

**PRESIDENT CLINTON'S PROPOSALS FOR PUBLIC  
INVESTMENT AND DEFICIT REDUCTION**

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**HEARINGS**

BEFORE THE

**COMMITTEE ON WAYS AND MEANS  
HOUSE OF REPRESENTATIVES**

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

MARCH 9, 10, 16, 17, 23, 31; AND APRIL 1, 1993

**PART 2 OF 2**

MARCH 23, 31, AND APRIL 1, 1993

**Serial 103-27**

Printed for the use of the Committee on Ways and Means



U.S. GOVERNMENT PRINTING OFFICE

70-700

WASHINGTON : 1993

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For sale by the U.S. Government Printing Office  
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402

ISBN 0-16-041665-5

March 1993.

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**A Presentation to the  
COMMITTEE ON WAYS AND MEANS  
HOUSE OF REPRESENTATIVES OF  
THE UNITED STATES OF AMERICA**

*Hearings on*  
**President Clinton's Plan for  
Public Investment and Deficit Reduction**

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**Managing the Maturity Structure of Treasury Debt  
and The Role of Floating-Rate Treasury Bonds**

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**Summary**

I propose that the Treasury supplement its bond offerings with some new adjustable-rate coupon bonds. The adjustable coupon would be linked to the six month Treasury bill auction yield. Given the different magnitude of adjustable and fixed mortgage rates, the interest servicing costs would be dramatically lower for the floating-coupon bonds. This idea is already a proven winner in the corporate bond market. In addition to reducing servicing costs, the strategy will relieve some of the burden on the long-maturity fixed-coupon bonds. Reducing the supply of the fixed-coupon bonds will increase prices and decrease long-term yields. Another one percent reduction in long-term interest rates should help spur spending, construction and capital expenditures.

## **Managing the Maturity Structure of Treasury Debt and The Role of Floating-Rate Treasury Bonds**

CAMPBELL R. HARVEY

Today's adjustable-rate mortgages are much cheaper than their fixed-rate counterparts – more than 2% cheaper. With today's interest rate environment, it makes sense for the Treasury to consider issuing some adjustable-rate (or floating-rate) bonds. The interest cost of these bonds is sharply lower than fixed-rate coupon bonds. In addition to reducing the cost of servicing the government's debt, this policy will reduce long-term interest rates.

Indeed, this idea has been proven to be a winner in the corporate world. In the Eurobond market, there is a large supply (over \$100 billion) of floating-rate corporate bonds. The coupon adjusts according to a formula that is based on interest rates on Certificates of Deposit (in U.S. dollars) in London banks. Investment banks also earn profits by purchasing U.S. Treasuries and transforming them into floating-rate bonds. The Treasury could easily bypass the middleperson and issue their own floating rate bonds.

### **Effect on long-term rates**

The overwhelming economic goal is accelerate job creation and economic growth without sparking inflation. While considerable previous attention has been focussed on lowering short-term rates, most of the economic kick comes from long-term rates. Capital investment, consumer credit and mortgage rates are all closely linked to long-term rates – not short-term rates. Any plan that reduces long-term rates will increase investment, spending, housing starts and employment.

Indeed, we have seen long-term rates drop almost a full percentage point in the last four months. This is encouraging. However, long-term interest rates are still almost 4% higher than short-term rates. This huge spread is virtually unprecedented over the past 35 years.

There are a number of forces that affect long-term interest rates. Two of the most important forces are the supply of bonds and the market expectations of long-term inflation.

As a result, one way to lower long-term rates is to reduce the immense burden of long-term bonds in the market. As the supply is reduced, bond prices rise and interest rates fall. A reduction in the deficit will lessen the pressure on the long-term bond market and reduce rates. Another option is to shorten the maturity structure of the bond offerings, i.e. offer more short-term debt and less long-term debt. This would decrease long-term rates and increase short-term rates.

There is another possibility that would be successful that has received no at-

tention: The floating-rate bond scenario. Currently, the Treasury is issuing 30-year bonds with an effective yield of about 6.8%. If the Treasury issued a 30-year floating-rate bond (with a coupon rate that changes as short-term interest rates change), they could save at least 300 basis points (3%) in interest servicing costs in the first year. With an estimated \$1.41 trillion of debt hitting the market in 1993, the interest savings would be impressive if some floating-rate debt was issued.

The introduction of floating-rate bonds will diminish the supply of the long-term fixed rate bonds and hence long-term interest rates will decrease. Lower rates reduce the interest servicing cost of new long-term fixed-rate debt. In addition, the lower long-term rates provide an environment which encourages capital investment, spending and construction.

### **Specifics of the coupon adjustment**

I envision the floating coupon being determined by the weighted average of the 26-week Treasury bill auction yields over the previous six months. Given that this market is extremely liquid, it is unlikely that any one investor could manipulate the coupon rate. The weighting ensures that smaller auctions receive a lesser weight in determining the coupon rate.

This coupon setting strategy also dominates the inflation-indexed coupon. Last year there was some discussion of creating a *real bond*. The bond is real in the sense that the coupon increases as inflation increases and this allows investors to hedge against price inflation.

Unfortunately, the inflation rate is imprecisely measured and usually five weeks stale when it is released. As a result, a lot of people know the numbers before the official release date. In addition, the index numbers are subject to revision. Finally, the items that we include in the consumer's basket could change over time.

Resetting the coupon based on the Treasury bill auction bypasses all of the inflation-related difficulties. It creates a bond which has real qualities: as inflation increases so will short-term interest rates and hence the coupon rises on the floating-rate bond. Investors can use the floating-rate bond as an inflation hedge. In addition, the information on the coupon reset is easily calculated and readily available to all investors.

### **Expected inflation and interest rates**

The other important factor that determines long-term interest rates is expected inflation. Indeed, the present yield curve (difference between long-term rates and short-term rates) suggests that investors expect increased inflation in the future. The fact that the Treasury is offering 30-year bonds at 6.8% suggests that the Treasury agrees with the market!

If the Treasury really believes that inflation is going to be lower in the long term, then it does not make sense to finance at 6.8%. If the Treasury believes that the market is attaching an unreasonably high inflation premium to the long-term bonds, then it should pursue a strategy of shorter-maturity financing – or floating-rate bonds.

Adopting a policy of floating-rate bonds or shortening the maturity structure, sends a strong signal to the market that that investors' long-term inflation expectations are too high. I believe that initiating this policy would cause the market to revise their long-term inflation expectations and reduce long-term interest rates by another 1% – irrespective of the supply effect previously discussed.

There is another important angle on the floating-rate and shorter maturity financing: It provides the incentives for the government to be *policy consistent*. That is, a deviation from the policy of low inflation will be very costly. Higher inflation immediately raises short-term rates and, consequently, the Treasury must pay more in financing costs. Investors like these types of policies. There are strong built-in incentives to keep inflation under control. These are the types of policies that cause investors to revise their expectations of long-term inflation downward, thereby reducing long-term interest rates.

Finally, it is an *automatic stabilizing policy*. During the last five recessions, the yield curve has been positively sloping<sup>1</sup> (short-term rates lower than long-term rates). The interest servicing cost on floating-rate debt is cheapest exactly when the government needs extra funds for stimulative expenditures.

### **Floating-Rate Bonds vs. Operation Twist**

The floating-rate bond offers a number of advantages over the strategy of shortening the maturity structure of the Federal debt, also known as *Operation Twist*. Operation Twist refers to the strategy followed by the Federal Reserve in 1961. The Fed purchased long-term bonds and sold short-maturity securities. This reduced the supply of the long-term bonds and thereby raised their prices. Higher prices for the long-term bonds meant lower yields. The opposite happened with the short-term securities.

Operation Twist was designed to *twist* the yield curve. The objectives were to decrease long-term rates, to support the dollar and to provide the conditions for accelerated economic growth.

Of course, if the Federal Reserve mounted the same strategy today, it would surely fail. With over \$4 trillion in Treasury debt outstanding, the Federal Reserve is not a large enough player in the market to substantially impact the yield curve. However, it is possible that the Treasury could successfully initiate a modern-day Operation Twist.

Managing the maturity structure will have a significant effect on the shape of

the yield curve. Last summer, when long-term rates were more than 4% above short-term rates, I suggested that the Treasury consider a shift in the maturity structure.<sup>2</sup> By decreasing the reliance on (but not eliminating) the long-term bonds and replacing them with short-term bonds, I estimated that the Treasury could save over \$5 billion in interest servicing costs.

### **Downside of Operation Twist**

There is an important downside to Operation Twist. A shortening of the maturity structure will likely increase short-term rates. Increased supply of shorter maturity debt will drive prices down and yields upward.

Another disadvantage is that the Treasury must continually go to the market. That is, if a 30-year bond is replaced with 90-day bills, the Treasury must issue those bills 120 times. The Treasury bears the cost of going to the market each time. In addition, the investor must bear the transactions costs of rolling over the Treasury bills.

One possible solution is to combine a shortening of the maturity structure with some floating-rate bonds. The floating-rate bonds reduce long-term rates because the supply of long-term bonds is decreased. It is not clear that there would be the same upward pressure on short-term rates.

With floating rate bonds, you are not replacing long-term bonds with Treasury bills. The amount of Treasury bills could remain constant. However, some of the current Treasury bill investors might be drawn to the floating-rate bonds. This might provide some mild upward pressure on short-term rates.

### **Conclusions**

The changes in the Treasury's financing strategy that I am proposing should lead to a further reduction in long-term interest rates. The introduction of floating-rate coupon bonds will reduce the burden placed on the long-term fixed coupon bonds and hence reduce the long-term rates. Given that consumer spending, construction and capital expenditures are linked to long-term interest rates, changes in the Treasury's financing strategy will have a stimulative effect on economic growth. In addition, the strategy reduces the government's interest servicing costs.

Of course, variable-rate debt could be expensive if interest rates go up. However, short-term interest rates have to rise dramatically to meet today's long-term rates. In addition, my research on the business cycle and the yield curve shows that the interest servicing costs will be the lowest in recessions and highest in recoveries. As a result, the policy stabilizes or reduces the volatility of the business cycle.

## Endnotes

1. See C. R. Harvey, "Restructuring the Federal Debt," Working paper, Duke University, (June 1992) and subsequent coverage C. Stock, "U.S. Treasury Could Save" Knight Ridder, August 18, 1992, D. Kalish, "Here's a Possible Plan for Saving Billions: Finance Professor Offers a Scheme on Treasury Debt," Associated Press, August 24, 1992, "Money Wheel" CNBC, August 4, 1992.
2. My research on the relation between the yield curve and the business cycle is contained in C. R. Harvey, "The Real Term Structure and Consumption Growth," *Journal of Financial Economics* **22** (1988): 305-334, C. R. Harvey, "Forecasting Economic Growth with the Bond and Stock Markets," *Financial Analysts Journal*, September/October (1989): 38-45, C. R. Harvey, "The Term Structure and World Economic Growth," *Journal of Fixed Income* **1** (1991a): 4-17, C. R. Harvey, "Interest Rate Based Forecasts of German Economic Growth," *Weltwirtschaftliches Archiv* **127** (1991b): 701-718, C. R. Harvey, "Les Taux d'Intérêt et la Croissance Economique en France," *Analyse Financière* **86** (1991c): 97-103, C. R. Harvey, C. Kirby and S. Kaul, (1992), "La Capacità Previsiva della Struttura per Scadenza dei Tassi d'Interesse Italiani in Relazione alla Crescita Economica Reale," Working paper, Gruppo IMI, and C. R. Harvey, (1993), "The Yield Curve, Stock Returns and the Prediction of Canadian Economic Growth," Working paper, Duke University.

## Biography

Campbell R. Harvey is Associate Professor of Finance at Duke University in North Carolina. He received his Ph.D. from the University of Chicago in 1986 and joined the Fuqua School that year. He has held visiting positions at the Helsinki School of Economics, the University of Chicago, and the Stockholm School of Economics (summer 1993).

Harvey's research has generated international attention from both academic researchers and practitioners. His dissertation showed how to extract forecasts of economic growth from various interest rates. These forecasts turned out to be more accurate than commercially available forecasts.

Harvey is the recipient of numerous awards. He is the 1993-94 Batterymarch Fellow. This annual award is given to the person that is most likely to establish a new area of research in finance. In 1990, the R. L. Rosenthal Award for Innovation in Investment Management was given to Harvey. The Association for Investment Management and Research has recently honored Harvey with the Graham and Dodd Scroll in recognition of excellence in financial writing. The American Finance Association awarded Harvey the Smith-Breeden prize for his publication "The World Price of Covariance Risk."