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Monetary Policy Alone Can End Recessions

What can policymakers do to end recessions? No question in macroeconomics is of more importance, and few have given rise to as much debate. But economists seem strangely unsure about what advice to give policymakers, in part because of confusion about how macroeconomic policies actually have been used to combat recessions in the past. Now, in a new NBER study, **Christina Romer** and **David Romer** review the evidence and conclude that monetary policy alone is a sufficiently powerful and flexible tool to end recessions. Fiscal policy, in contrast, does not appear to play an important role.

In *What Ends Recessions?* (*NBER Working Paper No. 4765*), the Romers analyze whether monetary and fiscal policies have helped or hindered the recoveries from the past eight recessions, beginning with the 1953 slump and ending with the recession of 1990. Their main finding is that monetary policy has been the source of most postwar recoveries. Monetary policymakers at the Federal Reserve System typically have moved toward expansion—by lowering interest rates—shortly after the start of most recessions. The average decline in interest rates between the prerecessionary peak in output and one quarter after the trough is 3.4 percentage points. These actions appear to have contributed, on average, almost 2 percentage points to real GDP growth in the four quarters following the recession trough.

The Romers also analyze the sources of the policy changes. The records of the Federal Reserve, they find, provide ample evidence that the falls in interest rates before recoveries are the result of deliberate antirecessionary policy. Moreover, their analysis shows that the Federal Reserve almost always has

recognized very rapidly that a recession is underway: the recessions of 1960 and 1990 were the only times in the sample period that the Fed took more than one quarter to realize a recession had begun. Thus, monetary policy can respond quickly to changes in economic conditions.

The data on fiscal policy do not show any pattern of changes in tax and spending policy during recessions as consistent or strong as the declines in interest rates. Discretionary fiscal policy, on average, changes little between the prerecessionary peak and one quarter after the trough. Estimates of the effect of policy suggest that fiscal changes contribute less than half a percentage point to real GDP growth in the four quarters following the trough. Policy records of the White House, the Romers find, show that there are no examples of major spending changes undertaken in response to recessions. Taxes were cut substantially only twice in such circumstances, in 1953 and 1975.

“Monetary policy has been the source of most postwar recoveries.”

Most large fiscal actions, the Romers conclude, have been taken in response to slow recoveries rather than to actual recessions. This is significant, because the potential for policy mistakes—for overheating the economy and generating inflation—is much higher when the actions are taken during a recovery than when the changes are made in the depth of a recession. Expansionary monetary and fiscal policy undertaken in the face of a strong economy and of high and rising inflation, in fact, contributed substantially to

above-normal growth in several periods—notably 1967–8, 1972, and 1986–7. In all three cases, the end result of the overly expansionary policy, the Romers conclude, was to set up the inflation that ultimately induced later policy tightenings.

Finally, the results of the study help explain the persistence of movements in aggregate output—a phenomenon that has been the subject of a large recent literature. Many of these studies presume that output movements driven by monetary or fiscal policy will not be persistent, and thus conclude that supply-side disturbances must be a crucial source of the output fluctuations. The Romers' examination instead suggests that the contribution of policy may be highly persistent. Thus policy is not only the source of post-war recoveries, but also the source of the puzzling persistence of aggregate output movements. RN

How Useful Is a Garbage Tax?

What happens when a town starts charging households for each container of garbage? On July 1, 1992, Charlottesville, Virginia implemented a program that required affixing an 80-cent sticker on each 32-gallon bag of residential garbage collected curbside. NBER Research Associate **Don Fullerton** and **Thomas Kinnaman** have gathered data on the weight and volume of weekly garbage and recycling material of 75 households from different parts of Charlottesville both before and after the start of the program.

“Householders somehow ‘stomped’ their garbage to get more in a container and trim their garbage bill.”

In **Household Demand for Garbage and Recycling Collection with the Start of a Price Per Bag** (*NBER Working Paper No. 4670*), they find that households on average reduced the weight of their garbage by 14 percent, from nearly 11 pounds per person per week to just over nine pounds. The volume of garbage also fell by 37 percent. Householders somehow “stomped” their garbage to get more in a container and trim their garbage bill.

Further, several households presented garbage only every other week to save on the cost of stickers. And, the weight of their recyclable materials increased by 16 percent: from 3.7 pounds to 4.3 pounds. However, Fullerton and Kinnaman suspect that households illegally disposed of an additional 0.4 pounds per week per person on average.

In Charlottesville there was fairly high support for

the sticker program. Quizzed after the completion of the study, 70 percent of the households favored the program over an increase in property taxes, and 73 percent favored it over mandatory recycling. However, householders found it more inconvenient to purchase and place stickers on their garbage than to recycle.

DRF

Investment in Emerging Markets Offers Risks and Rewards

For years, U.S. investors have concentrated their global stock market participation in the large developed markets of the G-7 countries. But recently, there has been interest in the so-called “emerging” stock markets: classified as such by the World Bank if their country's economy had less than \$7910 in U.S. dollars in per capita GDP in 1991. Two new NBER studies by **Campbell Harvey** analyze why the emerging markets have created so much attention.

One reason for the interest is simple: higher returns. In **Predictable Risk and Returns in Emerging Markets** (*NBER Working Paper No. 4621*), Harvey shows that stock markets in Argentina, Chile, Colombia, Mexico, Venezuela, the Philippines, Taiwan, Turkey, and Portugal have earned over 25 percent (measured in U.S. dollars) per year since 1985. Four of these countries earned approximately 40 percent per year. In contrast, developed countries, such as the United States and Japan, produced less than 15 percent per annum.

Harvey emphasizes that these extraordinary returns are not driven by wild inflation. If returns are measured in terms of local currency, Argentina earned more than 180 percent per year since 1985! However, most of this gain was devoured by inflation. When an investment in Argentina's stock market is converted into U.S. dollar terms, it returned an impressive 39 percent per year.

So why isn't there a huge exodus from developed markets into these emerging stock markets? “Investors are hesitant to shift funds to emerging markets because of the perceived increase in the risk of their investment,” says Harvey. However, he argues that such a view is based on a misunderstanding of the concept of risk.

“It is true that investing in any particular emerging market is an extremely risky prospect. It's the same as holding only one security in your portfolio, say a fledgling U.S. startup. However, that's not how smart investors allocate their money. We almost always hold a diversified portfolio of many securities,” argues Harvey.

In other words, the impressiveness of Chile's average return is tempered by its volatility: on average, 40 percent is earned; however, it would not be unusual to lose 20 percent in any one year. "That's volatility," Harvey adds. In contrast, the developed markets are much more stable. Even in a volatile year like 1987, the Standard & Poor's 500 managed to provide a 3 percent return.

"Average returns are higher, and volatility is lower, when investors include emerging markets in their portfolios."

Adding these highly volatile emerging market stocks to a portfolio actually reduces the volatility of the whole portfolio. "The emerging markets have very low correlations with developed markets. When developed markets go down, the emerging markets are often rallying. When emerging markets lose ground, the developed markets do well on average. The volatility is canceled out," adds Harvey.

Harvey argues that fundamental economic forces cause these low correlations. "Many emerging economies have much different industrial mixes than developed economies. The eight lowest income countries in my sample have, on average, zero correlation between their economic growth rates and world economic growth," he states.

In **Conditional Asset Allocation in Emerging Markets** (*NBER Working Paper No.4623*), Harvey studies another interesting aspect of emerging market stock returns: their predictability. Using portfolios of actively traded stocks in 20 emerging markets, Harvey shows that it is much easier to predict one-month-ahead returns in emerging markets than in developed markets.

He finds that the source of the predictability in emerging market returns is information about the local economy. This contrasts with his work on developed markets that shows that most of the predictability is driven by common, worldwide economic information. Harvey conjectures that the strong influence of local information is consistent with many of these economies being segmented from world capital markets.

Through monthly portfolio simulations from 1980 to 1992, Harvey measures the gains if investors are allowed to invest in both emerging and developed markets, rather than just developed markets. Then, he measures the effect of explicitly forecasting stock returns, versus using a naive forecasting rule, such as the random walk.

His simulations show that average returns are higher, and volatility is lower, when investors include emerging markets in their portfolios. However, if investors ignore the predictability in stock market returns (that is, use a naive forecasting rule), then per-

formance could be worse when emerging market assets are added to their portfolios.

Harvey argues that "the most important input in successful portfolio management is a good forecast of next period's return. Emerging market stock returns are, in general, predictable. If you ignore the predictability by using some naive forecasting rule, you are creating a situation which will lead to poor performance."

Portfolio strategies that use the predictability of the stock market returns show dramatic profitability when they include emerging markets. Harvey's research suggests that it is not enough to just add emerging markets to your portfolio; these markets must be added in a way that captures the predictability in the market returns.

Women Reduce Pay Gap with Men

Over the last 20 years, the gap between male and female wages has fallen dramatically. For decades, the ratio of female-to-male median weekly earnings for full-time wage and salary workers was virtually constant at about 60 percent. As late as 1978, the ratio was 61 percent. But by 1991, it had risen to 74 percent. Thus, the gender wage gap fell by about one-third between 1978 and 1991, despite a substantial increase in overall wage inequality during the same period that reflected rising returns to labor market skills.

In **The Impact of Wage Structure on Trends in U.S. Gender Wage Differentials: 1975-87** (*NBER Working Paper No. 4748*), **Francine Blau** and **Lawrence Kahn** investigate how women were able to "swim against the tide" of rising wage inequality. They find that women offset the negative impact of rising returns to skills by improving their qualifications, especially their labor market experience, relative to men. In 1975, men had 8.4 more years of work experience on average than women did. By 1987, men had only 4.7 years more work experience than women.

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The increase in experience not only affected women's wages directly; it also caused an indirect increase, by upgrading women's job characteristics so that some women shifted to new occupations and/or industries. Occupational progress unrelated to this increase in women's relative experience also contributed to a narrowing of the gender gap.

Less important, but still substantial, was the effect of the deunionization of the U.S. labor force that occurred between 1975 and 1987: because the drop in unionization was larger for men, deunionization hurt men's wages more than women's. Of the men in the Blau/Kahn sample, 33 percent of wage and salary workers were covered by a collective bargaining agreement in 1975. By 1987, this figure had fallen to 23 percent. Of the women in the sample, on the other hand, the percentage unionized had fallen much less, from 21 percent to 17 percent.

When Blau and Kahn adjust the data on wages for years of education and actual experience in the labor market, they find that the female-male wage ratio rose from 72 percent in 1975 to 78 percent in 1987. Adjusting for occupation, industry, and collective bargaining status as well, the ratio increases from 81 percent in 1975 to 85 percent in 1987.

The decline in the gender wage differential was not uniform across wage and salary levels, however. The male-female wage gap for women at the bottom of the wage and salary distribution fell much more than for women at the top.

Blau and Kahn find that the overall decline in the gender wage gap was not caused by shifts in supply and demand that favored women: while the relative demand for women rose, their relative supply increased even more. However, relative supplies and demands do help to explain why high-wage women progressed more slowly than low-wage women. Blau and Kahn point out that the relative supply of high-skill women grew, while the relative supply of low-skill women fell. At the same time, shifts in demand favored men over women at high skill levels, but women over men at the low skill levels.

Blau and Kahn use data from the Michigan Panel Study of Income Dynamics for 1976 and 1988. These data are the only nationally representative sample of the labor force with information on the actual labor market experience of individuals.

DRH

Outbound FDI Increases National Income

Do existing tax rules—in particular, the credit for foreign taxes paid—induce U.S. firms to expand foreign direct investment (FDI) to a point at which the return to the United States is less than the potential return on the displaced domestic investment? Not according to new research by NBER President **Martin Feldstein**. He finds that each dollar of outbound FDI raises the present value of U.S. national income by nearly twice as much as the value of the displaced investment. Measured in a different way, he explains,

“the U.S. cross-border investment earns an internal rate of return for the United States of 15.1 percent.”

In two recent studies (*NBER Working Papers No. 4668 and No. 4689*), Feldstein points out that the foreign direct investments of U.S. multinational firms cause those firms to borrow more from foreign sources than they otherwise would. According to U.S. Department of Commerce figures from a 1989 survey of nonbank companies, only about 20 percent of the value of assets owned abroad is financed by cross-border flows from the United States; 62 percent is financed locally by foreign debt and equity, of which foreign debt is about 53 percent.

“Each dollar of outbound FDI raises the present value of U.S. national income by nearly twice as much as the value of the displaced investment.”

“With the actual prevailing patterns of finance and tax rates, the net advantage of foreign borrowing exceeds the disadvantage of paying taxes to a foreign government,” Feldstein explains. In a perfectly integrated world capital market, an extra dollar of capital flowing out of the United States as direct investment might be offset by an additional dollar of portfolio capital coming in, leaving domestic investment unchanged. But in practice, an increase in outbound FDI appears to increase the net outflow of domestic saving to the rest of the world.

As an example, Feldstein proposes a firm whose real pretax rate of return on an incremental investment in the United States would be 12 percent. If the tax rate faced by the firm's foreign affiliate is the same as the U.S. tax rate and the leverage used abroad is the same as the leverage at home, the firm will invest until the marginal pretax return on the foreign investment is also 12 percent.

But from the point of view of the United States, there are two fundamental differences between the U.S. and the foreign investment. First, the foreign investment will be taxed by the foreign government, so the entire 12 percent pretax return will not flow into the United States. Second, the borrowing by the foreign affiliate at a lower aftertax cost than the real return on capital confers a net benefit to the United States.

Feldstein assumes that each dollar of initial assets abroad is financed with a mix of U.S. and foreign equity and debt; U.S. investors provide 70 percent of the equity; annual dividends are equal to 70 percent of aftertax profits; the interest rate is 8 percent; and inflation is 4 percent. Then, he estimates, the present value of the net interest and dividends paid to U.S. investors will be \$1.72 per dollar of initial U.S. debt and equity investment when discounted at a 12 percent real discount rate.

Reforms Raise Latin American Growth

After decades of protectionist policies, most of Latin America began to open up to the rest of the world in the late 1980s. This process, pioneered by Chile, is perhaps the most impressive achievement of the last decade. It has effectively put an end to more than four decades of generalized import substitution policies aimed at encouraging an industrial sector and, in the end, largely inefficient.

In **Trade Policy, Exchange Rates, and Growth** (*NBER Working Paper No. 4511*), Research Associate **Sebastian Edwards** analyzes the process leading to these trade reforms and discusses their impact on the economic performance of Latin American countries. He explores, from different perspectives, the relationship between trade liberalization and growth and deals with both long-run and transitional issues.

Edwards first concentrates on the long-range relationship between trade regimes and productivity growth. Using a 54-country dataset to investigate how trade distortions affected productivity growth in 1971–82, he shows that more open economies tend to have faster rates of productivity growth than countries that have distorted international trade.

In the mid-1980s, Latin America had one of the most distorted external sectors in the world with extremely high import tariffs and, in some cases, quantitative restrictions that covered every single import item. However, by 1987–8 it became increasingly apparent that a permanent solution to the region's economic problems would require a fundamental change in its development strategy. In particular, policymakers began to realize that the long-standing protectionist trade policy was central to the region's dilemmas.

The poor performance of the Latin American countries offered a dramatic contrast to the rapidly growing East Asian countries that had implemented outward-oriented strategies aggressively. For example, while real exports grew at an annual average of 9.5 percent in East Asia between 1970 and 1980, they declined at 0.1 percent in Latin America during that decade. With the help of the multilateral institutions, a larger and larger number of countries began to reduce their levels of protection during the late 1980s and early 1990s. This trade reform process has been supplemented with broad deregulation and privatization, and is proceeding at an increasingly rapid pace.

The Latin American trade reforms have been characterized by four basic elements: 1) the reduction of coverage of nontariff barriers, including quotas and prohibitions; 2) the reduction of the average level of import tariffs; 3) the reduction of the degree of dispersion of the tariff structure; and 4) the reduction or elimination of export taxes. In addition, a number of

countries are trying actively to sign free trade agreements with the United States. The pioneer in the liberalization process was Chile, which between 1975 and 1979 unilaterally eliminated quantitative restrictions (QRs) and reduced import tariffs to a uniform level of 10 percent. After a brief interlude with higher tariffs (at the uniform level of 30 percent) Chile currently has a uniform tariff of 11 percent and no licenses or other forms of quantitative controls. Argentina implemented its reform program in 1988, dismantling most of the quantitative barriers. Bolivia and Mexico embarked on their reforms in 1985–6, followed by a series of countries in the late 1980s. In the case of Honduras, quotas initially were replaced by (quasi) equivalent import tariffs, and then slowly phased out. In other countries, such as Chile, nontariff barriers were eliminated rapidly without a compensating hike in tariffs. At the current time a number of countries, including Brazil, are proceeding steadily with scheduled rounds of tariff reduction and the dismantling of quantitative restrictions. However, it is still unclear whether all of these reforms will be sustained, becoming a permanent feature of the Latin economies, or whether some of them will be reversed partially.

The first objective of the Latin American trade reforms was to improve the allocation of resources, enhancing the performance of the largely inefficient manufacturing sector and reducing the anti-export bias that discouraged both the growth and diversification of exports. A central element in this strategy was the elimination of negative effective rates of protection and overvalued exchange rates. (It is worth noting that the ability [and willingness] of firms to implement significant adjustment depend on two main factors: the degree of credibility of the reform, and the level of distortions in the labor market.)

“More open economies tend to have faster rates of productivity growth than countries that have distorted international trade.”

The second fundamental objective of the reform programs was to transform international trade into “the engine of growth.” According to economic theory, more open economies can take advantage of larger markets, and thus increase their degree of efficiency and their rate of growth. Openness also can affect the speed and efficiency with which small countries absorb—or imitate—technological innovations developed in the industrial world. The econometric results reported by Edwards support the view that, after controlling for other factors, countries with more open and less distorted foreign trade sectors have tended to exhibit a faster rate of growth of total factor productivity, over the long run, than those nations with a more distorted external sector.

What is the adequate speed of reform? For a long time, analysts argued for gradual liberalization pro-

grams, to give firms time to restructure their productive processes, thus reducing dislocation costs in the form of unemployment and bankruptcies. Recently, however, the gradualist position has been under attack. There is an increasing agreement that slower reforms tend to lack credibility, inhibiting firms from actually engaging in serious restructuring. Also, recent empirical research has shown that the transitional costs of rapid trade reforms—especially their unemployment consequences—are significantly lower than once was thought. Partly because of these considerations, the recent Latin American reforms have been very rapid. Countries that have embarked on trade liberalization in recent years have moved at a much faster speed than those nations that decided to open up earlier.

When Chile initiated the trade reform of 1975, most analysts thought that the announced tariff reduction from an average of 52 percent to 10 percent in four-and-a-half years was an extremely aggressive move that would cause major dislocations, including large increases in unemployment. In contrast, Colombia opened up in one year, slashing tariffs from 34 percent in 1990 to 6 percent in 1991, and reducing quantitative restrictions from 70 percent of products in 1989 to 1 percent in 1991. This fast approach to liber-

alization also has been followed by Argentina and Nicaragua, which eliminated QRs in one bold move and slashed import tariffs from an average of 110 percent in 1990 to 15 percent in March 1992.

Most historical studies of liberalization have shown that maintaining a “competitive” real exchange rate during the transition is one of the most important determinants of successful trade reform. A competitive (that is, depreciated) real exchange rate encourages exports, and helps maintain external equilibrium at the time the reduction in tariffs has made imports cheaper. Additionally, if the reform is perceived as temporary, the optimal behavior is not to adjust; instead, it is profitable to speculate through the accumulation of imported durable goods. This was the case in Argentina during the failed reforms of the early 1980s. The effects of the real exchange rate appreciation will be particularly serious if the transitional period is characterized by “abnormally” high capital inflows, and the economy is subject to labor market distortions. In the early 1990s, capital inflows to Latin America increased substantially, generating real exchange rate appreciation. Although increases in productivity tended to (partially) offset this effect, overall export competitiveness has declined throughout most of the region.

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