

# THE RULES VERSUS DISCRETION DEBATE OVER MONETARY POLICY IN THE 1920s

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From the advent of central banking in the nineteenth century to the present, debate has continued over whether monetary policy should be conducted according to rules or left to the discretion of the policymaker. In the 1920s the Strong Hearings, held by the House Committee on Banking and Currency, offered a forum for debate over this question. The subject of these hearings, the Strong bill, in its original form, required that monetary policy be conducted according to a rule in that the objective of policy, stability of the price level, was not left to the discretion of the Fed. The bill required that the discount rate be set with a view to “promoting a stable price level for commodities in general. All of the powers of the Federal Reserve System shall be used for promoting stability in the price level” (Stab., pt. 1, 1926, p. 1). Many eminent individuals testified at these hearings, for example, the economists Irving Fisher from Yale, Oliver Sprague from Harvard, and Gustav Cassel from Sweden. For this reason, the testimony offers an instructive review of the rules versus discretion issue. A historical review of this sort can offer useful insights for the current debate.

One argument made by the proponents of rules in these hearings was that discretion was undesirable because it made monetary policy depend upon the vagaries of the selection of policymakers. In retrospect, given the situation of the 1920s, this argument proved to be correct. Benjamin Strong, Governor of the Federal Reserve Bank of New York since the inception of the Fed, dominated monetary policy in the 1920s through the force of his personality.<sup>1</sup> His death in 1928 was the key event that produced a shift in power within the Fed. Power shifted away from New York to a committee comprised of Federal Reserve Board members and regional Federal Reserve

Bank governors.<sup>2</sup> The format of the discussions in the Strong Hearings elucidated the sharp difference of views over appropriate monetary policy among the New York Fed, the Board in Washington, and the regional Bank governors. For this reason, a review of these hearings clarifies the way in which the shift of power within the Fed in the late 1920s determined the monetary policy followed during the Depression.

## **Background of the Strong Hearings**

The founders of the Federal Reserve System had assumed that the Fed would operate subject to the discipline of the international gold standard. This system, however, collapsed in World War I. The void created by this collapse stimulated the emergence within the Fed of two new and divergent views over the appropriate role of monetary policy. One view developed at the New York Fed under Governor Benjamin Strong. This view developed out of a perceived immediate need to offset the inflationary impact of gold inflows and emphasized open market operations. Under the leadership of Strong, open market operations were used in order to offset gold inflows and to stabilize the level of bank reserves. The alternative view developed at the Federal Reserve Board under Board member Adolph C. Miller and economist W. W. Stewart. It involved a reformulation of the real bills doctrine and emphasized

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<sup>2</sup> This shift in power is described in detail in Friedman and Schwartz (1963, pp. 413ff). With the death of Strong, effective control over monetary policy shifted away from New York to a committee, the Open Market Investment Committee, comprising regional Fed governors and members of the Board in Washington. Not only did the regional Bank governors begin to assert their independence on this committee after the departure of Governor Strong, but also the Board assumed effective veto power over the committee's open market purchases and sales. After March 1930, this committee was replaced by the Open Market Policy Conference. In this latter organization, all the regional Bank governors participated as equals, so that the influence of the regional Reserve Banks on the policy of the Federal Reserve increased even further.

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<sup>1</sup> In 1935, the title governor was changed to president.

changes in the discount rate.<sup>3</sup>The criterion for determining changes in the discount rate was to consist of an assessment of the extent to which credit extensions by the banking system derived from a speculative motive. This assessment was considered to be of necessity judgmental, although the Board instituted the collection of a number of statistical series on real economic activity in order to assist it in this task (for example, the industrial production index). Finally, the regional governors of the Federal Reserve Banks simply retained the beliefs of the real bills doctrine, without questioning whether these beliefs remained valid in the absence of the gold standard. These three divergent views regarding the proper role of monetary policy are summarized in this paper.

In the 1920s, there was an active group of influential individuals who organized into Stable Money Associations in order to promote the objective of price level stability for monetary policy. [See Fisher (1934).] There was also an interest in price level stability among politicians representing farm states. This interest derived from the perception that agrarian interests had suffered disproportionately during the disinflation of 1921. Individuals from the stable money group persuaded Representative James G. Strong from Kansas (no relation to Governor Strong) to introduce a bill to require the Federal Reserve to make price level stability its primary objective. Congressman Strong held two sets of hearings on this bill, in 1926-1927 and in 1928.

The particular character of the hearings derived from the belief by Congressman Strong and his supporters, especially economists John R. Commons and Irving Fisher, that the period of relative price stability beginning in 1922 derived from Governor Strong's policy of stabilizing bank reserves. Much of the hearings are devoted to discussions between congressmen and Fed officials intended to elucidate the monetary policy of the Fed in the 1920s and to determine the relationship between this policy and the behavior of the price level. Congressman Strong and his supporters, from their perspective, were trying to institutionalize the policy of the New York Federal Reserve. To this end, they attempted, on

the one hand, to persuade Governor Strong to support the bill of Congressman Strong. On the other hand, they attempted to persuade Board member Adolph Miller to abandon his view of policy and to adopt the objective of price stability as the guideline for monetary policy.

## **The Policies of Benjamin Strong and New York**

*The Discovery and Development of Open Market Operations* Open market operations were discovered accidentally when the Reserve Banks purchased government securities in an effort to increase their earnings. The Treasury complained of these purchases because their effect on interest rates made it difficult for the Treasury to determine the interest rate to set on new debt issues. In order to coordinate open market purchases so that the Treasury would know when the Reserve Banks were in the market, Governor Strong, in May 1922, formed a committee of some regional Bank governors (Stab., pt. 1, 1926, p. 309):

... in the latter part of 1921 and early in 1922, the member banks had liquidated so large a portion of their discounts [borrowings] at the reserve banks that there was some concern felt by some of the Federal reserve banks as to their earnings. . . . I think I should state very frankly to the committee that many directors, or many of the reserve banks, strongly held the feeling that a part of their duty was to earn enough to pay expenses. . . . So that in that period the reserve banks, being autonomous and having the power to invest money, were making considerable investments in the market, buying bills and buying Government securities. It was found that in the actual execution of the orders, and in the effect upon the price of Government securities in the market, there seemed to be some cause for complaint in the Treasury; that sometimes we were treading on the toes of the Treasury. . . . So, in May of 1922, at a meeting of the governors of the reserve banks, it was decided to get some sort of supervision of the way this was done, so as to satisfy the Treasury and equally so as to have a more orderly procedure. A small committee was appointed to deal with the matter. . . .

In February 1923, Governor Strong took a leave of absence due to illness. In March, the Board, led by Adolph Miller, dissolved the Strong Committee and established a new one intended to be under its control.<sup>4</sup>Strong testified (Stab., pt. 1, 1926, p. 309) :

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<sup>3</sup> According to the real bills doctrine, the appropriate qualitative restriction on the kind of credit that banks could extend would provide a quantitative restriction on bank deposits and the money supply that would ensure price stability. In particular, banks were supposed to lend only on collateral arising out of productive activities, that is, to discount only "real bills." The self-liquidating character of such loans was supposed to ensure that the deposit creation associated with credit extension would be limited and proportioned to the "needs of trade."

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<sup>4</sup> Governor Strong registered his private response to this takeover in a letter written on April 21: "The Federal Reserve Board had no right to discharge the committee and wouldn't have done so had I had a crack at them. I'd see them damned before I'd be dismissed by that timid bunch" (Chandler, 1958, p. 228).

In 1923, in the spring of that year, the Federal Reserve Board decided that it was wise to reorganize the committee procedure. The original committee was discharged, a new committee was appointed, consisting of the same men; and commencing in 1923 purchases of Government securities and sales of Government securities were actually made for the account of the system as a whole. . . .

Strong returned in October 1923 and regained control of the Open Market Investment Committee.<sup>5</sup>

Carl Snyder attributed the formation of Governor Strong's views on monetary policy to Strong's observation of the effects of the open market purchases undertaken by the regional Reserve Banks in 1921 and 1922. [Snyder was a self-taught statistician and economist. He was at the Federal Reserve Bank of New York from 1920 to 1935. See Garvy (1978) for an interesting discussion of his work.] In particular, according to Snyder, Strong believed that these purchases arrested the recession then in progress. Snyder (1940, p. 226) later wrote:

Following the close of the World War there was, it will be recalled, general apprehension as to the effect . . . of restoring an immense number of men . . . to their previous occupations. . . . and there was almost universal expectation that . . . there would be a heavy fall in prices. . . . For a time it looked as if such a fall were in process. Then . . . a wild rise [occurred] in commodity prices. Finally, after a long wait, the Federal Reserve Board approved the policy Governor Benjamin Strong had so urgently presented and allowed the Federal Reserve Bank of New York to raise its discount rate to 6 per cent. Even this did not bring an immediate check, and so in May the New York rate was again raised, this time to 7 percent. . . . there was an abrupt fall in the stock market, and then in commodity prices, bringing on the depression of 1921.

Towards the end of 1921 several Reserve Banks found themselves facing a deficit. . . . So to acquire some earning assets, they began considerable purchases of government securities. Within six months the fall in prices had stopped, business began to recover and confidence returned. A . . . result which did not escape the attention of careful observers, and most noticeably of Governor Strong.

Snyder then asserted that Governor Strong based his response to the recession in 1924 on the prior experience of 1921 and 1922 (Snyder, 1940, p. 227) :

. . . in 1924, not as a means of meeting expenses but as a deliberate policy, Governor Strong proposed that the Federal Reserve Banks again lower their rates and buy heavily of government securities. . . . The recession in business was soon over and normal conditions restored.

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<sup>5</sup> Miller used the Strong Hearings to ask for legislation that would effectively place control of open market operations under the Board (Stab., pt. 2, 1927, pp. 865-66).

*Monetary Control* Governor Strong argued that bank deposits and the money supply were derived as a multiple of bank reserves. The money supply could be controlled by the Fed through its control over bank reserves.<sup>6</sup> Failure to control bank reserves and the money supply would lead to either inflation or deflation. Strong presented a set of charts in order to make these points. (These charts, labeled here as Charts 1 through 4, are from *Stab.*, pt. 1, pp. 422, 334, 471, and 332, respectively.) Chart 1 illustrates the way in which the reserves-deposit ratio of banks and the currency-deposit ratio of the public determine the extent to which a multiple dollar quantity of deposits can be supported by a single dollar of reserves. In particular, it shows how with a reserves-deposit ratio of 1 to 10 and with a currency-deposit ratio of 1 to 5, \$1 of high-powered money creates \$3.33 of deposits.<sup>7</sup> Chart 2 illustrates the multiple expansion of deposits deriving from an increase in high-powered money. Strong testified (*Stab.*, pt. 1, 1926, pp. 334-35) :

. . . when a gold dollar is put in the reserve bank it creates a dollar of reserve balance for the member bank depositing with us. Now, leaving out altogether the question of the requirements of the country for currency, the average reserve of all the banks of the country works out roughly at one dollar of reserve to ten dollars of deposits. If the demand for currency does not increase, theoretically, the amount of gold deposited in the banking system will expand the credit volume generally to ten times the amount of reserves created by imports of gold which is deposited with us. It does not work out always that way, because, after an expansion of loans if some business activity arises, and prices are rising, the need of the country for currency increases, and when the banks come to us for

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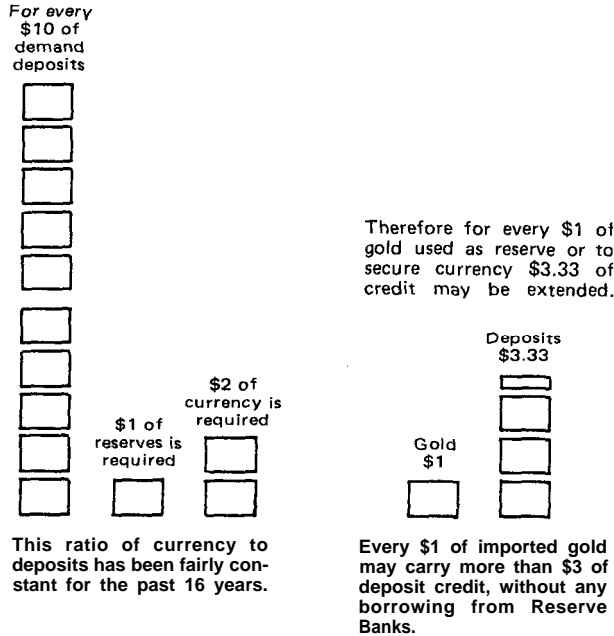
<sup>6</sup> Elsewhere, Governor Strong had already rejected the idea that the Fed could control bank reserves and deposits through the criteria proposed by "real bills" proponents. [See fn 3.] In November 1922 in a speech to the Graduate Economics Club at Harvard, he stated (Chandler, 1958, pp. 195-96) :

I fear there are many people who still hold to the notion that some mysterious influence or process will operate when this enlarged volume of credit is no longer needed so that it will be induced, without any compulsion or persuasion, complacently to walk back to the Reserve Bank and surrender itself for cancellation. . . . it is my belief that the greatest influence upon the member bank in adjusting its daily position is the influence of profit or loss . . . if borrowing at the Reserve Bank is profitable beyond a certain point, there will be strong temptation to use surplus reserves when they arise for the purpose of making additional loans rather than for repaying the Reserve Banks.

<sup>7</sup> High-powered money consists of currency in circulation and in bank vaults and of bank deposits with the Fed. The term "high-powered" derives from the way in which a dollar of this money supports a multiple dollar quantity of bank deposits.

Chart 1

**THEORETICAL EXPANSION OF DEMAND DEPOSITS OF MEMBER BANKS ON THE BASIS OF IMPORTED GOLD**



Note: Reproduced from Stabilization. Part I, p. 422

currency as distinguished from balances, they take the entire 100 per cent of what they borrow in currency.

Governor Strong desired to stabilize the reserve base upon which bank credit and deposits rested. During the period immediately following formation of the open market committee in 1922 by Strong, control of the reserve base required offsetting gold inflows (Chandler, 1958, p. 191) :

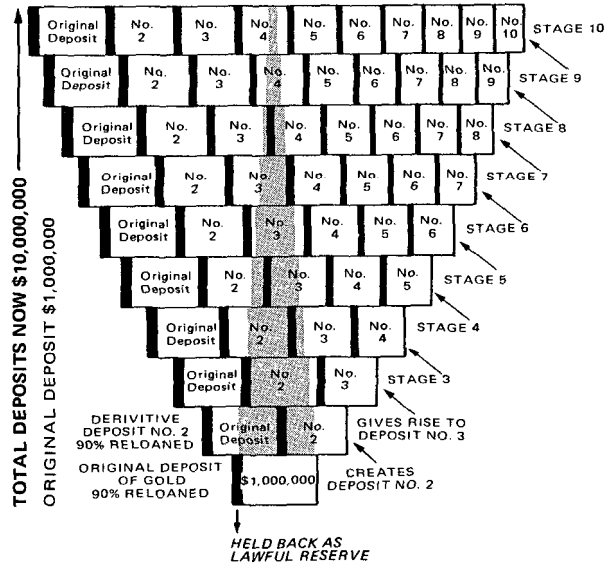
If I were Czar of the Federal Reserve System I'd see that the total of our earning assets did not go much above or below their past year's average, after deducting an amount equalling from time to time our total new gold imports. This is the song I've been singing in Washington since April 1922 with but moderate success. Most of them don't see the point about gold!

After 1922, gold inflows were no longer sterilized. Federal Reserve credit was kept approximately constant so that gold inflows provided for moderate expansion of the reserve base. Strong made these points in the following statement and in Charts 3 and 4:

Chart 2

**HOW THE DEPOSIT OF A MILLION DOLLARS OF GOLD MAY GROW INTO \$10,000,000 OF BANK CREDIT**

**SURPLUS RESERVES**



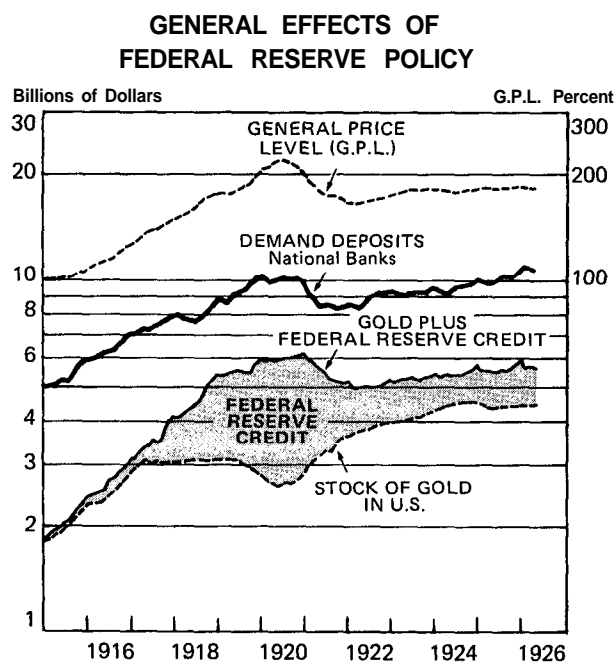
Note: Reproduced from Stabilization, Part 1, p. 334.

In the old days there was a direct relation between the country's stock of gold, bank deposits and the price level because bank deposits were in the last analysis based upon the stock of gold and bore a constant relationship to the gold stock, and the volume of bank deposits and the general price level were similarly related. But in recent years the relationship between gold and bank deposits is no longer as close or direct as it was, because the Federal reserve system has given elasticity to the country's bank reserves. Reserve bank credit has become the equivalent of gold in its power to serve as the basis of bank credit. A bank can meet its legal requirement for reserves by borrowing from the reserve bank, just as fully as though it deposited gold in the reserve bank. Hence, as [Chart 3] shows, the present basis for bank credit consists of gold plus Federal reserve credit. Federal reserve bank credit is an elastic buffer between the country's gold supply and bank credit. . . .

Chart 4 is similar to Chart 3. It shows the initial impact of gold inflows in causing an increase in the money supply through an increase in gold certificates. This initial increase in money, however, was offset by a decline in Federal Reserve notes.<sup>8</sup> The net result was a roughly steady money supply and approximate stability of the price level.

<sup>8</sup> Gold certificates were warehouse receipts for gold. Federal Reserve notes were currency issued by the Fed. Both circulated interchangeably as money.

Chart 3



Note: Reproduced from *Stabilization*, Part I, p. 471.

In 1924, the central concern of Governor Strong that gold inflows would cause inflation was replaced by a concern for economic recession. He testified in the Strong Hearings that he had the Federal Reserve purchase government securities in order to relieve “pressure for loan liquidation,” to cause “a somewhat lower level of interest rates in this country at a time when prices were falling generally,” and “to check the pressure on the banking situation in the West and Northwest and the resulting failures and disasters” (*Stub.*, pt. 1, 1926, p. 336).

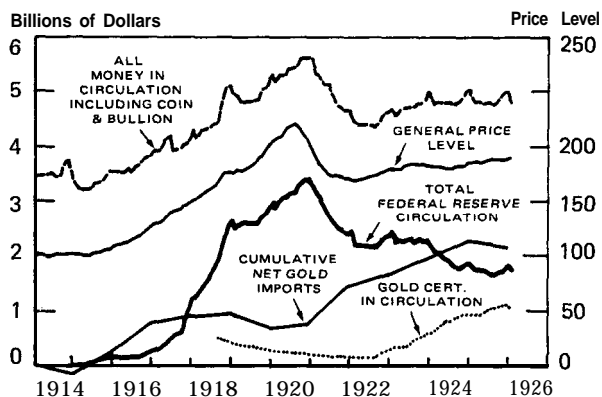
*Governor Strong and the Mandate for Price Stability* Governor Strong was sympathetic with the goal of price level stability. He viewed his own policy as having been directed toward this objective (*Stub.*, pt. 1, 1926, p. 307) :

Mr. Williamson. Do you think that the Federal Reserve Board could, as a matter of fact, stabilize the price level to a greater extent than they have in the past by giving greater expansion to market operations and restriction or extension of credit facilities?

Governor Strong. I personally think that the administration of the Federal reserve system since the reaction of 1921 has been just as nearly directed as reasonably human wisdom could direct it toward that very object.

Chart 4

### MONEY IN CIRCULATION IN THE UNITED STATES, CUMULATIVE NET GOLD IMPORTS, AND THE GENERAL PRICE LEVEL, INCLUDING WHOLESALE AND RETAIL PRICES, RENTS, AND WAGES



Sources: General price level-Computed by the Federal Reserve Bank of New York.  
Money in circulation-Circulation statement of the United States Treasury.  
Federal reserve note circulation-Federal Reserve Board.  
Cumulative net gold imports-Compiled from reports issued by the Department of Commerce.

Note: Reproduced from *Stabilization*, Part I, p. 332.

He believed that the Fed exerted a major influence on the price level. In the following passage, Strong explained his view of the way in which the Federal Reserve **raises** the price level (*Stub.*, pt. 1, 1926, pp. 578-79) :

... the first reaction from cheap money will be felt in the security markets. . . . when we have very cheap money, corporations and individuals borrow money in order to extend their business. That results in plant construction ; plant construction employs more labor, brings in to use more materials for plant construction, and gives more employment. It may cause some elevation of wages. It creates more spending power; and with that start it will permeate through into the trades and the general price level.

Governor Strong, however, was concerned that the control of the Federal Reserve over the price level was imprecise. He offered the following explanation for lack of complete control by the Federal Reserve over the price level (*Stub.*, pt. 1, 1926, p. 482) :

Professor Fisher's equation is that the volume of money multiplied by its velocity equals the price level multiplied by the volume of trade, a very simple equation to understand except when you attempt to understand what “velocity” means, that is the speed with which money turns over. You

are not dealing then with a mathematical proportion, but with the state of mind of people, and let me express it, if I may, in this way. . . . We will divide all the currency, the hand-to-hand money that circulates in the retail trade, etc., into two classes. One class we will call dynamic and the other class we will call static. The dynamic is the portion which is actively used and which has an effect upon the price level. The static portion is that not used and not spent and which presumably has no effect on prices. Let us suppose that in this country we have a per capita circulation roughly of \$50 and that it is the habit of all the people in the country, on the average, to have \$10 of their \$50 per capita, tucked away in the chimney at home. It does not perform any function whatever so far as having an effect on prices. Then, suddenly, by reason of some shock to confidence or some development which makes people rather more economical and careful about contracting ahead, they take \$15 more and put it up the chimney. You increase the amount of static money from \$10 per capita to \$26 per capita and reduce the dynamic proportion from \$40 to \$25, that would have some of the effects of a sudden contraction of the currency and doubtless prices would fall.

Governor Strong was afraid that if the Federal Reserve had an explicit mandate to stabilize the price level and if its ability to control the price level were imprecise, misses of the targeted value of the price level would subject the Federal Reserve to political attacks, which would weaken the Federal Reserve as an institution. Irving Fisher (1934, p. 151) reported the following conversation with Governor Strong (apparently in the spring of 1928) :

In talking with him, he said, "Don't compel me to do what I am doing. Let me alone and I will try to do it. If I am required by law to do it, I don't know whether I can, and I will resign. I will not take the responsibility." I said to him, "I would trust you to do it without a legislative mandate, but you will not live forever, and when you die I fear this will die with you." He said, "No, it will not."

This quotation illustrates the gap between Governor Strong, who as a policymaker was inclined to depend upon individual discretion and good judgment in order to ensure desirable policy, and the proponents of the Strong bill like Irving Fisher, who looked to institutional arrangements to ensure desirable monetary policy. The compromise between Governor Strong and Congressman Strong over the language of the Strong bill was an attempt by both sides to bridge this gap. This compromise is discussed in the final section of the paper.

*Governor Strong and the Gold Standard* Governor Strong believed that the international gold standard was in the process of being restored permanently. He preferred the gold standard to the managed cur-

rency envisioned by Congressman Strong and his supporters. First, Governor Strong felt that the United States would benefit from stability abroad through a worldwide return to the gold standard (*Stab.*, pt. 1, 1926, p. 518) :

I really have a feeling in my own mind that the prosperity of our country is so wrapped up in general world prosperity that . . . the best that we can do for our people is to try in any way that we can to maintain these markets on which our prosperity so largely depends. . . . I earnestly believe that the greatest service that the Federal reserve system is capable of performing to-day in this matter is to hasten . . . monetary reform in the countries that have suffered from the war.

Second, Governor Strong believed that the government should not have the power to control the price level, and the gold standard was the accepted means of keeping this power from the government. Like other conservatives, Strong's attitudes in this respect had been determined by the perceived threat to social stability represented by the populist campaign of William Jennings Bryan. Strong had more faith in the automatic operation of a gold standard to limit inflation and to preserve social stability than he had in the managed currency envisaged by Congressman Strong, Irving Fisher, and others. The legislation of Congressman Strong endowed the Fed with the authority to control the price level. This legislation made stability of the price level the objective of monetary policy. Governor Strong, however, believed that the authority to control the price level would of itself create political pressure to use this authority to redistribute income, rather than to stabilize the price level. (*Stab.*, 1928, pp. 20-1 and *Stab.*, pt. 1, 1926, p. 295) :

. . . the gold standard is a much more automatic check upon excesses in credit and currency than is a system where gold payment, if you please, is suspended and it is left to the human judgment of men to determine how much currency shall be issued which they do not need to redeem in gold—do you see the distinction? And when you speak of a gold standard, you are speaking of something where the limitation upon judgment is very exact and precise and the penalty for bad judgment is immediate.

If the Federal reserve act is amended in these words, is it possible that the farmers of the country will be advised, or will be led to believe upon reading it, that a mandate has been handed to the Federal reserve system to fix up this matter of farm prices. . . . I am assuming what interpretation may be put upon it, and especially by the farmers. Is it possible that the farmers of the country will interpret this as an effort by Congress to place the responsibility upon the Federal reserve system for attending to the particular problem of

prices in which they are interested. . . . I am endeavoring to express some doubts about the effect of the bill on the minds of people who are not economists, and who really can not distinguish between individual prices and general prices.

## **The Policies of Adolph Miller and the Board**

*The 1923 Annual Report of the Federal Reserve System* At both sets of hearings on the Strong bill, 1926-1927 and 1928, the Federal Reserve Board was represented by Adolph C. Miller, a Board member since the inception of the Fed. Miller defended the view of policy advanced in the Board's 1923 *Annual Report*. This report had been written in part in response to criticism of the Federal Reserve made at the House hearings in 1922-1923 on the Goldsborough bill, a bill incorporating the "compensated dollar" plan of Irving Fisher for stabilizing the price level.<sup>9</sup> Miller referred to the 1923 *Annual Report* as "a reasoned interpretation of (Board) experience" and as "the fullest exposition of . . . the working principles and the attitudes of the Federal Reserve System" and had portions introduced into the Hearings. His defense of the annual report was repeated, in the first set of hearings, by E. A. Goldenweiser, Director of Research and Statistics at the Board, and, in the second set of hearings, by the latter's predecessor, Walter W. Stewart, who had been the Director when the 1923 *Annual Report* was written.

The authors of the *Annual Report* viewed the price level as a nonmonetary phenomenon.<sup>10</sup> The collapse of the gold standard did not necessitate the creation of an alternative institutional arrangement for determining the price level. The *Annual Report* denied Fed responsibility for the behavior of the price level or the quantity of money (Federal, 1924, p. 31) :

[The inoperability of the gold standard] has led to much discussion in the United States and elsewhere as to workable substitutes for the reserve ratio as guides to credit and currency administration. Particular prominence has been given in discussions of new proposals to the suggestion frequently made that the credit issuing from the Federal reserve banks should be regulated with immediate reference to the price level, particularly in such

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<sup>9</sup> Fisher's plan would have provided for regular adjustments to the gold content of the dollar in order to stabilize its purchasing power,

<sup>10</sup> Miller said of the rise in the price level in 1923 (Stab., pt. 2, 1927):

Our conclusion was, therefore, that prices were rising because manufactured goods were scarce. . . . The people were beginning to want goods again. . . . The goods were not there. Retail prices rose in response to that situation. . . .

manner as to avoid fluctuations of general prices. . . . it must not be overlooked that price fluctuations proceed from a great variety of causes, most of which lie outside the range of influence of the credit system. No credit system could undertake to perform the function of regulating credit by reference to prices without failing in the endeavor.

It is the view of the Federal Reserve Board that the price situation and the credit situation, while sometimes closely related, are nevertheless not related to one another as simple cause and effect; they are rather both to be regarded as the outcome of common causes that work in the economic and business situation. The same conditions which predispose to a rise of prices also predispose to an increased demand for credit. The demand for credit is conditioned upon the business outlook. Credit is created in increasing volume only as the community wishes to use more credit- hen the opportunity for the employment of credit appears more profitable,

According to the 1923 *Annual Report*, the criterion for evaluating the appropriateness of the quantity of credit extended by the Federal Reserve was maintenance of equilibrium between goods being produced and goods being purchased. This equilibrium would be maintained as long as credit was not used for speculative purposes (Federal, 1924, pp. 34-S) :

It is the belief of the Board that there will be little danger that the credit created and contributed by the Federal reserve banks will be in excessive volume if restricted to productive uses. . . . The characteristic of the good functioning of the credit system is to be found in the promptness and in the degree with which the flow of credit adapts itself to the orderly flow of goods in industry and trade. So long as this flow is not interrupted by speculative interference there is little likelihood of the abuse of credit supplied by the Federal reserve banks and consequently little danger of the undue creation of new credit. . . . the solution of the economic problem of keeping the volume of credit issuing from the Federal reserve banks from becoming either excessive or deficient is found in . . . the prevention of the uses of Federal reserve credit for purposes not warranted by the terms or spirit of the Federal reserve act.

It was argued that the policy recommended in the 1923 *Annual Report* could not be implemented by following explicit guidelines, but rather had to be implemented through the ongoing exercise of judgment (Federal, 1924, p. 32) :

No statistical mechanism alone, however carefully contrived, can furnish an adequate guide to credit administration. Credit is an intensely human institution and as such reflects the moods and impulses of the community-its hopes, its fears, its expectations. The business and credit situation at any particular time is weighted and charged with these invisible factors. They are elusive and can not be fitted into any mechanical formula, but the fact

that they are refractory to methods of the statistical laboratory makes them neither nonexistent nor nonimportant. They are factors which must always patiently and skillfully be evaluated as best they may and dealt with in any banking administration that is animated by a desire to secure to the community the results of an efficient credit system. In its ultimate analysis credit administration is not a matter of mechanical rules, but is and must be a matter of judgment--of judgment concerning each specific credit situation at the particular moment of time when it has arisen or is developing.

Miller commented on this excerpt, "I should say, so far as it may be said that anything in the nature of a formulated procedure exists in the Federal reserve system, that comes perhaps as near expressing it as anything" (*Stab.*, pt. 2, 1927, p. 636).

*Credit Administration* Miller criticized the validity of the assumptions underlying the Strong bill (*Stab.*, 1928, pp. 109, 348, and 180, respectively) :

One of those assumptions is that changes in the level of prices are caused by changes in the volume of credit and currency; the other is that changes in volume of credit and currency are caused by Federal reserve policy. Neither one of those assumptions is true of the facts or the realities. They are both in some degree figments-figments of scholastic invention-that have never found any very substantial foundation in economic reality, and less to-day in the United States than in other times.

. . . undertaking to regulate the flow of Federal reserve credit by the price index is a good deal like trying to regulate the weather by the barometer. The barometer does not make the weather; it indicates what is in process.

The total volume of money in circulation is determined by the community. The Federal reserve system has no appreciable control over that and no disposition to interfere with it.

Miller also made the case for allowing the Federal Reserve to operate a discretionary monetary policy (*Stab.*, 1928, p. 193) :

Mr. Strong. You think the law, then, could be changed so that it would read for the accommodation of commerce and business or at the will of the Federal Reserve Board?

Doctor Miller. It is the same thing.

Mr. Strong. I am afraid it *is*.

Doctor Miller. The phrase "accommodation of commerce and business" has always struck me as one of the rare inventions that occur occasionally in American statesmanship. Whoever was the author of that phrase did a magnificent thing. It is great language. The word "accommodation" is susceptible of the wisest interpretation and reaches the noblest of economic purposes.

*Board View of Open Market Operations* According to the Board's real bills view of the world, it was desirable that the initiative for changes in the reserves of the banking system lie with the public. Open market operations, where the initiative for reserve changes lay with the Federal Reserve, were considered either relatively unimportant or undesirable. In the Board's 1923 *Annual Report*, open market operations were considered important only as a way of determining whether the amount of bank credit extended was "excessive for the needs of trade," that is, was being employed in part for speculative purposes. Reserves from the discount window could only be obtained if they met the real bills criteria. If, therefore, the effect of an open market sale in draining bank reserves was offset by increased reserve provision arising from additional use of the discount window, credit provision was not excessive (Federal, 1924, p. 13). Miller repeated this contention with reference to the sale of securities by the Federal Reserve in 1923, in which the initial effect on bank reserves was offset by additional borrowing from the Federal Reserve (*Stab.*, pt. 2, 1927, p. 708) :

. . . it gave a fair indication that, in the judgment of the member banks, it [the amount of credit in use] was needed, because as cash was taken out of the market by the reserve banks the member banks **came right back to the Federal reserve banks and** rediscounted in substantially the same amount. We thus threw upon the member banks of the country the responsibility of exercising their judgment as to whether or not they should continue in use the existing volume of credit extended to their customers; that is, we threw upon them the responsibility of saying whether or not, from their knowledge of business conditions and the requirements of their customers, they were justified in coming to the Federal reserve banks and asking for this amount of credit or rediscounts.

The attitude of the Board toward open market operations was influenced by its rivalry with New York and by the fact that open market operations, as opposed to discount rate changes, were under the control of New York. This rivalry showed through in dialogue prompted by the eventual participation of Governor Strong in rewriting the language of the Strong bill (*Stab.*, 1928, pp. 212-13) :

Rep. Strong. . . . the language you refer to has been dictated and suggested by members of the Federal reserve system.

Doctor Miller. I regret to say that I do not think it is a very creditable exhibition of their understanding of the seriousness of this whole matter. . . . The Federal reserve system is a pretty big organization. There are many persons in it. We



have a considerable number of amateur economists, and from my point of view they constitute one of its dangerous elements. . . . There are altogether too many in and around it for the good of the system, and there has been some influx into the Federal reserve mind of half-thought-out ideas-notions almost metaphysical in their character. These have penetrated the minds of some of the operators of the Federal reserve system. . . . And I venture to say that some of the men whom you have consulted do not know what this is all about. These are high-sounding and captivating words you are using in your proposed amendment.

Mr. Strong. Of course, one of them has been Governor Strong.

Doctor Miller. Of course, he is a very able man. But when it comes to economic insight and understanding . . . that is very unusual in any group of men anywhere. . . .

The rivalry between the Board and New York increased in 1927 when a group of foreign central bankers (Norman, governor of the Bank of England ; Schacht, president of the German Reichsbank; and Rist, deputy governor of the Banque de France) visited New York to confer on policy with Governor Strong, but paid only a courtesy visit to the Board.<sup>11</sup> These bankers were concerned that the imminent return of France to the gold standard would produce an increased demand for gold and would require a restrictive policy on the part of European central banks. In particular, they did not want the New York Fed to allow rates to rise in the United States in response to gold outflows. Subsequent to this visit, the Open Market Committee engaged in open market purchases.

During the Hearings, Miller criticized these open market purchases as causing speculation in the stock market. He argued that the decline of the money supply in the 1920s indicated a redundancy of credit.

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<sup>11</sup>Miller implied that he, rather than Governor Strong, was better equipped to negotiate with European central bankers (Stab., 1928, pp. 165 and 237.):

Personally, I feel a deep interest in the state of the European world. I first saw Europe shortly after I was out of college, and I have tramped hundreds of miles in Europe. I know it; I know the people; I know the country, its lovely valleys, its impressive beauty; and above all I have a very tender and warm feeling for the peasantry of western Europe. But I also know something of European psychology. I have not travelled there simply for fun, but have observed something of their mental and emotional traits. . . .

There are apparently few Americans who make their first acquaintance with Europe in their maturity who are practically well equipped to deal with Europeans. . . . I am inclined to think, to use Mark Twain's phrase, that we have had a good many American "Innocents Abroad". . . .

Because the increased credit made possible by the open market purchases was in excess of the needs of trade, it was put to speculative uses (Stab., 1928, pp. 174 and 172) :

We are lower in the actual amount of money in circulation in the country than we have been since 1922. . . . at the same time that the Federal reserve bank was putting money into the market to offset the restrictive effects of gold exports, the country, because of reduced requirements for monetary circulation, was, so to speak, also putting money into the market, thus adding to the supply of basic credit. and giving rise to what, I think, can be very properly described as a plethora of money in the autumn and early winter of the year under review.

The money that was released by the Federal reserve banks to the open market through its policy of open-market purchases had to go somewhere. . . . the low money rates that resulted from Federal reserve policy, in the light of subsequent developments, appear to have been particularly effective in stimulating the absorption of credit in stock speculation. . . . I would say that cheap and easy money in the New York market the last autumn must be recognized to-day as having been a distinctly provocative factor in the remarkable speculative movement that has been in process now for several months.

Miller urged that the discount rate be considered the primary policy variable of the Federal Reserve (Stab., 1928, p. 125) :

. . . in my opinion the importance of discount policy as an instrument of credit regulation shall be emphasized by the Federal reserve henceforth and an abridgement of open-market operations as a primary instrument of credit policy. I am of the opinion that open-market operations have been the cause of almost as much mischief in credit and economic situations as of good.

## **A Preview of Policy During the Depression**

*Miller and Stewart* The aversion to the use of open market operations just described helps to explain the policy followed by the Federal Reserve during the Depression.<sup>12</sup> In other respects as well, the testimony offered in the Strong Hearings foretold the character of monetary policy during the Depression. Miller contended that the creation of an elastic currency with the founding of the Federal Reserve had made bank panics impossible. Contractions in

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<sup>12</sup>Miller remained influential during the Depression. Karl Bopp (1932) wrote, ". . . Mr. A. C. Miller, who seems to be the dominant figure in the Board, has stated that he is opposed to open-market operations . . . except as a 'surgical operation.'" [This quote is from Friedman and Schwartz (1963, p. 410).]

currency and credit had to be in response to a diminished demand on the part of the public (*Stab.*, pt. 2, 1927, p. 848 and *Stab.*, 1928, p. 193) :

. . . under the old condition these banks were working, so to speak, in a limited market, a market in which the total supply of money, practically speaking, was absolutely limited. Now, on the other hand, they conduct their operations in a market having great elasticity. That elasticity gives more assurance-it gives perfect assurance-that no matter how much in the way of balances maintained in the New York market by outside banks should be withdrawn, new money can always be put in the market in order to support such a withdrawal and prevent the old-fashioned collapse.

. . . such a thing as a currency and credit panic can not exist under the Federal reserve system.

Miller asserted the impotence of monetary policy during a depression (*Stab.*, pt. 2, 1927, pp. 840-41 and *Stab.*, 1928, pp. 182-83) :

. . . the moment currency became redundant it would be used to pay indebtedness at the Federal reserve bank. It comes right back to the Federal reserve bank. Every dollar a member bank gets from the reserve bank costs it something and there is no use to get money accumulating in its hands when there is no demand for it. . . . it is conceivable that credit and currency might become so redundant that they would carry their cash accumulations as idle balances at the reserve banks for some period of time pending the resumption of commercial demand for credit and currency. . . . You do not want to overlook the situations that we designate as credit plethora. Some one has to see the business outlook attractive before he will borrow money. People do not like to be in debt. They do not borrow simply because money is cheap.

. . . in a time of recession you can not stop the recession by the lowering of the discount rate, the cheapening of the cost of credit, or by making credit more abundant. . . . You have got to have a demand for something before you can either stimulate that demand or restrain it. And at a time when the business community does not want to make any business commitments, when it wants to reduce commitments, when it is hesitant about the business outlook, you can not do very much with your rate. . . . We must rid ourselves of the impression that lowering the discount rate will stimulate business when business is not in a mood to respond to stimulation. A part of the rare wisdom and the rarer skill in the application of discount policy is the knowing or sensing when you may and when you may not expect to get a response. It can not be done mechanically.

Stewart asserted the perverse effects from employing an expansionary monetary policy during a depression (*Stab.*, pt. 2, 1927, pp. 763 and 770-71) :

To test whether or not the credit condition is sound, one has to begin by determining the volume of production, and whether or not that production is moving promptly through the channels of distribu-

tion and whether or not inventories are accumulating. I can see, as an example, a situation where prices may not be advancing, but, on the other hand, declining, yet inventories of commodities were accumulating, and where, if additional credit were granted, it would be used for the purpose of adding to the stock, and would mean simply encouraging the accumulation of additional stocks.

To what extent, by an addition to credits at a time when prices are declining, not as an aftermath of war inflation but of maladjustments in business, can you cure the causes which lay back of declining prices? My point is that in such circumstances you take a chance of aggravating the very causes which are responsible for the declining prices. If stocks are accumulating and the mood in the community is speculative, then an attempt to use credit for the purpose of stabilizing prices is more likely to aggravate the causes responsible for the movement in prices. In instances where production has been proceeding at a rapid rate and prices decline and stocks accumulate, to pursue a policy of easing the money market simply makes possible a piling up on the shelves of inventories. To use the price index as a guide would tend to make credit conditions increasingly unsound. . . . But to assume that declining prices, which are, after all, largely a readjustment to take care of the mistakes made previously can be overcome by an additional extension of credit is more likely to add to the difficulties in the situation rather than to cure it.

Norris The views of George Norris, governor of the Federal Reserve Bank of Philadelphia, were typical of those of regional bank governors and help to explain monetary policy during the Depression. These views reflected the prevalence of the real bills doctrine in financial circles. They express the belief that the Federal Reserve cannot control the price level and that any such attempt would produce undesirable consequences (*Stab.*, pt. 1, 1926, p. 381) :

Prices, be they either of particular commodities or even the price level, are the result, in the first instance, of the constant struggle between the producer for high prices and the consumer for low prices. In that continuing struggle there are ebbs and flows as various cross currents intervene. . . . Therefore, all prices, either of a particular commodity, or of commodities in general, are affected by these various influences, and while I would not undertake to say-and I do not suppose anyone would-that the price level is not influenced somewhat at times by the cost of credit, it nevertheless is true that the cost of credit is a very small item in the cost of production or distribution of goods, and if you refine that still further to the difference in the cost of credit between borrowing money at 4 per cent and borrowing at 5 or 6, that difference becomes almost negligible. . . .

When the movement of prices is under way, it seems to me that it is always a doubtful and generally a dangerous thing for any outside agency to interfere with and attempt to alter the current. It is, to my mind, very much like erecting a dam to stop the flow of the natural current. To give a homely

illustration of that, several years ago, when the price of wool was dropping almost out of sight, the largest wool merchant in Philadelphia came into my office and said, in the course of the conversation, that he made his money when wool was going up and when wool was going down he was pretty nearly sure to lose money. "But," he said, "I would not give anybody 5 cents to try to stop this downward movement in the price of wool. I would much rather have it go down as low as it wants to go, because if it does that, then I know I can start in to buy and do business with perfect confidence, whereas, if anybody attempts to put a peg in it, I do not know whether the peg will hold or not and I can not deal with the same confidence."

### **The Appeal to Adolph Miller and to Governor Strong**

Prophetically, Congressman Strong appealed for his bill in order to avert the problems of a future deflation (*Stab.*, 1928, p. 363) :

we are seeking to put the world back upon a gold basis. I am very much afraid . . . it might bring a deflation in this country; and I would like to direct the Federal reserve system to continue the policy they have been pursuing of stabilizing [the price level].

Congressman Strong and his supporters wanted to institutionalize the policy of the New York Federal Reserve Bank, which they credited for the considerable price stability that existed after 1922 (*Stab.*, pt. 1, 1926, p. 600) :

Mr. Goldsborough. As I have understood the testimony on the part of Governor Strong and yourself [Carl Snyder], the policy of the Federal reserve system is to carry out just what would be this legislative direction. If that is the policy of the system and the system thinks it is a wise policy, but that it is doing it on its own initiative and exercising its own judgment in the matter of the welfare of the country, what is the objection to crystallizing, in legislation, that very policy in order to fortify the Federal reserve system in the future.

Miller remained unalterably opposed to the Strong bill. He not only objected to a policy of price level stabilization, but also to the limitation of discretion inherent in a clear Congressional mandate to guide monetary policy (*Stab.*, 1928, p. 252) :

Mr. Strong. Let me ask you a very frank question. Congress having given these tremendous powers to the Federal Reserve Board undirected, do you not think that the Congress on behalf of the people, ought to lay down a policy toward which these powers shall be used?

Dr. Miller. I regard the statement which occurs in section 14 of the Federal reserve act in connection with the board's power to determine discount rates, to the effect that such "rates shall be fixed

with a view of accommodating commerce and business," as giving about as good an indication of the whole complex of considerations and factors to be reckoned with by the Federal reserve system in charting its credit policy as you can get. The word "accommodation" is one that can be weighted with as big a meaning as the men who are chosen to administer the act are capable of conceiving.

Congressman Goldsborough appealed to Governor Strong to support the Strong bill (*Stab.*, pt. 1, 1926, p. 552) :

. . . the system has been, for the last few years, managed exceptionally well. I feel also that the mandates of the Federal reserve act did not require -did not demand- of the Federal reserve system a great many of the things which you have told us the Federal reserve system has done to stabilize conditions . . . in other words, the human element has entered very largely into the practical management of this system. That human element, however, changes in time. It might not be as adequate as it is now. It might be more subservient to powerful influence than it is now, and, as I understand legislation of this character, it is for the purpose if assisting, if it has any purpose at all, the Federal reserve system in maintaining a high standard of independence from any influences which would tend to an undue exoansion of credit, which, of course, results in an undue period of deflation.

This appeal was repeated by Congressman Strong (*Stab.*, pt. 1, 1926, pp. 569 and 601) :

I think Governor Strong has convinced every member of this committee . . . that the Federal reserve is now properly trying to bring about stabilization of the financial condition of the country, and I believe they have been doing it satisfactorily for several years. But condition; might change; Governor Strong might not always be at the head of this great Federal Reserve Bank of New York City; there might be others at the head of it, with different views, who do not feel that they ought to use the powers that Congress has given them in the Federal reserve system to try and bring about a condition of stabilization. Therefore, it seems to me that it would be proper for Congress to direct, as a matter of policy, that the Federal reserve system should be by statute made to adopt this policy; and if a year from now, Governor Strong, you should not be at the head of the great reserve bank of New York, and they should have a different idea, and not use the powers they now have to try to bring about stable conditions . . . then it would be very practical and helpful to have that provision in the law.

. . . suppose Governor Strong should pass away and [deflationary] action should be taken, as was taken shortly after the war . . . would not then the people say, -"Why did not Congress direct that board to keep on doing the work they were doing?"

Governor Strong responded positively to these appeals (*Stab.*, pt. 1, 1926, p. 553) :

If I could find it possible to frame language which would accomplish the very desirable purpose that you have described and which I stated at the first hearing by saying I thoroughly agreed with, I would not hesitate to do it, and with the approval of my associates, because I am simply one small element in the system-one bank-1 would not hesitate to do it, and I do not know but what it may be possible to devise some language. . . . I will try to if you would like to have me.

Congressman Strong and Governor Strong redrafted the mandate of the Strong bill to instruct the Federal Reserve to maintain "stable purchasing power of the dollar, so far as such purposes may be accomplished by monetary and credit policy." This language included a mandate for monetary policy of price stability, but accommodated the concern of Governor Strong that control by the Federal Reserve over the price level might be imprecise. Irving Fisher wrote (Fisher, 1934, p. 171) :

The final draft of the bill was made by the two Strong's at Atlantic City where Congressman Strong visited Governor Strong who was ill. Governor Strong reserved official approval of this final draft in order first to confer with his associates. As soon as he was able to come to Washington, he conferred with the Federal Reserve Board in company of Congressman Strong and Professor Commons. The Board disapproved of the bill and Governor Strong felt bound by their action.

Governor Strong's last public appearance was at the hearings on the Strong bill in spring 1928. He died that fall.

### Concluding Comments

As revealed in the hearings on the Strong bill, a sharp divergence existed within the Federal Reserve over appropriate monetary policy. After the death of Governor Strong, effective control over monetary policy passed out of the hands of the New York Bank and into the hands of individual members of the Federal Reserve Board and of individual governors of the regional Banks. This shift in control over policy determined the character of monetary policy during the Depression. Later, Irving Fisher, commenting on the Depression, said, "I myself believe very strongly that this depression was almost wholly preventable and that it would have been prevented if Governor Strong had lived, who was conducting open-market operations with a view of bringing about stability" (Fisher, 1935, p. 517).

The debate over rules versus discretion in monetary policy has continued unabated to the present. A primary issue in this debate is how best to ensure

the continuation of desirable monetary policy over time. To this end, proponents of rules **urge** institutional guarantees. These guarantees take the form of explicitly legislated, meaningful objectives for monetary policy. Proponents of discretion urge reliance upon institutional traditions that are built up over time. These traditions develop over time out of practical experience.

In this article, a striking episode was examined in which monetary policy was determined by chance as much as by conscious public debate. Whether this episode retains a relevance for the present, or whether subsequent changes have rendered it irrelevant, will be debated. Hopefully, however, such debate will contribute to an understanding of how to provide for continuity over time in desirable monetary policy.

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# CBO AND OMB PROJECTIONS, ADJUSTED FOR INFLATION, SHOW FEDERAL BUDGET DEFICIT UNDER CONTROL\*

*William G. Dewald†*

## **Introduction**

The main point of this article is to illustrate how standard measures of the federal budget deficit may be deceptive inasmuch as they do not adjust the budget for inflation. The article takes budget projections of the 1986 Congressional Budget Resolution made in August 1985 by both the Congressional Budget Office and the Office of Management and Budget and deflates them, that is it expresses them in inflation-adjusted terms. No attempt is made to evaluate the quality of these deficit projections for fiscal years 1986 through 1990. But even if the more conservative of the two projections should prove to be correct, what emerges from the analysis is the very optimistic interpretation that the budget deficit problem, as defined by the budget offices, would essentially be eliminated in real terms over the next few years without the need to raise taxes or cut social security benefits. This view is sharply in contrast with the general interpretation of the budget deficit problem that has appeared in the press. (See accompanying Box.)

## **Why Adjust Budget Deficits for Inflation?**

It is extremely important to take inflation into account in evaluating the real effect of deficits on the economy. What appears to be a deficit may turn out to be a surplus when adjusted for inflation. The real budget deficit is the dollar deficit adjusted for the effect of inflation not only in increasing the interest rate at which the government borrows but also in

reducing the real value of outstanding government debt to be financed. The real deficit represents the net claim on credit markets for funds to finance the federal government. Eliminating the deficit in real terms could free credit markets both in the United States and other countries from supporting large annual net flows of funds to the federal government.<sup>1</sup> Lower real interest rates both in the United States and other countries would be a prospect to the extent that deficits in recent years had kept rates extraordinarily high.<sup>2</sup>

Deflating the budget deficit removes the effect of inflation on both the interest rate at which the government borrows and the value of its outstanding debt. This amounts to recalculating government interest payments in real terms. Suppose the government borrowing rate is 10 percent and the outstanding debt is \$1,500 billion as is approximately true for the current fiscal year. Nominal interest payments thus would contribute \$150 billion to the deficit. The 10 percent nominal interest rate includes an inflation premium to compensate lenders for depreciation in the real value of their claims to future repayment by borrowers. Consequently an increase in inflation would increase the deficit because inflation is reflected in nominal interest rates as in recent experience. On the other hand an increase in inflation would decrease the real cost of financing government debt because of two fundamental gains to the government attributable to inflation. One is that it would collect additional taxes from recipients of increased interest income on government securities due to inflation. The other is that inflation reduces the real value of its outstanding debt, thereby reducing its claim on

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\* The Review offers this article in the belief that readers should be aware of the widest spectrum of opinion on such key policy issues as the federal deficit. The views expressed herein are solely those of the author and not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

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<sup>1</sup>Gerald P. Dwyer, Jr., "Federal Deficits, Interest Rates, and Monetary Policy," *Journal of Money, Credit and Banking*, Part II (November 1985), pp. 655-81.

<sup>2</sup>William G. Dewald, "Federal Deficits and Real Interest Rates: Theory and Evidence," *Federal Reserve Bank of Atlanta, Economic Review* (January 1983), pp. 20-29.

### **The Deficit Problem: Views from the Press**

Jane Seaberry, "CBO Cuts Forecast on Deficits," *The Washington Post*, August 16, 1985, p. E1.

[ CBO Director Rudolph] "Penner's enthusiasm for the resolution contrasted with remarks by members of Congress. The leaders of the House and Senate Budget committees said the resolution was the best that could be done under the circumstances, and high deficits would persist unless taxes were raised or major benefits programs such as social security were cut.

"President Reagan said the budget compromise marked the beginning of the deficit-reduction process and this week he vowed to seek deeper cuts in spending."

Haynes Johnson, "The 134-Mile-High Stack," *The Washington Post*, September 22, 1985, p. A3.

"The forecasters say the geometric symmetry of our debt will continue to circle neatly ever upward. In 5 more years, on our present course, . . . the total national debt will have jumped again from \$2 trillion to \$3 trillion, a tripling of the debt in less than a decade.

"Well, I leave it to experts in the 'dismal science' of economics to sort out the theoretical and technical hows and whys of all this. But you don't have to be an expert to get the meaning of this blunt message. We're hurtling pell-mell into debtor status at all levels of American society, and no amount of smiles and soft soap from the White House can keep this news from being understood."

Helen Dewar, "Reagan Budget Policies Blasted on Both Sides," *The Washington Post*, September 25, 1985, p. A2.

"Why is he [President Reagan] on tax reform when he should be on deficits? Why does he undercut the [Senate] budget resolution? asked [Senator David F.] Durenberger [R-Minn] in reference to Reagan's spurning of a Senate budget that would have raised taxes and cut Social Security to achieve larger long-term deficit reductions than Congress ultimately approved.

"Similar rumblings on the deficit issue came during the weekly Senate Republican caucus luncheon dominated by appeals for further action to contain deficits. These included interest in a plan by Sens. Phil Gramm (R-Tex) and Warren B. Rudman (R-N.H.) to force spending cuts sufficient to balance the budget by fiscal 1990."

Bob Setter, *Los Angeles Times*, September 30, 1985, sec. 1, p. 4.

"Former budget director David Stockman called Sunday for a tax increase of at least \$100 billion a year to help reduce the federal budget deficit and prevent what he called 'traumatic economic dislocations.'

" 'If we're going to get out of this situation and restore any semblance of national solvency and fiscal discipline, it's going to take a very major tax increase, larger than we've ever had or contemplated before,' Stockman said."

resources to finance expenditures. If the nominal interest rate on government debt is 10 percent and the marginal tax rate on interest income is 30 percent,<sup>3</sup> as is approximately true today, the effective interest rate on government borrowing which incorporates the feedback of tax receipts is only 7 percent [10 percent x (1-.3)]. The effective borrowing rate which incorporates a 4 percent inflation rate is only 3 percent [10 percent x (1-.3) - 4 percent].<sup>4</sup>

Essentially adjusting the deficit for inflation eliminates \$45 billion of the \$150 billion of nominal interest payments because of a feedback of taxes on interest income and \$60 billion because of depreciation in the real value of the outstanding debt. Assuming the noninterest part of the deficit (the so-called primary deficit) was balanced, the deficit would not be \$150 billion (the nominal interest payments on the debt) but only \$45 billion (the real after-tax interest cost of financing the debt if the marginal tax rate is 30 percent and inflation is 4 percent). The effective real interest rate on financing the government debt would thus not be 10 percent but only 3 percent.

### Federal Deficits and Debt, 1952-1974

Chart 1 records the nominal budget deficit as a percentage of GNP. This deficit ratio typically has risen during recessions and fallen during expansions. Until 1975 deficits generally peaked during recessions at about 2 percent of GNP as in 1953, 1958, and 1971. There were occasional surpluses (negative deficits) as in 1955-57, 1960, and 1969. Nevertheless there were more and larger deficits than surpluses. As a consequence the publicly held federal debt increased from \$218 billion in 1952 to \$343 billion in 1974, a 2.2 percent average annual increase. But GNP grew at a faster rate, 7.0 percent on the average. Chart 2 shows the ratio of publicly held federal debt as a percentage of GNP. It fell from over 60 percent in 1952, a level that reflected financing World War II and the Korean War, to a level of less than 24 percent in 1974 before the onset of the deficit problems that followed.

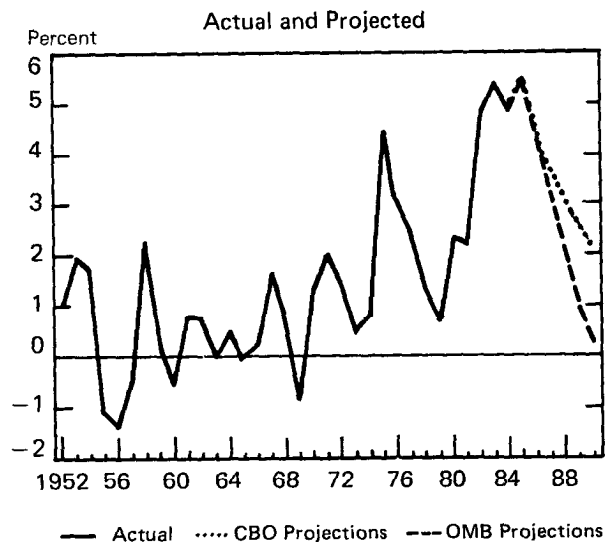
### Bad News on the Deficit: Observations, 1975-1985

Charts 1 and 2 also document how dramatically the federal deficit and debt picture changed from 1975

<sup>3</sup> U.S. Treasury Department, Private communication.

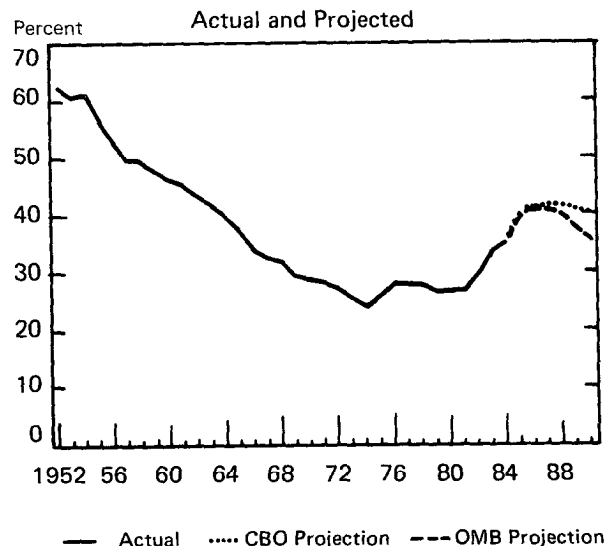
<sup>4</sup> William G. Dewald, "Government Deficits in a Generalized Fisherian Credit Market," Departmental Memorandum, International Monetary Fund, August 30, 1985.

Chart 1  
FEDERAL NOMINAL BUDGET DEFICIT  
AS PERCENT OF GNP



through 1985. There were no surpluses and much larger deficits relative to GNP than previously had been observed, for example, 4.5 percent in 1975 and an unprecedented string of about 5 percent deficits the past four years. The publicly held federal debt more than quadrupled from \$343 billion in 1974 to \$1,522 billion in 1985, an 11.6 percent annual increase. This was significantly more than the GNP

Chart 2  
PUBLICLY HELD GOVERNMENT DEBT,  
PERCENT OF GNP



growth rate. Consequently the ratio of publicly held federal debt to GNP rose from a low of 23.9 percent in 1974 to a high of 39.4 percent in 1985. That is the bad news that still pervades the general perception of the budget deficit situation in the United States.

### Good News on the Deficit: Projections, 1986-1990

The good news is that actually implementing the 1986 Congressional Budget Resolution—which promises to cut both defense and domestic spending programs but to leave taxes and social security essentially unchanged—would be enough to substantially reduce budget deficits and start shrinking federal debt relative to GNP. Additional domestic spending cuts such as the Administration has proposed could significantly speed the process. So would the tax hikes favored by a number of Senators and Congressmen.

Table I gives some sense of the magnitude of the good news in the Congressional Budget Resolution. In February CBO projected deficits of more than 5 percent of GNP with federal debt growing faster than GNP as far as it could see. By contrast, in August CBO projected that implementing the 1986 Congressional Budget Resolution coupled with its own more optimistic assumptions about interest rates would cut the deficit from 5.2 to 4.2 percent of GNP in the current fiscal year and from 5.3 to 2.1 percent

by 1990. Based on more optimistic assumptions about both economic growth and reductions in federal spending, in August OMB projected that the deficit to GNP ratio would fall to a mere 0.3 percent by 1990. The CBO and OMB projections of the budget deficit as a percent of GNP are plotted in Chart 1. They show a significant decline in the deficit ratio, but CBO projects the deficit declining by 1990 only to 2.1 percent of GNP. Before 1975 this had represented not a relatively low but a relatively high deficit ratio over the business cycle. Nevertheless, as Chart 2 shows, both CBO and OMB were projecting that the debt to GNP ratio would peak and start to decline beginning in 1988, thus restoring the normal peacetime pattern of declining debt to GNP ratios that had been observed from 1952 through 1974. An implication of these projections of declining debt to GNP ratios is an elimination of the federal deficit in inflation-adjusted terms as explained in the next sections.

### The 'Real' Good News: Real Deficits Projected to End

This article explains why, when inflation is taken into account, even the less optimistic CBO projections of a deficit to GNP ratio falling to 2.1 percent by 1990 imply that the federal deficit in inflation-adjusted terms would essentially be eliminated. The more optimistic OMB projections imply significant real budget surpluses in 1989 and 1990. Further reductions in federal spending or increases in taxes than embodied in the Congressional Budget Resolution would imply even larger surpluses.

### Adjusting Deficits for Inflation: An Example

To lay the groundwork for calculating the real budget deficit, consider some hypothetical numbers. Suppose a borrower owes \$20,000 and promises to repay the principal and 5 percent interest (\$1,000) at the end of a year. What the \$21,000 repayment is worth in real terms depends on inflation. If inflation were 10 percent, \$21,000 would be worth only \$19,090.91 ( $\$21,000/1.10$ ) in inflation-adjusted dollars. The borrower would have struck a good bargain and the lender a bad one because the real interest rate would have turned out to be a negative 4.5 percent ( $-\$909.09/\$20,000$ ).

If inflation were correctly anticipated, lenders would not accept such bad bargains. Suppose 10 percent inflation is expected and lender and borrower negotiate a 15.5 percent nominal interest-rate. This

Table I

#### CBO PROJECTIONS OF FEDERAL DEFICITS AND DEBIT HELD BY THE PUBLIC, 1985-1990

(As a percentage of GNP)

|      | Federal Budget Deficit to GNP |        | Federal Debt Held by the Public to GNP |        |
|------|-------------------------------|--------|--|--------|
|      | February                      | August | February                               | August |
| 1985 | 5.6                           | 5.5    | 39.6                                   | 39.6   |
| 1986 | 5.2                           | 4.2    | 41.8                                   | 41.1   |
| 1987 | 5.2                           | 3.7    | 44.0                                   | 41.7   |
| 1988 | 5.1                           | 3.0    | 46.0                                   | 41.6   |
| 1989 | 5.2                           | 2.5    | 47.9                                   | 41.1   |
| 1990 | 5.3                           | 2.1    | 49.7                                   | 40.2   |

Sources: Congressional Budget Office, *The Economic and Budget Outlook*, February 1985, Table E-2, p. 160; and Congressional Budget Office, *The Economic and Budget Outlook: An Update*, August 1985, Summary Table 4, p. xxi and Summary Table 5, p. xxi.



would yield a nominal return of \$3,100 on \$20,000. Thus the real or inflation-adjusted return would be only \$1,000 ( $\$23,100/1.10 - \$20,000$ ) which is a 5 percent real rate. The real cost of financing the \$20,000 of debt is not 15.5 percent but only 5 percent. The \$23,100 of debt including nominal interest in current dollars at the end of a year amounts to only \$21,000 of debt in inflation-adjusted dollars which are dollars calculated to have the same purchasing power as at the beginning of the year. To continue the hypothetical example, the interest cost of financing his debt in current dollars or nominal terms would be \$3,100-his nominal interest cost. But the change in his debt in inflation-adjusted dollars or real terms would be only \$1,000 which is the net cost of financing the loan including both nominal interest payments and depreciation in its real value.

### Real Budget Deficit Calculations : 1952-1990

These very same principles apply in translating the federal government deficit in current dollars into real or inflation-adjusted dollars. The easiest way to do this correctly is to calculate the real federal deficit as the change in the inflation-adjusted (deflated) value of the publicly held federal debt.<sup>5</sup> Federal government outlays totaled \$851.8 billion and revenues \$666.5 billion in fiscal year 1984. Its nominal deficit was the difference which rounded out to \$185 billion. Its real deficit was much less. The reason is that 3.8 percent inflation reduced the real value of \$1,142 billion of publicly held debt outstanding by \$42 billion in inflation-adjusted dollars. Thus the real deficit was only \$136 billion, that is,

$$\frac{\$185 \text{ billion} - (.038 \times \$1,142 \text{ billion})}{1.038}$$

in terms of 1983 prices. That is still a comparatively large number. As shown in Chart 3, it is 4.0 percent of real GNP. However, it is considerably less than the 5.2 percent ratio of the nominal deficit to GNP, a figure that does not adjust the deficit for inflation.

<sup>5</sup>Federal debt held by the public is defined to include Federal Reserve holdings. There is a close correspondence, especially in recent years, between the amount of base money held by the public and Federal Reserve holdings of federal debt. Thus, federal debt held by the public approximates the sum of privately held federal interest bearing debt plus federal noninterest bearing debt (base money). Inflation depreciates the real value of both categories of debt and thus reduces the real cost of financing the government.

Michael Dotsey's article in the previous *Economic Review*<sup>6</sup> surveys the theoretical literature regarding the effect of budget deficits on the economy. He explains how optimal deficits would account not only for inflation as in the present article but also for the business cycle and for secular factors affecting real interest rates; The business cycle, as has been mentioned, is important to the extent that deficits normally rise when output is below normal as in the early 1980s and fall when output is above normal. Dotsey cites a recent *Wall Street Journal* article by Robert J. Barro<sup>7</sup>, a principal contributor to the literature on deficits, in which he estimated that the 1984 budget deficit ratio was not unusually high because two percentage points of it was attributable to inflation and about one and one-half percentage points to cyclical factors. By comparison, the present paper estimates the effect of inflation on the budget deficit but makes no attempt to calculate the effect of other factors. This is in keeping with CBO and OMB out-year projections which do not account for the business cycle but are averages that are expected to prevail.

Chart 3 shows that real deficits were generally much smaller than the nominal deficit over the years 1952-1985, especially when inflation increased so very much in the late 1970s and early 1980s. Even though inflation was comparatively low in 1953-1974, as Chart 4 shows, adjusting for inflation makes a big difference in the deficit picture. There were real surpluses (negative deficits) in 16 of these 23 years in contrast to only 7 nominal surpluses. In the years since 1974 there have been no nominal surpluses at all, yet there were real surpluses owing to high inflation in each of the years 1978 through 1981. Substantial real deficits of 3 to 4 percent were encountered only in the years 1982 through 1985 when lenders were finally demanding and getting interest returns that compensated them: for actual inflation.

The effective after-tax real interest rate at which the government borrows is plotted in Chart 5.<sup>8</sup>The

<sup>6</sup>Michael Dotsey, "Controversy over the Federal Budget Deficit: A Theoretical Perspective," Federal Reserve Bank of Richmond, *Economic Review* (September/October 1985), pp. 3-16.

<sup>7</sup>Robert J. Barro, "A Deficit Nearly on Target," *Wall Street Journal*, January 29, 1985, p. 32.

$$^8 r = i(1 - \tau) - \pi$$

where

- r = after-tax real interest rate
- i = before-tax nominal interest rate
- $\tau$  = tax rate
- $\pi$  = inflation-rate

Chart 3

**NOMINAL AND REAL FEDERAL BUDGET DEFICITS AS PERCENT OF GNP**

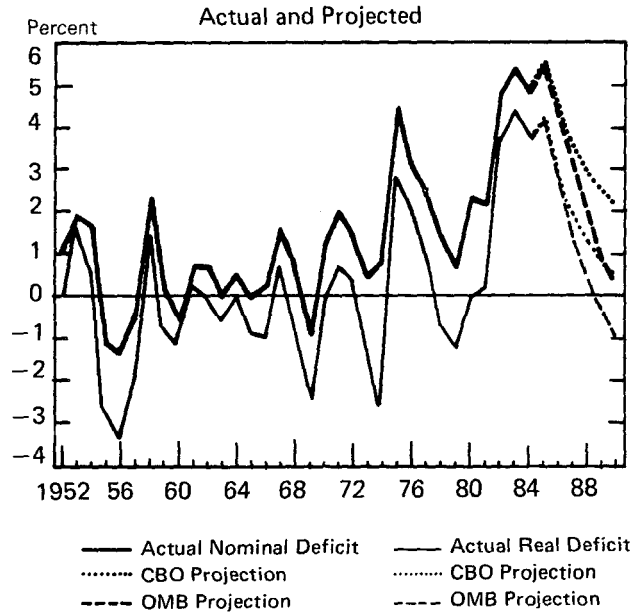


Chart 5

**REAL AFTER-TAX GOVERNMENT BORROWING RATE**

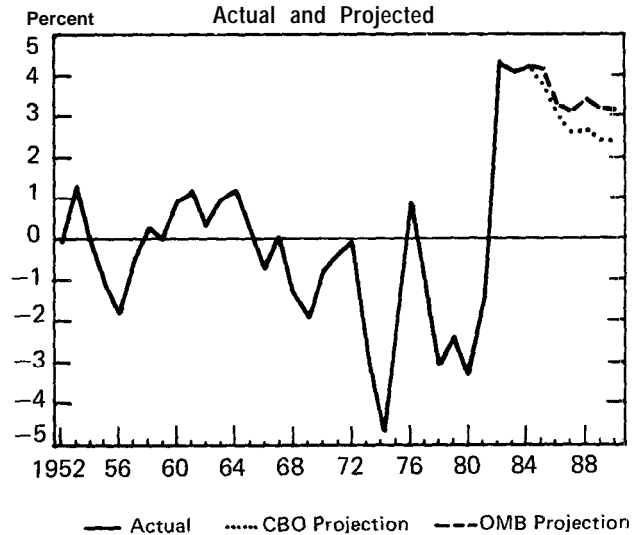
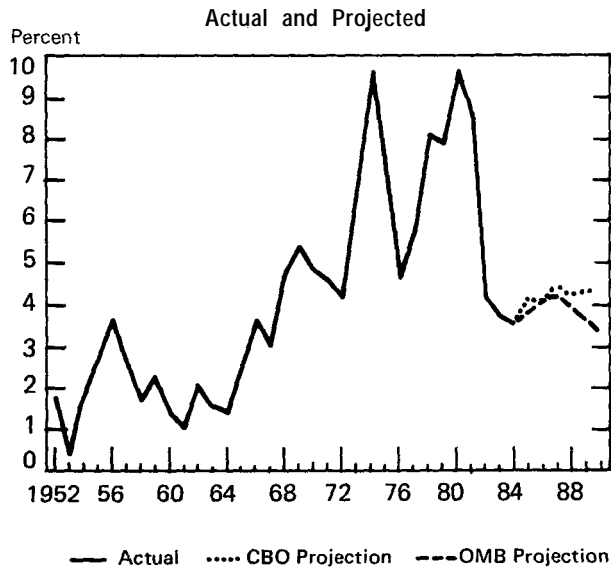


Chart 4

**INFLATION**



reason why the net interest cost on government borrowing is an after-tax interest rate is that the government collects tax revenue from taxpayers who earn interest on government securities. As mentioned, if the government pays a 10 percent before-tax rate but collects 30 percent of interest income in taxes, its effective interest cost rate would be 7 percent [10

percent x (1-.3)]. It is essentially the same rate at which taxpayers earn interest income. Taking inflation into account Chart 5 shows that the after-tax real interest rate on government securities was low, generally negative, from the middle 1960s through the 1970s and early 1980s as inflation accelerated. Only since 1982 have after-tax real rates at which the government borrows and taxpayers lend been positive and only since then have there been persistently high real deficits.

By incorporating such effective real interest costs of financing the federal government debt in calculating real deficits, Chart 3 shows how both the CBO and OMB projections of budget deficits embodied in the 1986 Congressional Budget Resolution would cut the deficit in 1988-1990 to well within the range of variation that was observed in the 1950s and 1960s which is the main point of the present article. To the extent that high real interest rates have been associated with high real deficits, these projections imply lower real interest rates in the future than were observed in recent years. The calculations used to adjust the CBO and OMB projections to inflation are shown in the Appendix.

**Conclusion**

My conclusion is that implementing the Congressional Budget Resolution would go a lot further in cutting back government spending and deficits than

is generally understood. My argument has used CBO and OMB assumptions and projections, but expressed deficits in inflation-adjusted terms. The deficit picture may be even brighter than these figures suggest when one considers that eliminating deficits might spur real growth and cut government borrowing rates more than have been projected by the budget offices. In any event, taking account of inflation, this article has shown that even CBO's conservative assumptions, rather than OMB's optimistic assumptions, imply that the 1986 Congressional Bud-

get Resolution promises to accomplish a lot more to alleviate the deficit problem than its authors seem to have recognized. Perhaps the budget resolution will be disregarded as has often been the case in recent years. But if it is implemented and if the economic assumptions of CBO and OMB prove to be accurate, then the federal budget deficit in inflation-adjusted terms would be eliminated without the necessity of raising taxes or cutting social security benefits. May one conclude that application of the "dismal science" need not yield dismal results?

Appendix Table I

CONGRESSIONAL BUDGET OFFICE DEFICIT PROJECTIONS

(Fiscal Years, Billions of Dollars, and Percent)

| (1)         | (2)             | (3)                | (4)       | (5)                  | (6)          | (7)   | (8)      | (9)                   | (10)                    |                          |
|-------------|-----------------|--------------------|-----------|----------------------|--------------|-------|----------|-----------------------|-------------------------|--------------------------|
| Fiscal Year | Nominal Deficit | Publicly Held Debt | Inflation | Price Level 1985=100 | Real Deficit | GNP   | Real GNP | Nominal Deficit ÷ GNP | Real Deficit ÷ Real GNP | Publicly Held Debt ÷ GNP |
| 1984        | 185             | 1,141.8            | 3.8       | 96.1                 | 147.4        | 3,581 | 3,728    | 5.2                   | 4.0                     | 36.7                     |
| 1985        | 210             | 1,313.0            | 4.1       | 100.0                | 156.2        | 3,840 | 3,840    | 5.5                   | 4.1                     | 39.6                     |
| 1986        | 175             | 1,522.0            | 4.1       | 104.1                | 108.2        | 4,138 | 3,975    | 4.2                   | 2.7                     | 41.1                     |
| 1987        | 163             | 1,701.0            | 4.4       | 108.7                | 81.1         | 4,462 | 4,106    | 3.7                   | 2.0                     | 41.7                     |
| 1988        | 143             | 1,861.0            | 4.2       | 113.2                | 57.3         | 4,813 | 4,250    | 3.0                   | 1.3                     | 41.6                     |
| 1989        | 132             | 2,002.0            | 4.3       | 118.1                | 38.9         | 5,190 | 4,394    | 2.5                   | 0.9                     | 41.1                     |
| 1990        | 120             | 2,133.0            | 4.3       | 123.2                | 23.0         | 5,597 | 4,543    | 2.1                   | 0.5                     | 40.2                     |
| 1991        | —               | 2,252.0            | —         | —                    | —            | —     | —        | —                     | —                       | —                        |

Source: Congressional Budget Office, The Economic and Budget Outlook: An Update, August 15, 1985.

Columns:

- (1) Table II-1, p. 64.
- (2) Figures are for the beginning of the fiscal year. Table II-1, p. 64.
- (3) Table I-3, p. 8.
- (4) Calculated from (3).
- (5)  $[(1) - \frac{(3) \times (2)}{100}] \div \frac{(4)}{100}$ .
- (6) Table I-3, p. 8.
- (7)  $(6) \div \frac{(4)}{100}$ .
- (8) (1) ÷ (6).
- (9) (5) ÷ (7).
- (10) Figures are for the end of the fiscal year. (2) ÷ (6).

Appendix Table II

## OFFICE OF MANAGEMENT AND BUDGET DEFICIT PROJECTIONS

(Fiscal Years, Billions of Dollars, and Percent)

| Fiscal Year | (1)<br>Nominal Deficit | (2)<br>Publicly Held Debt | (3)<br>Inflation | (4)<br>Price Level 1985=100 | (5)<br>Real Deficit | (6)<br>GNP | (7)<br>Real GNP | (8)<br>Nominal Deficit ÷ GNP | (9)<br>Real Deficit ÷ Real GNP | (10)<br>Publicly Held Debt ÷ GNP |
|-------------|------------------------|---------------------------|------------------|-----------------------------|---------------------|------------|-----------------|------------------------------|--------------------------------|----------------------------------|
| 1984        | 185.0                  | 1,141.8                   | 3.8              | 96.3                        | 147.0               | 3,581      | 3,717           | 5.2                          | 4.0                            | 36.7                             |
| 1985        | 211.3                  | 1,312.6                   | 3.8              | 100.0                       | 161.4               | 3,835      | 3,835           | 5.5                          | 4.2                            | 39.5                             |
| 1986        | 177.8                  | 1,515.2                   | 4.1              | 104.1                       | 111.1               | 4,146      | 3,983           | 4.3                          | 2.8                            | 40.9                             |
| 1987        | 139.3                  | 1,694.7                   | 4.2              | 108.5                       | 62.8                | 4,497      | 4,146           | 3.1                          | 1.5                            | 40.8                             |
| 1988        | 99.8                   | 1,834.0                   | 3.9              | 112.7                       | 25.1                | 4,869      | 4,320           | 2.0                          | 0.6                            | 39.7                             |
| 1989        | 53.6                   | 1,933.8                   | 3.6              | 116.8                       | -13.7               | 5,243      | 4,490           | 1.0                          | -0.3                           | 37.9                             |
| 1990        | 17.7                   | 1,987.4                   | 3.3              | 120.6                       | -39.7               | 5,605      | 4,647           | 0.3                          | -0.9                           | 35.8                             |
| 1991        | —                      | 2,005.1                   | —                | —                           | —                   | —          | —               | —                            | —                              | —                                |

Source: Office of Management and Budget, Mid-Session Review of the 1986 Budget, August 30, 1985.

Columns:

- (1) Table 2, p. 3.
- (2) Figures are for the beginning of the fiscal year. 1984.86: Table 23, p. 39.  
1987-90: Means of financing other than borrowing from the public assumed to be zero.
- (3) Table 3, p. 5.
- (4) Calculated from (3).
- (5)  $[(1) - \frac{(3)}{100} \times (2)] \div \frac{(4)}{100}$ .
- (6) Calculated for fiscal years from Table 2, p. 3.
- (7)  $(6) \div \frac{(4)}{100}$ .
- (8)  $(1) \div (6)$ .
- (9)  $(5) \div (7)$ .
- (10) Figures are for the end of the fiscal year.  $(2) \div (6)$ .