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TECHNICAL EDITOR'S PAGE

As anyone tuned into the financial news can tell, the United States and much of the rest of the world is in the midst of an economic recession. The depth of this downturn is somewhat greater than had been predicted by most experts, and the recovery – which may have already begun, in fact – seems to be delayed until the second half of 1982, and possibly longer. The 1981–82 recession has affected the technical community and, in particular, the pressure vessel and piping industry to a much greater extent than the three previous economic declines, primarily because of its impact on capital investment in construction and equipment.

The Pressure Vessels and Piping Division feels the economic ripples through the activities of individuals with respect to technical conferences, publications, and the like. Because of accidental correlation, it used to be a standard joke within the Division, that the National Congresses on Pressure Vessel and Piping Technology – which are held every four years at a West Coast site (San Francisco in 1971, 1975, and 1979; Portland in 1983) – are scheduled to coincide with economic recessions, thereby limiting attendance. This time we see the situation somewhat more grimly. A short downturn can be accommodated through prudent management of resources and an adaptive response to changing market conditions. This has been one of the side benefits of past recessions, forcing the poorly managed segments of industry out and providing the incentive for well-managed companies to adapt and survive. A prolonged downturn begins to cut into the sinew of industry, especially capital-intensive sectors, such as pressure vessels, piping, and related equipment and services.

Engineers do not typically wrestle with global economic questions, although the economic factors that help to decide technical issues are never very far from the center of attention. However, at no time in my memory have I seen so many people so sensitized to economic conditions, with the exception (according to information from a previous generation) of the 1927–39 depression. The general public is considerably more aware of economic principles today than they were 50 years ago, and much less blame is attributed to traditional scapegoats (e.g., the banking institutions, Wall Street, etc.). Instead, the villains of the piece are abstract entities – such as inflation, money supply, and capital investment – over which some people feel there is little hope of control.

For the engineer who is trained to examine data, compare theory to data, and make decisions, the current economic situation begs for interpretation. The economists cannot agree among themselves on such an interpretation ("If all the economists in the world were laid end-to-end, they couldn't reach a decision."). Nevertheless, it might be interesting to attempt to explain some of the apparently contradictory causes and effects of today's economy. Engineering fools rush in where economic angels fear to tread.

At the outset we recognize that the data are overwhelming. In fact, there are considerably more data than information. Since the most critical factor affecting capital investment is the level of short-term interest rates (and, by implication, the ratio of short to long-term rates), it is crucial to be able to explain the inability of these rates to decrease in the face of annualized inflation rates of 3–5 percent. The current thinking among economists is that large federal budget deficits, huge foreign holdings of dollars, and the borrowing requirements of corporations (many of whom have staggering short-term debt positions because of the depressed equity markets) are all contributors. The difference between the current inflation rate and the short-term interest rate, so the story goes, is an inflation premium that accounts for uncertainty about the intention of the Federal Reserve to monetize the budget deficits, as well as other uncertainties in a volatile economy.

A fundamental explanation begins by recognizing that the interest rate represents the cost of money. The sociological corollary is that those with significant amounts of money to lend also have a significant aversion to risk, unlike those who seek to accumulate wealth – the risk takers. This country has a history of class mobility and has managed to inherit a vigorous economy because of the mechanisms that permit the risk takers (who create businesses, jobs, and economic growth) and the averters of risk to create a market for money, thereby setting interest rates. Inflation – at least the slight amounts of inflation in previous decades – was the "bonus" given to the risk takers for taking risks, over and above their share of profits.

This is no longer the case. *First*, the market for money is now made each week by the Treasury Department as it rolls over federal debt and sells securities for new borrowing. Although there are signs that some secondary interest rate markets are being made in individual sectors of the economy (e.g., real estate), the risk takers and the risk averters are not negotiating seriously. *Second*, inflation has become – at the relatively high rates that have prevailed since the Great Society/Viet Nam War years – a risk aversion strategy for debtors. It is not surprising that the holders of debt instruments are building an inflation premium into the cost of money. *Third*, with the federal government setting interest rates, the only game in town is recession – which turns out to be the mechanism that monitors, penalizes, and rewards the risk takers. However, an undesirable side effect is the slippage from a producing economy into a service economy, except for those few producing sectors where profit margins are high.

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The combination of these three items bodes ill for our industry, and for similar industries that are dominated by capital expenditures for construction and replacement. Profit margins have to be spectacular to justify the loss of *no-risk revenue* that the construction cycle entails, even though *at-risk revenue* is only being deferred. We observe the results, the most pronounced of which is the shift of technical talent from producing segments into service segments of the industry. Long-term vitality cannot be sustained by a service-dominated economy.

In theory, the solutions to the difficulties that we face are simple. Primarily, the federal government cannot continue to dictate the cost of money in the credit marketplace. There are a variety of ways to accomplish this, many of which (e.g., supply-side economics) may require years of economic restructuring to be effective. To have an immediately beneficial effect, the revenue/spending gap in the federal budget would have to be substantially reduced, and such a reduction does not seem to be forthcoming. Most revenue-enhancing strategies, such as deferral of the 1983 tax cut, are counterproductive, in fact. Two practical mechanisms have been suggested: (*i*) the Treasury Department can depart from the securities auction concept, and merely announce the rate that they will pay as a premium above a credible inflation indicator (some have suggested a 3 percent real rate of return for riskless government securities); or (*ii*) an implied credit allocation scheme can be constructed by altering the tax law. Although the idea of explicit credit allocation – especially by the federal government – is repugnant, we already practice implicit allocation through tax treatment devices such as interest deductions from taxable income bases. The current credit allocations are indiscriminately biased in favor of the borrower but, instead, should be discriminating on the lender side, where the leverage is greatest. Without getting into details, a dividend exclusion – perhaps with qualifiers – should be encouraged, rather than eliminated. Incentives for the equity markets, such as the marginal capital gains rates reduction, should be applauded.

The major point to be made is that excessive inflation and corrective recessions may likely be manifestations of a failure to permit credit markets to operate, combined with an indiscriminate tax subsidy for borrowers. Proposed solutions to largely eliminate government interference with respect to interest rates may serve to dampen inflation and recession simultaneously.

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