President, 2004: 395. Unfortunately this data is no longer published and the series stops in 1997.]
[27] What we refer in the paper as "making room" in reference to Robert Solow.
[28] We would like to thank Dr. Furman for gracefully facilitating us with an electronic copy of his PowerPoint presentation.
[29] This is not a mere semantic quibble. Science involves verifiable (and potentially falsifiable) statements about how the world functions. "If A happens this will cause B." The identities presented are true by definition. They are more on the order of "A and B are the same thing" rather than "A causes B." The scientific dispute about these identities involves a disagreement about the direction of causation. Abstracting from the foreign sector for the moment, ex post savings and ex post investment are always equal. However, the pre-Keynesian view (echoed by modern supply siders and, it appears, some Clinton economists) is that a rise in savings will cause a rise in investment because it lowers interest rates. Keynes on the other hand argued that a rise in savings absent a simultaneous rise in investment probably will, via the paradox of thrift, lower consumption and lead to a lower GDP. If this lower GDP lowers investment incentives, we could actually find ourselves in a downward spiral of declining investment, declining income, and declining savings. To summarize Keynes explains the identity by saying that investment decisions determine the level of savings via the investment impact on total demand while the pre-Keynesians explain the identity by saying that savings decisions determine the level of investment via the savings impact on interest rates.
[30] See above, p. 7.
[31] Personal communication from Jason Furman to Carlos F. Liard-Muriente.
[32] Guide to the Flow of Funds Accounts, Vol. 1. Washington, D.C. (2000).
[33] This line of argument is taken directly from Dr. Furman's presentation entitled "Comments on Domestic Economic Policy."
[34] We were not able to get a description of Dr. Furman's model so we are not able to replicate his analysis at this time.
[35] We have: GDP + Income receipts from the rest of the world - Income payments to the rest of the world = GNP. Then, GNP – Consumption of Fixed Capital = Net National Product , and Net National Product – the SDA = National Income
[36]Incidentally, there is no other time period in the series (1959-2004) where you get a 5-year consecutive sequence of negative SDA. As a matter of fact, there are only four other years with a negative SDA: 1960, 1961, 1963, and 1988! (See Economic Report of the President, 2006: 312) This is, of course, a historically unprecedented increase in the Price-Earnings ratio, a good proxy for the stock market bubble. The ratio reached 42 in 2000 which even exceeded its peak in the 1920s boom when it had reached 32 in 1929. There is a table at the web site of Professor Robert Schiller of Yale University at the following URL: http://www.irrationalexuberance.com/index.htm. After going to that location, find the second bullet which gives you a link to a data set and in the far right column, Professor Schiller has listed a time series of Price-Earnings ratios that go back into the 19th century.

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