

## 6. The NAIRU and fiscal and monetary policy for now and our future: some comments

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This chapter mixes something old and something new. The section dealing with NAIRU, using data up to 1997, simply updates and re-estimates the material on budget deficits and monetary policy from a number of my previous papers. I have long been denouncing NAIRU, the ‘Non-Accelerating Inflation Rate of Unemployment.’ The NAIRU is a dogma that has for too long undermined meaningful economic theory and paralysed economic policy. Here I am offering some empirical results supporting the assertions that fiscal policy can work and that correctly measured budget deficits stimulate the economy and, reinforced by monetary policy, can significantly increase employment, saving and investment and economic growth.

I have documented the decline and fall of the NAIRU on many occasions.<sup>1</sup> For over three years, inflation has been going down while unemployment has been below the commonly-supposed magic NAIRU number of 6 per cent. It has been difficult to avoid saying ‘I told you so.’

The conventional NAIRU relies upon two basic assumptions: that (a) current and past inflation in equilibrium generate equal future expected and actual inflation; and (b) that for any given time, there is a specific non-accelerating inflation rate of unemployment that generates an equilibrium. Unemployment above that rate brings continuously decreasing inflation, while unemployment below it continues to increase or accelerate inflation.

I should make clear just what the NAIRU means. Those who are not its cognoscenti, devotees or attackers may not appreciate its full implications. The NAIRU goes far beyond the old Phillips Curve, which I also never enthusiastically supported. But the Phillips Curve at least told us that we could use policy to reduce unemployment, although there was a price to be paid in terms of added inflation. By contrast the NAIRU tells us there is nothing to be done. Unemployment cannot be cut below this so-called natural or non-accelerating inflation rate of unemployment because if that attempt generates expectations of higher inflation, the old Phillips Curve, in effect, will move up. The NAIRU

paints a specter of real disaster. It is not even possible to avoid that disaster by going back to the old NAIRU, to the natural rate of unemployment, whatever it might be. Going back to the previous level just leaves the higher inflation rate in place. The way to reduce inflation then, as Milton Friedman and others tell us, is to suffer future unemployment. If expected unemployment is high expected inflation will be low. At best it is only possible to have lower unemployment now in return for higher unemployment later; otherwise the economy will be destroyed by huge and accelerating inflation.

This is a dogma that has undermined meaningful economic theory and paralysed economic policy. Fiscal policy can work and correctly measured budget deficits do stimulate the economy. Reinforced by monetary policy, they can significantly increase employment, saving and investment and economic growth. Let me offer some empirical results, old and new, supporting all of these assertions.

First, recall the two basic assumptions above: (a) current and past inflation at equilibrium generates equal future expected and actual inflation; (b) there is a particular ‘non-accelerating-inflation rate of unemployment’ at any time, which generates this equilibrium and unemployment above it brings continuously decreasing inflation while unemployment below it brings continuously increasing or accelerating inflation. I illustrate this conventional version in Table 6.1a and Table 6.1b, for the quarterly observations to 1997.4, beginning respectively in 1956 and 1976. The data begin in the first quarter of 1956 and extend to the fourth quarter of 1997. I have also done separate regressions for the period from 1976 to 1997, since there has been so much talk that perhaps the NAIRU always makes sense, but now has changed because something has changed in the economy. The estimating equation is:

$$IN_t = C + \sum b_i IN_{t-i} + \sum b_j U_{t-j} + \sum b_f FAE_{t-f} + b_p PRD_t + b_c NIXON_t + b_o NIXOFF_t \quad (6.1)$$

The lagged inflation variables,  $IN$ , run from  $t - 1$  to  $t - 20$ . The lagged unemployment variables,  $U$ , are taken from  $t$  to  $t - 4$ .  $FAE$  is a measure of inflation in food and energy prices.  $PRD$  is the difference between the rates of change of labor productivity in the non-farm business sector and segmented trends of labor productivity.  $NIXON$  is a dummy variable for the quarters of Nixon price controls, 0.8 for the five quarters between 1971.3 and 1972.3, and zero otherwise.  $NIXOFF$  is a dummy variable for the termination of wage and price controls in 1974, 0.4 in 1974.2 and 1975.1 and 1.6 in 1974.3 and 1974.4, and zero otherwise.

For all measures of inflation – the CPI-U, the GDP implicit price deflator, core inflation, excluding food and energy prices – the past inflation coefficients

Table 6.1a Inflation and unemployment conventional model,  $n = 168$ : quarterly observations from 1956.1 to 1997.4

Variable or statistic	Regressions coefficients and standard errors		
	CPI-U <i>INC</i>	GDP Implicit Price Deflator <i>INF</i>	Core Inflation <i>INR</i>
Constant	3.318 (0.863)	3.096 (0.544)	2.458 (0.459)
$\Sigma IN_{t-1}$ Coef. ( $1 <= I < 20$ )	0.980 (0.131)	1.032 (0.075)	1.183 (0.061)
$\Sigma U_{t-j}$ Coef. ( $0 <= j < 4$ )	-0.634 (0.175)	-0.609 (0.115)	-0.535 (0.103)
$FAE_{t-f}$ ( $1 <= f < 4$ )	0.156 (0.107)	0.097 (0.039)	
$PRD_t$	-0.058 (0.038)	-0.037 (0.024)	-0.001 (0.025)
$NIXON_t$	-1.189 (0.861)	-1.014 (0.537)	-1.341 (0.558)
$NIXOFF_t$	0.614 (0.829)	2.361 (0.529)	1.886 (0.522)
$R^2$	0.810	0.877	0.844
D-W	2.036	2.062	1.925

sum to unity or above, and the sums of the unemployment coefficients, are negative. The NAIRU would appear to be robust.

But as I have pointed out repeatedly, it is not robust against formulations that, reasonably, distinguish between periods when unemployment is above the NAIRU and unemployment is below the NAIRU. I have therefore estimated an equation permitting such asymmetric results. We replace equation (6.1) by:

$$\begin{aligned}
 IN_t = & C + \sum b_i IN_{t-1} + \sum b_{jH} UH_{t-j+1} + \sum b_{jL} UL_{t-j+1} + \sum b_f FAE_{t-f} \\
 & + b_p PRD_t + b_c NIXON_t + b_o NIXOFF_t, \quad (6.2) \\
 & I = 1 \text{ to } 20, j = 1 \text{ to } 5, f = 1 \text{ to } 4,
 \end{aligned}$$

$UH = U$  when  $U \geq \text{NAIRU}$  and zero otherwise,  
 $UL = U$  when  $U < \text{NAIRU}$  and zero otherwise.<sup>2</sup>

Table 6.1b *Inflation and unemployment conventional model, n = 88: quarterly observations from 1976.1 to 1997.4*

Variable or statistic	Regressions coefficients and standard errors		
	CPI-U <i>INC</i>	GDP Implicit Price Deflator <i>INF</i>	Core Inflation <i>INR</i>
Constant	6.467 (2.209)	2.967 (1.063)	2.705 (0.802)
$\Sigma IN_{t-I}$ Coef. ( $1 <= I < 20$ )	1.663 (0.342)	1.087 (0.114)	1.368 (0.102)
$\Sigma U_{t-j}$ Coef. ( $0 <= j < 4$ )	-0.368 (0.444)	-0.588 (0.211)	-0.181 (0.103)
$FAE_{t-f}$ ( $1 <= f < 4$ )	-0.251 (0.233)	0.060 (0.054)	
$PRD_t$	-0.063 (0.083)	-0.033 (0.036)	0.053 (0.037)
R <sup>2</sup>	0.767	0.910	0.866
D-W	2.020	2.135	2.030

Table 6.2a presents the results of regressions with separate variables for *UH*, unemployment above the NAIRU and *UL*, unemployment below the NAIRU. The sums of *UH* coefficients are again negative, although considerably less in absolute value than when asymmetry is not allowed for. Increasing unemployment above the NAIRU does appear to lower inflation more and more rapidly.

But the sums of the *UL* coefficients are close to zero or even positive. Decreasing unemployment when it is below the supposed NAIRU does not accelerate inflation more; it may even reduce the acceleration or reduce inflation itself.

When we restrict ourselves to the observations from 1976 to 1997, we find the striking results shown in Table 6.2b. The sums of the *UH* coefficients are again negative but the sums for the *UL* coefficients are sharply positive, confirming what Wall Street, Alan Greenspan (happily), and economists belatedly, have finally been observing: lower unemployment, far from accelerating inflation in the past two decades, has contributed to decreasing it. All of this is confirmed in the results of the separate high-unemployment and low-unemployment regressions shown in Tables 6.3a and 6.3b.

Table 6.2a *Inflation and unemployment unemployment above NAIRU (UH) and unemployment below NAIRU (UL), n = 168: quarterly observations from 1956.1 to 1997.4*

Variable or statistic	Regressions coefficients and standard errors		
	CPI-U <i>INC</i>	GDP Implicit Price Deflator <i>INF</i>	Core Inflation <i>INR</i>
Constant	0.205 (0.320)	0.184 (0.234)	0.039 (0.245)
$\Sigma IN_{t-I}$ Coef. ( $1 < I < 20$ )	0.843 (0.146)	0.841 (0.081)	0.987 (0.056)
$\Sigma UH_{t-j}$ Coef. ( $0 < j < 4$ )	-0.396 (0.321)	-0.277 (0.197)	-0.325 (0.185)
$\Sigma UL_{t-j}$ Coef. ( $0 < j < 4$ )	-0.107 (0.330)	-0.202 (0.216)	-0.065 (0.204)
$\Sigma UL_{t-j} - \Sigma UH_{t-j}$ Coef.	0.290 (0.339)	0.075 (0.240)	0.260 (0.215)
$FAE_{t-f}$ ( $1 < f < 4$ )	0.125 (0.134)	0.105 (0.049)	
$PRD_t$	-0.083 (0.038)	-0.048 (0.024)	-0.008 (0.025)
$NIXON_t$	-0.530 (0.955)	-0.498 (0.640)	-0.878 (0.627)
$NIXOFF_t$	0.246 (0.9269)	1.680 (0.603)	1.347 (0.560)
$R^2$	0.776	0.848	0.818
D-W	1.950	1.981	1.912

The difference between the 6.3 tables and the 6.2 tables is that in the 6.2, I used dummy variables, I separated out the high unemployment and low unemployment observations, but restrained coefficients of the other variables, particularly the past inflation variables and the variables that were eventually put in for the price control period, food and energy prices and the like. Constrained, of them to be the same. And high unemployment and low unemployment, separate regressions are not constrained to be the same. Now, these results are substantiated by comparisons . . . I hadn't tried this before . . . of

Table 6.2b *Inflation and unemployment unemployment above NAIRU (UH) and unemployment below NAIRU (UL), n = 88: quarterly observations from 1976.1 to 1997.4*

Variable or statistic	Regressions coefficients and standard errors		
	CPI-U <i>INC</i>	GDP Implicit Price Deflator <i>INF</i>	Core Inflation <i>INR</i>
Constant	0.800 (0.773)	0.019 (0.428)	-0.490 (0.533)
$\Sigma IN_{t-I}$ Coef. ( $1 < I < 20$ )	0.653 (0.319)	0.820 (0.113)	1.050 (0.095)
$\Sigma UH_{t-j}$ Coef. ( $0 < j < 4$ )	-0.299 (0.532)	-0.419 (0.261)	-0.497 (0.236)
$\Sigma UL_{t-j}$ Coef. ( $0 < j < 4$ )	4.090 (2.096)	1.137 (1.149)	1.558 (0.907)
$\Sigma UL_{t-j} - \Sigma UH_{t-j}$ Coef.	4.389 (2.140)	1.556 (1.116)	2.055 (0.886)
$FAE_{t-f}$ ( $1 < f < 4$ )	0.179 (0.278)	0.127 (0.074)	
$PRD_t$	-0.089 (0.084)	-0.005 (0.041)	-0.043 (0.038)
$R^2$	0.741	0.859	0.848
D-W	2.054	2.013	1.906

core inflation, and changes in core inflation for quarters where unemployment was above and below the NAIRU, both for the entire period from 1956 on, and for the years beginning in 1976.

These results are substantiated by comparisons of core inflation and changes in core inflation – eliminating food and energy prices – for quarters where unemployment was above and below the NAIRU, both for the entire period from 1956 on and for the years beginning in 1976. Looking first at Table 6.4A for the observations beginning in 1956, we find that inflation averaged 4.6 per cent in the high unemployment quarters but only 3.7 per cent in the low unemployment quarters. Of course, this kind of naïve comparison does not prove anything. Rather, the quarters and what was going on in these periods must be reviewed. But it does immediately raise some questions. If low

Table 6.3a Core inflation and unemployment, unemployment above NAIRU (UH) and unemployment below NAIRU (UL), separate regressions  $n = 168$ : quarterly observations 1956.1 to 1997.4

Variable or statistic	Regressions coefficients and standard errors	
	High unemployment regression <i>UH</i>	Low unemployment regressions <i>UL</i>
Constant	0.122 (0.209)	0.281 (0.199)
$\Sigma IN_{t-I}$ Coef. ( $1 <= I <= 20$ )	0.968 (0.048)	0.928 (0.044)
$\Sigma U_{t-j}$ Coef. ( $0 >= j <= 4$ )	-0.246 (0.162)	0.048 (0.182)
PRD	-0.016 (0.024)	-0.017 (0.024)
NIXON	-1.026 (0.603)	-0.751 (0.627)
NIXOFF	1.212 (0.542)	1.136 (0.545)
R <sup>2</sup>	0.817	0.815
D-W	1.894	1.923

unemployment is so inflationary, why, on average, over this whole 40-year period, did low unemployment correlate with less inflation than high unemployment? In the high unemployment quarters, inflation did decline at an average rate of 0.12 percent, while in the low unemployment quarters it increased at an average rate of 0.14 percent.

Restricting ourselves to the 1976–97 observations, we still note in Table 6.4b that core inflation was higher in the high unemployment quarters, averaging 5.2 per cent, as against 4.3 per cent in the low unemployment quarters. While inflation fell on the average by 0.12 per cent in the high unemployment quarters, it rose on the average by only a negligible 0.04 per cent during low unemployment quarters. Now, that should hardly be enough to frighten the Fed or any fiscalist from trying to stimulate the economy because you cannot take these figures precisely. I am honest enough to offer you standard errors, which are usually substantial. But that is your best estimate, if you wish, 0.4 per cent per quarter? That means, in 25 quarters, you would raise inflation by

Table 6.3b *Core inflation and unemployment, unemployment above NAIRU (UH) and unemployment below NAIRU (UL), separate regressions n = 88: quarterly observations 1976.1 to 1997.4*

Variable or statistic	Regressions coefficients and standard errors	
	High unemployment regression <i>UH</i>	Low unemployment regressions <i>UL</i>
Constant	-0.837 (0.427)	0.289 (0.390)
$\Sigma IN_{t-I}$ Coef. (1 <= I <= 20)	1.122 (0.075)	0.916 (0.072)
$\Sigma U_{t-j}$ Coef. (0 >= j <= 4)	-0.533 (0.209)	1.957 (0.891)
PRD	-0.045 (0.037)	0.025 (0.037)
R <sup>2</sup>	0.844	0.846
D-W	1.947	1.932

Table 6.4a *Means of inflation and changes in inflation high-unemployment and low-unemployment, 168 quarterly observations from 1956.1 to 1997.4*

<b>Inflation</b>				
Quarters	Mean	Standard error	t-statistic	Probability
High-Unemployment	4.594	0.264	17.426	0.000
Low-Unemployment	3.692	0.243	15.223	0.000
Difference	-0.902	0.358	-2.519	0.013
<b>Changes in Inflation</b>				
High-Unemployment	-0.115	0.163	-0.705	0.482
Low-Unemployment	0.135	0.150	0.900	0.369
Difference	0.251	0.222	1.128	0.261

1 per cent, in six years? Then of course, if you really thought that was so terrible . . . I mean, that is what a 1 per cent, that is what you would get presumably if you were in the low unemployment, unemployment below the NAIRU era. That hardly seems such a great calamity. So we may conclude again, as I

Table 6.4b Means of inflation and changes in inflation high-unemployment and low-unemployment, 88 quarterly observations from 1976.1 to 1997.4

<b>Inflation</b>				
Quarters	Mean	Standard error	t-statistic	Probability
High-Unemployment	5.193	0.280	18.562	0.000
Low-Unemployment	4.283	0.370	11.575	0.000
Difference	-0.909	0.464	-1.960	0.053
<b>Changes in Inflation</b>				
High-Unemployment	-0.121	0.119	-1.011	0.315
Low-Unemployment	0.138	0.158	0.241	0.810
Difference	0.159	0.198	0.802	0.425

have concluded before, that while higher unemployment may mean lower inflation, there is hardly any evidence that low unemployment does increase inflation.

What we are finding is that high unemployment, as most of us have observed, does finally tend to reduce inflation because, for various reasons, it destroys the labor market. When people cannot get work, they are willing to work for less. With high unemployment there is a lot of excess capacity. Firms may be pressed by competition to sell their goods more cheaply. But with low unemployment, there is the converse, inflation does not seem to rise as unemployment gets lower. Some of my estimates even show that, as unemployment drops (up to at least some point or other), inflation will go down. I am not suggesting, as Bill Vickrey does, that bigger and bigger deficits should be run, more and more money printed, more and more roads built or that we should go to war and bid for all kinds of resources in an attempt to drive unemployment down. I do not entirely agree with Vickrey. He suggested that we drive unemployment down to one per cent. I am not sure we can do that because *that* might begin to cause inflation. In terms of what has happened in our economy in relation to unemployment – even at the height of the Vietnam War, when it went down to only 2.7 or 2.8 per cent for a few months – we do not have an experience where a lower unemployment rate raised inflation. That means that we should feel free to at least allow the economy to have lower unemployment.

Let us now turn to our favorite topics: budget deficits and monetary policy. My standard line is that budget deficits can be good or bad, but you cannot tell which unless you measure them correctly. The federal budget used by Congress and the Administration is inconsistent with standard private accounting and different from state and local government budgets. It is devoid of

analytical content. In itself, it is not merely largely useless, but seriously misleading as a tool of economic policy. First, it does not distinguish between current expenditures and capital expenditures. All outlays, whether for new or real capital – let alone human capital – or acquisition and financial assets, contribute to the so-called ‘deficit,’ or to the reduction of the surplus. We could have eliminated the deficit a long time ago by selling off year by year (and leasing back) all government buildings and public infrastructure. I like to joke that we could begin with the Pentagon, and the Capitol building and the White House and then go on to the interstate highway system. If the federal government had rights to that, then a couple of hundred billion dollars each year could be sold off. Two hundred billion dollar deficits, for example, would be met because the yearly rent would be small. Of course, by the end of ten or twenty years, assets would run out, but in that event, we would figure out some new gimmick to get around things. I should suggest that this lack of a capital budget does play real havoc. The government in Washington tends to a great extent to rent public buildings, which is a very expensive practice. But it looks better in the current budget to rent for \$50 million or so than to build a new building, which costs much more. In the long run, of course, rent is very much more costly to the tax payer.

There is also the problem of financial assets. Purchase and sale of financial assets in the course of the Savings and Loan fiasco played such havoc with the accounts that the Congressional Budget Office established separate lines to indicate the deficit with and without the S&L transactions. Further – as I hope is still taught in elementary economics classes – the economy impacts a deficit (or surplus) as much, and usually more, than the deficit affects the economy. Thus any measure of the impact of deficits on the economy must abstract from the effect of the economy on the deficit. Such a tool has long been available in the variously called ‘full employment budget,’ ‘high employment budget,’ ‘cyclically adjusted budget,’ or – in the terminology of the CBO – ‘the standardized budget’ surplus or deficit. These are variously defined for given levels of employment or economic activity.

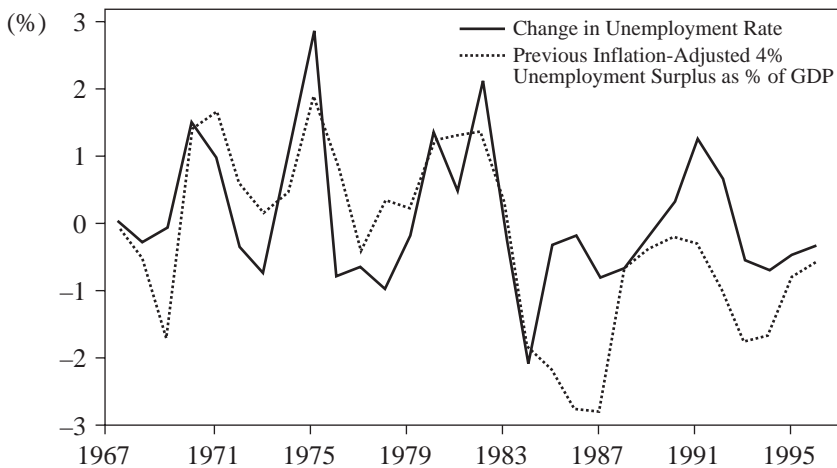
Finally, conventional measures do not take any account of the impact of inflation on the deficit. They include as outlays nominal rather than real interest payments, thus ignoring what may be called an inflation tax on the value of federal debt held by the public. A standardized deficit that comprises only the excess of nominal over real interest payments, brings no real increase in the real value of assets held by the public. Thus, aside from money illusion or possible liquidity effects, it should have no real impact on private spending. I might add that, for those who are concerned that deficits are good because they stimulate the economy and surpluses are bad, having now had this huge move of deficit into surplus, why is the economy booming? Of course, the deficits we have discussed are not that huge all of the time. Particularly, relevant to the

last several years, a great bulk of the deficit reduction has been not a reduction in the inflation-adjusted cyclical deficit – as I put it, cyclically-adjusted and inflation-adjusted – but a reduction in the deficit due to the improvement of the economy itself. This reflects the impact of the economy on the deficit, and only a minor portion of the deficit reduction can be related to the tax increases of the years 1990, 1993 or 1994.

Though I was an early devotee of the permanent income hypothesis, it is important to not go overboard. An increase in taxes on capital gains for the very rich, (that is what is contributing largely to a reduction of the deficit), is not going to affect consumption that much. We must go a little bit beyond the crude measures that I keep using – of impact on the economy, the overall deficit – to get into what spending is for and where tax cuts, or tax increases and the like, have their effect.

Having noted all that, we can examine the impact of deficits on the macro economy. I have therefore constructed a ‘price-adjusted high-employment deficit’ (PAHED) and related that to subsequent changes in GDP, unemployment and saving and investment. I may present here just a few of my findings from earlier work.

First, in Figure 6.1, it is apparent that bigger deficits thus properly measured were associated with bigger reductions or lesser increases in unemployment.



Note: Figure depicts change in unemployment and previous year's inflation-adjusted 4 per cent unemployment surplus or deficit. Unemployment rates are from the Economic Report of the President (Washington, D.C.: Government Printing Office, 1997).Table B-33 p. 338.

Figure 6.1 Effects of inflation-adjusted 4 per cent unemployment surplus or deficit (as a percentage of GDP) on unemployment Rate, 1967–96

Since changes in unemployment are associated with changes in output, it is hardly surprising that similar results for growth in GDP may be seen in Figure 6.2. But now, the big complaint comes from all the deficit hawks, and even our liberal friends in Brookings, like Charlie Schultze, to the effect that – well, the deficits are crowding out saving and investment. And our national saving – badly measured as it is – is too low.

There is real irony in the Clinton Administration and Robert Rubin telling the Japanese they have to run bigger deficits. How many times have we heard the story that the Japanese were having such wonderful growth because they had such a high rate of national saving, and we are in such terrible shape because our national saving is so low? And where are we now in regard to Japanese national saving and their growth, and our national saving and our growth? A curious thing is that if we relate these properly-measured deficits to various measures of national saving and investment, which we presume has to equal saving, there is the curious result that the deficits stimulate not only employment and GDP, tend to stimulate investment as shown in table 6.5.

They are associated with greater national saving, properly measured, as shown in Figure 6.3 and Table 6.6. And in addition, greater budget deficits have been associated with greater public investment, which is very important; state and local, as well as federal, tangible and intangible, as shown in Table 6.7. Monetary policy also has a clear impact on the economy, as indicated in the simple relationships incorporating changes in the real value of the monetary base – a

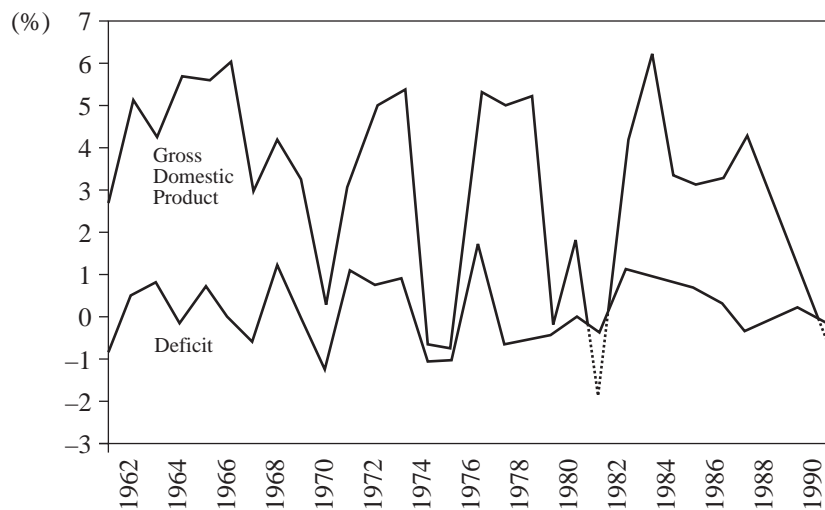


Figure 6.2 Changes in price-adjusted high-employment deficit and real gross domestic product as percentages of GDP, 1961–91

Table 6.5 Adjusted deficit and private tangible investment ( $I_{j,t} = b_0 + b_1PAHED6_{t-1}$ )

I <sub>j</sub>	Regression coefficients*					
	PAHED6 <sub>t-1</sub> b <sub>0</sub>	b <sub>1</sub>	r <sup>2</sup>	D-W	rho	n
Gross private domestic	16.488 (0.527)	0.769 (0.297)	0.315	1.63	0.513 (0.181)	34
Net foreign	-0.250 (0.749)	-0.40 (0.086)	0.882	2.05	0.891 (0.088)	34
Gross	16.072 (1.134)	0.473 (0.309)	0.443	1.73	0.762 (0.129)	34
Consumer durables	16.052 (45.080)	0.299 (0.072)	0.931	1.57	0.989 (0.059)	34
Private domestic tangible	24.030 (0.618)	1.335 (0.317)	0.613	1.54	0.539 (0.159)	34
Private tangible	24.064 (0.784)	0.785 (0.355)	0.393	1.600	0.616 (0.159)	34

Notes: \*Ordinary least squares with a first-order correction for serial correlation. standard errors are shown in parentheses. sample period 1957–90.

Variable definitions:

- PAHED6 Price-adjusted 6 per cent high-employment deficit, as estimated by the BEA for the years 1970–90 and extrapolated backward by the Holloway method on the basis of the BEA middle expansion trend deficit for the earlier years, as percent of GNP.
- I Real investment of type j-GDPI, NFI, gross, and consumer durables from the BEA – taken as a per cent of GNP. Private domestic tangible is the sum of gross private domestic investment and consumer durables. Private tangible is the sum of gross investment and consumer durables.

dubious measure I suppose, but one I confess I have found to work. By this I mean the monetary base dropping all the 100-dollar bills held by Russians, drug dealers, and the like. Perhaps I ought to experiment with others, but it somehow seems to work better than any other variable that I picked up. It seemed to work in terms of the relationship with GDP, growth, unemployment and savings and investment. You will note that I introduced that into regressions with the properly measured, adjusted measure of the deficit. The change in the real value of the monetary base, DMV, is associated with subsequent decreases of unemployment; increases in GDP and/or savings and investment. And that may be noted in Figure 6.4. Table 6.6 again, and Table 6.8 and Table 6.9.

One thing you might have noted is that there is one place where things go wrong – the bigger deficits and the more expansionary monetary policies I

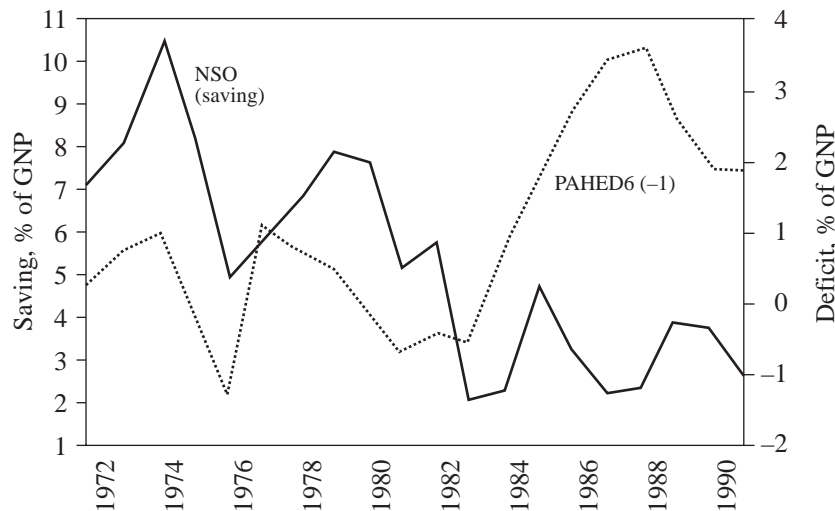


Figure 6.3 Conventional measure of national saving and lagged adjusted deficit

have measured contribute to a reduction in net foreign investment. In other words, we find ourselves importing more capital. We begin to run a trade and foreign account deficit as well. Not surprisingly the economy is stimulated as a result of the deficits, and we buy more foreign goods, raising our imports and therefore reducing net exports. For those in the broader audience who are terribly worried about our trade deficit and foreign investment, there is a wonderful, simple solution: Award yourself a big recession. You get unemployment up to 12 or 14 per cent, and we get rid of the trade deficit. There is the danger that we drag the rest of the world into 20 per cent unemployment, but that is another matter. So there is most of my story: Budget deficits and easier monetary policy have stimulated the economy in the past. The promotion of lower unemployment or faster growth are demonstrated in order that the hopefully fully discredited NAIRU dogma should not be permitted to stand in the way of their application, now or in the future.

There is still a role for application of the remarkable principles of functional finance, as advanced by Abba Lerner when the old new economics was in its infancy. Budget deficits can be allowed to increase the real value of private assets in the form of government debt until they bring us to full employment. In a paper I did some years ago with Sang-In Hwang, we actually constructed a little model in which we put in the parameters that we thought were correct (but they did not work very well). The idea was that if somehow the stimuli proved too much, a correction was to be found in a resultant decline in real deficits as the inflation tax increases. Inflation reduces the

Table 6.6 *Adjusted budget deficits, changes to monetary base, real exchange rate and alternate measures of national saving, 1972–91*

Variable or parameter	Regression coefficients and standard errors	
	NS0	NS1
C	50.478 (312.737)	60.456 (380.945)
PAHED (-1)	0.757 (0.334)	1.089 (0.365)
DMB (-1)	5.999 (1.935)	6.858 (2.109)
DMB (-2)	6.584 (1.692)	7.360 (1.846)
ERR (-2)	-0.107 (0.035)	-0.099 (0.038)
AR(1)	1.009 (0.082)	1.010 (0.083)
R <sup>2</sup>	0.798	0.782
D.W.	2.583	2.630
n	20	20

*Notes:*

C	Constant term
AR(1)	First-order autoregressive coefficient
R <sup>2</sup>	Adjusted coefficient of determination
D-W	Durbin-Watson coefficient
n	Number of observations
PAHED (-1)	Lagged price-adjusted, BEA 6% high-employment budget deficit as percentage of GNP
DMB (-1)	Lagged real changes in monetary base as
DMB (-2)	percentage of GNP
ERR (-2)	Real exchange rate index, March 1973 = 100, lagged two years
NS0	Conventional net national saving = gross saving – capital consumption allowances with adjustment, as percentage of GNP
NS1	Change in total fixed reproducible capital plus change in business inventories and net foreign investment minus statistical discrepancy, as percentage of GNP

real stimulus of deficits. Deficits can then simply be allowed to proceed and be increased at will, relying upon the combination of the increased income after taxes, and the accumulating value of real assets in the form of government debt held by the public to increase their consumption. This would continue on until what is essentially (close to) real full employment is

Table 6.7 *Adjusted deficit and public investment:  $\Delta I_k = b_1 \Delta PAHED6$* 

$\Delta I_k$	JPAHED6*					
	$b_0$	$b_1$	$R^2$	D-W	rho	n
Federal tangible	-0.035 (0.049)	0.102 (0.035)	0.250	1.52	0.336 (0.166)	31
S & L tangible	-0.018 (0.040)	0.006 (0.017)	0.274	1.86	0.566 (0.157)	31
Total government tangible	-0.048 (0.079)	0.110 (0.042)	0.302	1.37	0.473 (0.160)	31
Education &	0.052 (0.070)	0.135 (0.035)	0.347	1.73	0.510 (0.158)	31
Government R&D	-0.021 (0.019)	0.011 (0.009)	0.291	2.08	0.525 (0.163)	30
Total government	-0.056 (0.093)	0.228 (0.059)	0.354	1.70	0.390 (0.176)	30

*Notes:* \*Ordinary least squares with a first-order correction for serial correlation. Standard errors are shown in parentheses. Estimated as first differences. Sample period is 1961–1991 for federal tangible, S & L tangible, and total government tangible, and education and training and 1962–1991 for government R&D and total government.

*Variable definitions:*

APAHE66 Price-adjusted 6 per cent high-employment deficit as percent of GNP, first difference.

$\Delta I_k$  Real investment of type k – federal tangible, S & L tangible, education and training, government R and D and total government – generally from the BEA, taken as percent of potential GNP, first differences.

achieved, rather than the so-called NAIRU. At that point, if things were overextended, the worse consequence would be somewhat more inflation, which would be a reduction to the real deficit because of an increased inflation tax. And this would reduce the stimulus.

This completes my story and I hope you have criticisms, comments, and questions.

## NOTES

1. See Eisner (1995, 1996a, 1996b, 1997a, 1997b, 1998a and 1998b).
2. To prevent any bias from the differences between the differences of the means of the high and

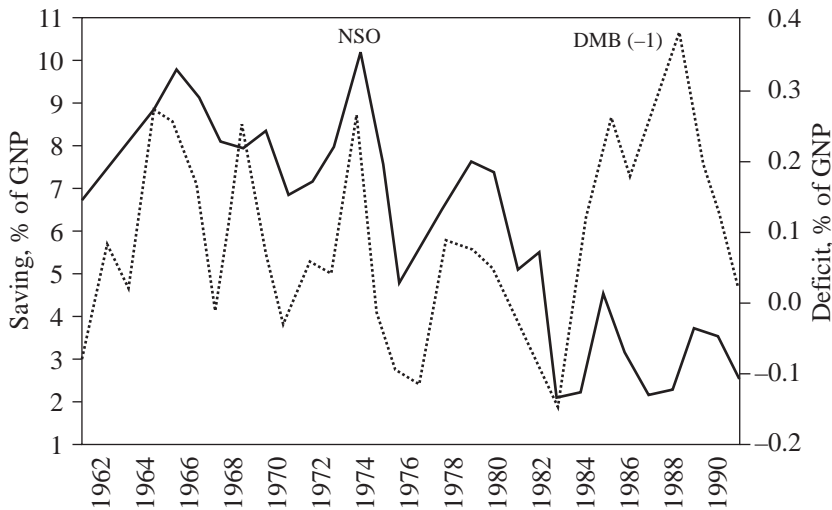


Figure 6.4 Conventional measure of national saving and lagged change in the monetary base,  $DMB(-1)$ , as percents of GNP

low unemployment variables and these assigned values of zero, I normalized these variables around zero.

- It's now more than six years, passing through the peak of an intense boom, into a mild recession and a weak recovery. Still no inflation.

## DISCUSSION

**AUDIENCE MEMBER:** Didn't you deliver a paper recently dealing with Robert Gordon's estimates, and hasn't he changed his mind?

**ROBERT EISNER:** If Bob has changed his mind, he should let me know. I do have his data, but he won't work with my data or show me what's wrong with it. I argue with him whenever he doesn't run away from me. He's been avoiding me on this subject for a long time now.

But what he does have is quite beautiful. He doesn't admit that anything is wrong with what he did before, but he now has what I call a 'TV-NAIRU,' that is, a time-varying NAIRU. The econometrics and statistics are such that each quarter in which unemployment stays very low and inflation is low, the NAIRU is adjusted down.

So it's not even the proposition that the NAIRU changes with changes in the economy, that is, that you get rid of the minimum wage law, or this or that, and you'll get a different NAIRU. Rather, Gordon's NAIRU just

Table 6.8 *Adjusted deficit, change in monetary base, real exchange rate and private tangible investment (first differences)  $\Delta I_{j,t} = b_0 + b_1 \Delta PAHED6_{t-1} + b_2 \Delta DMB_{t-1} + b_3 \Delta DMB_{t-2} + b_4 \Delta ERR_{t-2}$*

	Regression coefficients*							R <sup>2</sup>	D-W
	$\Delta PAHED6_{t-1}$	$\Delta DMB_{t-1}$	$\Delta DMB_{t-2}$	$\Sigma \Delta DMB$	$\Delta ERR_{t-2}$	$b_0$	$b_1$		
$\Delta I_1$	$b_0$	$b_1$	$b_2$	$b_3$	$b_2 + b_3$	$b_4$			
Gross private domestic	-0.097 (0.209)	0.734 (0.271)	6.716 (1.694)	6.207 (1.444)	12.923 (2.526)	-0.071 (0.036)	0.610	2.15	
Net foreign	-0.059 (0.081)	-0.241 (0.105)	0.016 (0.658)	-0.900 (0.561)	-0.884 (0.918)	-0.032 (0.014)	0.470	2.19	
Gross	-0.156 (0.204)	0.493 (0.264)	6.732 (1.652)	5.307 (1.408)	12.039 (2.462)	-0.103 (0.035)	0.528	2.40	
Consumer durables	0.135 (0.063)	0.257 (0.082)	1.477 (0.513)	0.801 (0.437)	2.278 (0.765)	-0.009 (0.011)	0.525	1.70	
Private domestic tangible	0.039 (0.246)	0.991 (0.318)	8.194 (1.989)	7.007 (1.695)	15.201 (2.965)	-0.080 (0.042)	0.639	1.97	
Private tangible	-0.20 (0.240)	0.750 (0.310)	8.209 (1.941)	6.108 (1.654)	14.317 (2.893)	-0.113 (0.041)	0.571	2.21	

Notes: \*Ordinary least squares. Standard errors are show in parentheses. Sample period 1962–90; there are 29 observations.

*Variable definitions:*

- PAHED6 Price-adjusted 6 percent high-employment deficit as percent of GNP.  
 DMB Change in the real monetary base as a percent of GNP (December figures divided by 4th quarter GNP implicit price deflator).  
 ERR Trade weighted real exchange rate (March 1973 = 100).  
 I Real investment of type j-GDPI, NFI, gross, and consumer durables from the BEA – taken as a percent of potential GNP. Private domestic tangible is the sum of gross private domestic investment and consumer durables. Private tangible is the sum of gross investment and consumer durables.

changes, for whatever reason. God only knows why; it just changes each time.

It's down now to about 5.3 per cent for one of his measures, the CPI; and down to 5.1 per cent for the other. And of course, Gordon's still got his unemployment a little bit below the NAIRU, actual unemployment that is. With time perhaps, if we wait, his NAIRU will finally get down to the level of unemployment.

**AUDIENCE MEMBER:** So his equations work; he gets a NAIRU?

Table 6.9 Changes in adjusted budget deficits, monetary base, real GDP and unemployment.  $\Delta Y_t = b_0 + b_1 \Delta PAHED6_{t-1} + b_2 DMB_{t-1}$

Variable or parameter	$\Delta Y_t$	
	GDP	Unemployment
C	1.922 (0.570)	0.462 (0.170)
$\Delta PAHED6_{t-1}$	1.227 (0.317)	-0.466 10.1621
$DMB_{t-1}$	9.510 (2.493)	-4.414 11.0321
AR(1)	0.378 (0.208)	-0.010 (0.233)
R <sup>2</sup>	0.481	0.444
D-W	1.713	1.771
n	30	30

Notes:

- C Constant term
- AR(1) First-order autoregressive coefficient
- R<sup>2</sup> Adjusted coefficient of determination
- D-W Durbin-Watson coefficient
- n Number of observations
- $\Delta PAHED6_{t-1}$  Lagged price-adjusted, BEA 6% high-employment budget deficit as per cent of GNP
- $DMB_{t-1}$  Lagged real change in monetary base as percent of GNP (December figures divided by 4th quarter GNP implicit price deflator)

EISNER: But all the CBO, all the various people that estimate things, they estimate this equation. I can estimate the same equation. And I get their results. They're not faking. You get a NAIRU. The CBO now sets it at about 5.8 per cent. It varies some over time. I've gotten about 5.8 per cent; almost exactly the same figure.

Gordon was insisting it was 6 per cent for God knows how long. Now he has a new system that estimates what he calls a TV NAIRU – a time-varying NAIRU – conceding that the NAIRU is coming down. About three or four years ago I started attacking this problem. We observed the unemployment rate dip below the 6 per cent mark. I asked, 'Where is the accelerating inflation?' Gordon's answer was that there's a lag. So every few months I would ask him again. It's now been three years, and we still don't have accelerating inflation.<sup>3</sup>

**MALE SPEAKER:** Could you eliminate the trade deficit with a full employment program?

**EISNER:** I don't know that that would eliminate the trade deficit. I've written a number of papers on that. By the way, I think most of you would agree that the trade deficit, 'ain't no real problem.' If the Japanese want to give us these nice cheap cars (and I have to confess that we drive two Japanese cars in my family), and make them cheaper and cheaper, that's fine in a way.

I would say that there should be a full employment policy to make sure that the trade deficit doesn't contribute to unemployment. Unemployment is a real problem. If we continue to run this current account deficit – a negative net foreign investment – foreign claims on us increase that we eventually have to repay.

There are a few perspectives on that that people have tended to ignore. For one, if the economy is growing, as ours is, and foreign economies are growing, they may well want to hold more of their assets as they grow, and more US securities. And our increasing foreign debt – depending on what deficit you're assuming – will approach an asymptote of a certain ratio of debt to GDP. It's the same relationship for the budget deficit. If, for example, there is a deficit equal to 2.5 per cent of GDP, and the GDP keeps growing at 5 per cent, no matter what the debt/GDP ratio is to begin with, it will end up at 50 per cent of GDP.

If the deficit ratio is raised – let's say to 3 per cent of GDP, and the GDP keeps growing at 5 per cent – then the debt/GDP ratio will grow to 60 per cent of GDP. The same relationship holds then for the current account deficit. The debt relative to the GDP will not be increasing infinitely. It will approach some particular ratio depending upon how large the current account deficit is. This results, for any reasonable figures, with a final debt/GDP ratio that is highly manageable in terms of what percentage of GDP then would have to be paid to service that debt. If it runs into 1 or 2 per cent of GDP, I would say that if you accepted 1 or 2 per cent higher unemployment rate in order to somehow avoid that, you would have a much greater loss in output.

But the other curious angle is that we get a free ride because foreigners apparently have no desire to take this servicing, this income on their debt, and buy our goods and enjoy our automobiles or whatever. They keep piling it on and reinvesting. Maybe they like to owe US assets because they are safe. We are simply getting a free ride with money turned back to us.

**AUDIENCE MEMBER:** I think that calculations you are making really deal with the impact of the deficit properly measured on the level of private expenditures, and then their impact on unemployment and prices. Why is there a difference between the government making constant payments, or the government owing?

**EISNER:** You're entirely right. It doesn't make any difference if the government is spending the money to pay for education or to pay for clerks to sit around.

**AUDIENCE MEMBER:** The deficit is measured in this computation?

**EISNER:** This computation does not distinguish it. I'm glad you made the point. I somehow wanted to make a comment on capital budgets, but that's sort of a detour from this idea.

**AUDIENCE MEMBER:** When the economy weakens the budget deficit goes up, which is thought to get the recovery going. Yet, on the other hand, when the deficit shrinks as we grow, presumably there would be a countercyclical effect going the other way where that would weaken the recovery. Is it an asymmetrical situation?

**EISNER:** No, it's not asymmetrical. With a prosperous economy, the deficit declines, which is just what happened in the last few years. With a slump, the deficit grows. Of course that's one reason why economists, including Charlie Schultz, agree to oppose a balanced budget amendment. As a matter of fact, the balanced budget amendment for this reason would have caused pro-cyclical fiscal policy, and forced a rise in taxes.

**AUDIENCE MEMBER:** Do you think then, that the deficit decline that we're experiencing now will end the cycle?

**EISNER:** I wouldn't say that. We have an \$8 trillion economy, and even though I have spent my research efforts on the deficit, there's much more to the economy than the deficit. If that boom continues unabated in the information revolution – with computers in Silicon Valley and all over the country – we can probably tolerate surpluses for a while, particularly if Alan Greenspan doesn't get in the way, and apparently he won't.

Of course, there's another question regarding whether we should tolerate these surpluses: Should we reduce the debt rather than spend the surpluses to invest in something that would really contribute to the future growth and to taking care of our children and grandchildren?

**AUDIENCE MEMBER:** Is there a theoretical explanation for why, when the economy gets closer and closer to full employment, prices should not rise. In fact, you seem to claim that they might be rising at full employment.

**EISNER:** I would concede that there is some level of unemployment below which you cannot push the economy without increasing inflation. That's what I would call full employment, if you wish.

**AUDIENCE MEMBER:** So your argument revolves around what is full employment?

**EISNER:** Yes, but that's not the way people have been estimating this NAIRU. And the NAIRU they estimate is far above what most of us would consider to be full employment. Now, as for explanations, I have a few of them in my new-view-of-the-NAIRU paper and in my decline-and-fall-of-the-NAIRU paper.

They relate to things such as the fact that with low unemployment we have higher average productivity and, very possibly, lower marginal cost. We also have a situation where labor unions – perhaps contrary to the usual notion that they're going to be very belligerent when they have low unemployment – do not seem to be pressing unduly. They're happy with the fact that they have jobs and they don't want to jeopardize them. There is another explanation in terms of oligopoly theory, which is, that firms with high profits decide, 'I don't want to invite some other jackass into the industry by keeping my prices abnormally high.'

I mean, you can be convinced or not by all this, but there are these possible theoretical explanations as to why inflation may not be set off by lower unemployment, up to a point. I should add something. I took the old Phillips



*Note:* The Cubic Phillips Curve presented here is in general form only. It is drawn from detailed notes of Robert Eisner's conference presentation and replicates his hand-drawn sketch during the discussion period.

Figure 6.5 The cubic Phillips curve

Curve, and set it out the way it goes, inflation on the vertical, unemployment on the horizontal axis, and the Phillips Curve sloping down, so that inflation gets lower and lower as unemployment gets higher and higher. And then I took the data and I estimated a cubic. I said – inflation is a function not only of unemployment, but of unemployment squared and unemployment cubed. And what do you think I got for my new ‘Phillips Curve’?

Inflation was high and did come down starting at very low unemployment, unemployment of 1 per cent. This was a projection but the usual relation suggested that you would have very high inflation. Take unemployment from 1 per cent, then let it keep going up from there. It gets up to about 4.5 per cent, and inflation is very low.

And then, as unemployment begins to go up to above around 4.5 per cent or 4.9 per cent, inflation begins to go up again. If you have an estimated Phillips Curve, you can try out these data sometimes yourself. The normal Phillips Curve falls from left to right.

My Phillips Curve falls and then rises and then falls again. And that gives me 4.9 per cent, about where we are now. That’s where you get the lowest inflation. It’s true, if you’re trying to push the economy up, as Bill Vickrey wants, to 1 per cent unemployment, there will be high inflation.

But again, if you go up to here, you get a peak actually around 8 per cent unemployment. And then when you get above 8 per cent, inflation falls again and becomes low. And that of course is consistent with the other data I have presented.

**MODERATOR:** Any further questions, on deficits and functional finance?

**AUDIENCE MEMBER:** Yesterday, Bob, you said we should re-educate the public to understand that deficits are borrowing. And today you’ve been talking about projections on debt ratios. Why are we talking like this? Why are we accepting government budget constraints? Everything that you have equated to borrowing is just an acceptance of the basic idea of government budget constraints. I don’t accept that at all. Why are we accepting that?

**EISNER:** I’m not accepting that. I quite agree with the principle of functional finance and that our bottom line should be the state of the economy as measured by employment, growth or GDP, and the like. Maybe there’s a little bit of semantics involved. It’s one thing to say that we should not let the budget deficits stand in the way of what we want to do. I entirely agree with that. But it’s another to shy away from the facts. You do want to analyse the impact of the budget so that you know what you’re getting. In fact, if you want to get to full employment, this suggests that you should have a bigger deficit.

Take, for example, the simple relationship between the deficit and unemployment. You know what you're going to find? Bigger deficits are associated with higher unemployment. The response is to reduce the deficit. Of course, we have to ask, 'Why are bigger deficits associated with higher unemployment?'

If you take any regression, you're going to find that. When you had high unemployment, you had low national income, low tax payments and a bigger deficit. I think this analysis is really useful to you and all the rest of us who want to damn the deficit. Take whatever deficit necessary in order to get to the state of full employment.

**AUDIENCE MEMBER:** Some have argued that there are structural changes in the economy that might account for the NAIRU change. To what extent do you agree with that? To what extent do you see this as a permanent change?

**EISNER:** I think my explanation is better because I've been working at these estimates for three or four years. I was finding the NAIRU suspect on the basis of data well before the so-called change in the economy. I'm now getting huge positive coefficients for low unemployment, indicating that when you drive unemployment further and further below this NAIRU – which I guess came out to be about 5.8 per cent – that is, lower than the CBO NAIRU, you are reducing inflation all the more.

**AUDIENCE MEMBER:** If we think of functional finance as an integration of a monetary instrument and a fiscal instrument, what is your personal rule by which you would adjust policy? What's the effect going to be on labor?

**EISNER:** I may offend some people, but I'm an old Keynesian and I always argued, as Keynes did – or anyway as I understood him to do – that interest rates matter and monetary policy matters, but to a limited extent.

I have never taken the position that money doesn't matter, but I have disputed Uncle Milton when he said money is all that matters. I do tend to place greater weight on fiscal policy. I much regret the attitude that monetary policy has become the only game in town in Washington. This I think is a self-imposed restriction of a political nature.

Obviously, I share the concern that you can't expect fine tuning to shift every wrinkle. I also have argued for some time that you have to be careful and note the distinction between short-run and long-run effects. You can't expect a cut in taxes for one quarter or one year to turn the economy around. People will simply save more of it.

I argued during the Vietnam War that the increase in taxes – the temporary surcharge – could not be expected to slow the economy and slow the inflation; and they didn't. I would say that the economy should be stimulated right now

in a counter-cyclical fashion. The thing to do is to have government expenditures for goods and services, and the kind of tax changes that involve substitution. A federal sales tax would be a better method to encourage people to buy now rather than later. If you simply cut income taxes, people spread out their spending and there isn't much of a counter-cyclical effect.

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