

THE EURO FACING OTHER MONEYS

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My attitude toward the euro could make me fair game for President Truman's complaint about not finding a one-armed economist. On the one hand and on the other, I'll hasten over the familiar pros and cons. I'll spend more time on the political centralization that the euro seems to imply. I'll conclude by pointing out defects that the euro shares with all modern currencies.

Standard Pros and Cons

A common currency can be more durable than supposedly fixed exchange rates among distinct currencies. It offers convenience and economies for trade, investment, and tourism. (So far, though, the euro system has made only a small start at bringing down the astonishingly high bank charges on transferring funds even between euro countries; *The Economist* 2003b: 59–60.) Price discrepancies become more transparent, presumably enhancing competition in goods, services, and securities. Under the Maastricht Treaty, the euro system supposedly imposes financial discipline on member governments, and the European Central Bank is responsible above all for achieving price-level stability or only moderate inflation.

The euro's contribution to global monetary stability depends on its performance at home. While the euro ends potential competition among the currencies that it replaces, it enhances competition on the world stage by being the domestic currency of an economically and financially large area rivaling that of the United States. F. A. Hayek (1977) would have admired this aspect for the discipline it might pose against the monetary and fiscal recklessness of governments, including the U.S. government. These advantages or potential advantages,

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taken together, are substantial. The shortness of the list does not deny their importance.

On the other hand, the euro eliminates not only the opportunity for (quasi) independent national monetary policies but also the quasi-flexibility of prices as translated at flexible exchange rates. Suppose, for example, that a fall in foreign demand for a country's leading exports requires a change in its external terms of trade. Relative prices can adjust either through a fall in domestic-currency prices and wages or, less painfully, in part through exchange-rate depreciation. Under monetary unification or a fixed-rate system operated according to its inherent logic, the first process would operate and would be reinforced by a drain on the country's money through a temporary balance-of-payments deficit. This deflationary adjustment would depress real economic activity during the transition.

The point about relative-price flexibility arises in the literature on optimum currency areas, and its force depends on a country's production of traded goods being such that exchange-rate flexibility can indeed be a meaningful substitute for or supplement to domestic price flexibility. Related points concern labor-market rigidities and other conditions tending to recommend an independent national monetary policy. I used to give such considerations more weight than I do now (having been influenced by the literature on rational expectations); but even now I do not dismiss them outright.

Reviewing five much-discussed tests pertaining to criteria of an optimum currency area, and specifically how the Chancellor of the Exchequer found them applying to Great Britain, *The Economist* (2003a: 51–52) concluded that the case for Germany's quitting the euro looks stronger than the case for Britain's joining soon (a special section in the same issue, pp. 4–7, mentions Germany's "Euro-sclerosis").

Currency Substitution

Already I have noted greater currency competition as a possible benefit of the euro. This is not unequivocally a good thing, however; and under the name "currency substitution" it has long aroused worry (Miles 1978a, 1978b; Lebre de Freitas 2003; Friedman 1999, 2000a, 2000b, 2002). Miguel Lebre de Freitas describes the problem: Increasing international portfolio diversification and absence of capital controls enhance investors' ability to switch where and in what currencies they hold their assets. This switching may destabilize demands for money. If the demand for money in Europe responds to monetary conditions in the United States, money growth in the euro area may

become a poor indicator of risks to price stability. “Technology and globalisation are blurring the distinction between national and international uses of money, opening a channel through which domestic money markets are exposed to shocks occurring abroad. This phenomenon is a matter of concern for policymakers, as it rises the unpredictability of the money demand and reduces the effectiveness of monetary policy” (Lebre de Freitas 2003; econometric experiments suggest to him that the problem could indeed become serious).

How might substitution occur? An increase in one country’s money supply, for example, might reduce interest rates or intensify inflationary expectations there, motivating capital outflows. Inflows into countries linked to the first at fixed exchange rates would expand money supplies unless sterilization were somehow successful. Even completely flexible exchange rates would not guarantee monetary independence in the countries of destination, especially if some of each country’s money was held in all of the countries involved.

You might discount the dangers of currency substitution because of the inertia—the “who goes first?” aspect—that keeps people using their home currency. Yes, but shifting is not confined to currency and demand deposits. In many countries, furthermore, the dollar does circulate in parallel with the local currency. (Recent shipments of U.S. currency have continued to go mostly to Argentina and Russia, but shipments to the euro area have decelerated; Nguyen 2003: 18.) The official reserves of central banks provide much scope for shifting out of dollars into euros.

A session of the American Economic Association in Atlanta in January 2002 turned out to be mostly cheerleading for the euro, with little analysis. During the question period, however, a member of the audience asked whether the larger top denomination of euro than of dollar banknotes, €500 versus \$100, wouldn’t make the euro more attractive for drug trafficking and other underground activities. The moderator of the session just brushed the question aside, apparently not understanding it; but it was a good question. The bulk of U.S. paper money in circulation, and especially of \$100 bills, is held abroad, providing great scope for currency substitution.¹

¹Estimates range widely. A press release of U.S. Federal Reserve and Treasury (2003) reported overseas holdings of between \$340 billion and \$370 billion out of roughly \$620 billion of U.S. currency circulating outside of U.S. depository institutions in the last quarter of 2002—in short, between 55 and 60 percent. Elena Nguyen, however, writing in a Commerce Department publication (2003: 18), put foreign holdings of U.S. currency at the end of 2002 at only \$297.1 billion. According to Terry Savage (2003), “two-thirds of U.S. paper currency is circulating in foreign countries. In fact, 90 percent of U.S. \$100 bills are held abroad.” In 1996 John Carlson and Ben Keen estimated the share of U.S. currency in

Politics and Centralization

Related to currency substitution is a worry that I want to save for later, a worry about all government currencies nowadays. Meanwhile, let's notice the euro's political role. The euro seems to have been politically motivated from the start, politicians more than economists pushed for it, and it serves above all as a symbol of European unity and statehood (Backhaus 2000, Senn 2000, Sigfrid 2003, Watrin 2002: 321–22). German Chancellor Gerhard Schröder said in a speech in the Netherlands in 1999, “The introduction of the euro is probably the most important integrating step since the beginning of the unification process. This will require us to bury some erroneous ideas of national sovereignty” (quoted in *The Economist* 2003c: 52; *The Economist* [2003a: 4–7 of the special section] mentions political elements in arguments about whether countries not yet in the euro area should now join.)

According to Benjamin Friedman, the chief purpose of monetary unification in Western Europe and some other regions is not to rearrange economies into optimal currency areas in the economists' usual sense but rather to serve as “the leading edge of political unification.” He expects the strains of European monetary unification to unleash pressures for ever more fiscal transfers and eventually for intergovernmental revenue-sharing and personal tax and transfer systems (Friedman 1999: 336–37). *The Economist* (2003c: 52) notes that the budget-deficit provisions of the Maastricht Treaty already give the European Union great authority over the taxing and spending of member-country governments (unless, of course, the rules go unenforced and are revealed as a sham). Evolution toward “a deeper, more fundamentally political level of unification is probably not inconsistent with what the euro's original architects had in mind” (Friedman 1999: 337). Memories of Franco-German wars probably figured in that original thinking.

However, the euro does not actually require and does not *necessarily* promote tight political centralization. A common currency, or

circulation held abroad at between 50 and 70 percent. They added that about 80 percent of the growth in U.S. currency between the mid-1980s and mid-1990s had resulted from increased foreign demand. The foreign demand for additional U.S. currency fell sharply in 1995, however, apparently because of suspicions aroused by something as trivial as redesign of the \$100 bill.

Relatedly, the currency component of what traditionally counts as the U.S. money supply has grown markedly. A graph created by Roger Garrison (for an unpublished talk) from data supplied by the Federal Reserve Bank of St. Louis shows the currency component of M1 rising from 20 percent in 1960 and 30 percent in 1990 to slightly above 50 percent in 2003.

at least a common base money, is compatible with political diversity, as in the United States before the New Deal and even more so before the Civil War and as in the world during the few decades of the international gold standard. Nor does area-wide freedom of trade, finance, and migration require political centralization. These freedoms can even reinforce restraints on member governments by improving individuals' opportunities to vote with their feet—and with their investment portfolios.

Still, pressures toward greater political centralization are operating. The European Union now has a parliament, a bureaucracy, and an incipient central government. The staffers of those organs will feel the itch to justify their own existence, to do good as they see it, and to discover or invent problems requiring solution at their own additional level of government. Already, even “leisure is a matter for law. The European Union has just mandated a minimum of four weeks vacation for all member countries” (Zuckerman 2003).

The people most susceptible to an itch to legislate and regulate are the ones most likely to gravitate to where they have the opportunity. One observer identifies “a new species of European elite politician. Dwelling in Brussels, this politician identifies primarily with EU and not with the citizens of his own country. . . . [S]trong forces push to transform the EU into something that for all practical purposes would be one big country.” Fears are well-grounded “that harmonized taxes are coming along as part of the euro package. . . . Countries saying yes to the euro will be signaling that they are happy with a growing EU. Countries that say no make it clear that they don't believe in European centralism” (Sigfrid 2003: 34–35; compare Tupy 2003 on how the Brussels itch to bureaucratize and regulate is likely to harm new EU members in central and eastern Europe).

Unlike the U.S. dollar, fortunately, the euro is not managed by a central bank that in a crunch could be drafted into the serving the budgetary needs of a powerful central government. Not yet. But things could change if Europe should acquire a powerful central government and if political pressures should deprive central bankers of the necessary degree of independence.

An eminent European, German economist Christian Watrin, finds the economic arguments for a single currency unconvincing and worries about “the dirigism of the superstate.” Given national business-cycle divergences, tensions will push toward fiscal centralization. Multinational states are fragile. James Buchanan, as Watrin reminds us, favored a loose federation of free-trading nation-states and a monetary constitution based on competing national central banks plus rights of all Europeans to use whatever currencies they preferred.

“Perhaps it is more important for peace and harmony among European peoples that all of them establish true democracies, the rule of law and open market economies instead of forming a superstate” (Watrin 2002: 322–23).

The draft treaty for a European constitution (running some 240 pages, released in Brussels on July 18, 2003, and available on the Internet) is verbose, repetitious, and poorly organized. It abounds in noble-sounding abstractions and laundry lists of good intentions and desirable conditions. Its vague phraseology gives people with axes to grind much to latch onto, interpret, twist, and litigate about.² It is the opposite of the approach to policy recommended by Rutledge Vining (1984): pinpointing specific ills and considering what reformed institutions would work better.

Europeans could learn something from American history. When the Constitutional Convention met in 1787, its members followed essentially Vining’s approach, seeking to remedy some relatively few and specific problems experienced under the Articles of Confederation. They did not consider centralized power good in its own right. Even so, we Americans have drifted over the decades and centuries into a situation in which constitutional restrictions on central power mean very little any more. A constitutional attitude no longer prevails. Even primary and secondary education, even the toleration of prayer in schools and of religious symbols on state and local government property, are now made federal cases. (Personally, I don’t think governments at any level should promote religion; but nothing in the Constitution or First Amendment, read as written, forbids lower levels of government to tolerate or even to promote it.)

I banish an example of the nonconstitutional attitude to an appendix of this article.

Undefined Units and Fiat Currencies

My conclusion addresses a problem that the euro shares with all national currencies nowadays. The question does arise of exchange rates among separate currencies and of possibly merging some into a single currency. A more fundamental issue, however, is that all are fiat currencies. Each unit of account is essentially undefined (except to the extent that some currencies are pegged to the fiat currencies of larger countries). The value of money is precarious, at least potentially.

²Since drafting this article, I have seen William Niskanen’s (2003) similarly skeptical assessment of this document.

In the United States, the unit of account is essentially the scruffy dollar bill. Its value depends on the relation between demand for and supply of dollar-denominated money, with the Federal Reserve trying to regulate the supply (if not directly, then through interest rates) to match the demand at a reasonably stable price level. This is a difficult task, considering that the very concept of quantity of money has become fuzzy, (just what counts as money nowadays?), that financial innovation continues, and that the roughly half of U.S. base money is held abroad.³ Large foreign holdings—and domestic holdings—of dollars and dollar-denominated securities provide great scope for an attempted stampede out of dollars if confidence in the value of the dollar should wane; the currency-substitution problem looms again. (Savage 2003 elaborates on these dangers, and Mueller 2003 presents similarly worrisome facts.) Confidence might wane some day on prospects that the U.S. government would have to monetize some of its debt. Fiscal irresponsibility already shows up in chronic budget deficits, the large recognized debt, and the still huger excesses of future liabilities over future revenues on account of Medicare and Social Security. Yet politicians, with their notoriously short time horizons, continue offering new plums to the voters.

Current monetary policies confront an increasingly complex, multi-tiered financial system. More loose links and delays intervene between what the Federal Reserve actually does and its ultimate impact on prices and its short-run impact on real economic activity. Meanwhile, whatever signs may exist about what it ought to be doing become increasingly difficult to read. Enhanced possibilities of currency substitution provided by the euro, even destabilizing substitution, increase the demands placed on the cleverness of central bankers, both in the Federal Reserve and in the European Central Bank.

Central banks have had power because most money is bank deposits, against which banks hold required or prudential reserves of central-bank base money. But the financial operations by which central banks exert their supposed leverage are tiny in relation to national and international money flows and total output. In the United States, reserves maintained with the Federal Reserve amount to only well below 1 percent of GDP (Brittan 2003: 151; compare Friedman 1999).

³This fraction follows from estimates, cited in footnote 1, that about half to two-thirds of U.S. paper money is circulating abroad and from the fact that currency accounts for 94 percent of the total monetary base (calculated from *Economic Indicators*, July 2003). A chart in Anderson and Rasche (1999: 38) shows about 45 percent of the base at the end of 1997 consisting of currency held abroad.

In considering the effectiveness of monetary policy, you might think that the total monetary base is more relevant than its tiny bank-reserve component. However, the Federal Reserve supplies the currency component passively, making reserves on deposit with it and currency interchangeable on demand. (Trivially, currency held as bank reserves becomes currency in circulation when paid out to customers.) If conversion of bank reserves into circulating currency tightens reserves to a degree considered inappropriate for policy, the Federal Reserve simply replaces the converted reserves by expansionary open-market operations. As I understand the matter, then, it really is bank reserves and not currency or total base money that measures the leverage available to central banks. None of this contradicts what was said earlier about how the large fraction of base money held abroad as currency adds complexity to the task of the Federal Reserve.

Will commercial banks continue supplying most of the money and holding central-bank reserves? Doubting so, Benjamin Friedman (1999) expects banks as we now understand them to come to an end during the next quarter-century. Things like smart cards may well evolve into genuine private money, and private means not only of payment but also of final settlement may arise. Nonbank credit is proliferating at the expense of bank credit. Technological advances are diminishing the informational and other special advantages of banks. Securitization means the sale of loans to nonbank investors not subject to reserve requirements. The combination of such developments might almost eliminate the need for bank reserves. Central banks will ultimately lose their leverage over the economy. What will then determine the price level? (Friedman 1999, 2000a, 200b, 2002; Brittan 2003.)

Selgin and White (2002: 147–51) recognize concerns like these. They themselves remark on the possibly growing substitution of privately issued moneys for central-bank money and the reduced use of central-bank money for interbank settlements, developments that will shrink the real monetary base both in absolute terms and relative to broader monetary aggregates (pp. 147–48). However, they continue, “A central bank becomes impotent only . . . [when] the demand for its money falls to zero.” (So saying, they ignore Benjamin Friedman’s [2000a] distinction between demands that are and are not relevant at the margin.) Short of the point of zero demand, a decline in the relative importance of base money means, in their view, that each unit of it becomes more potent. The money multiplier of the textbooks increases; the monetary-policy lever operates more powerfully on its fulcrum. Even if legal reserve requirements should lapse, banks

would still demand reserves for clearing purposes and from prudence. Selgin and White do not deny, however, that a declining demand for base money may make policy targets more difficult to achieve. “Some innovations that reduce the real demand for base money may also render that demand more volatile” (p. 149). As I would phrase the point, central-bank policy gains leverage in some sense, but the lever becomes more rubbery. Rubberiness has already shown itself in the notorious breakdown (except, presumably, in the middle to long run) of a dependable relation between the quantity of money, somehow defined, and the price level.

Rubberiness due to financial evolution in the direction of ever-greater innovation, complexity, and private money has entirely different implications in two contexts: first, one with a *defined* unit of account, and second, one with a fiat unit. In an example of the first case, the unit is defined by a quantity of gold. A free-banking gold standard with no government money is eminently conceivable, and several reasons suggest that it could be more durable than a government gold standard. (A gold-defined unit serves merely as an example; for I doubt that gold or any other a single commodity would be the best basis for a definition.) In such a context, rubberiness does not much matter because the central bank, which ideally does not even exist, is not trying to exert any leverage anyway.

Things are very different when the unit of account is a fiat unit whose value depends on the interplay of supply and demand for a base money and for the other kinds of money and the near-moneys that are pyramided onto it. In that case, the central bank must try to exert leverage on broader monetary aggregates and their macroeconomic consequences from the fulcrum of its own balance sheet. In that case the rubberiness of the lever poses a daunting challenge indeed.

For the European Central Bank, the complexity of the problem is increased by the continuing existence of 15 separate central banks and sets of money and banking institutions. (Duarte 2003 wonders about how even to define euro-area-wide inflation or deflation, given divergent price trends in member countries. But perhaps these divergences are just transitional phenomena.)

In an increasingly complex world, timely warnings of mistaken monetary policy are elusive. Excessive looseness does not show up promptly in rises in prices of goods and services. It may show up in bubbles in asset prices—stocks and bonds, real estate, and exchange rates, bubbles so identified only after the fact—and in association with these distorted prices, in real distortions (such, possibly, as excessive debt) that it will be painful to work off. Deflation may be the

fashionable worry even while renewed price inflation is brewing in the background (compare Lee 2003).

One could go on listing questionable aspects of monetary and interest-rate policy. Economists of the Austrian school are inclined to blame much mischief on what they see as excessively loose policy in the late 1990s. However, I do not criticize Alan Greenspan. He has to work day by day and without hindsight. I wouldn't have known how to do half as well. What worries me is not the performance of Greenspan and his colleagues but the *system*, the institutional arrangements, that they must work with.

Perhaps I am worrying too much. You might reply that although estimating actual and demanded quantities of money with any precision has indeed become impossible, indications of disequilibrium between the two are still available. Perhaps the central bank can respond to these indications appropriately and sensitively enough, and without too much trouble from the famous lags in the impacts of monetary policy. Some foreign central banks have reportedly had some success targeting price levels or inflation rates. You might further reply that monetary policy has been better for economic stability after World War II and especially after the 1970s than before. Setting a few exceptions aside, I agree. But what force does that point have? Central bankers have learned a lot from experience and even from progress in economics. They will never repeat the most blatant errors of the past. But the challenges they face have become greater. That is the crux of my worry.

Alternatives to Fiat Money

Economists and policymakers should begin thinking of alternatives to the present system of fiat moneys whose values depend on improbably wise money management. Sooner or later they must face the problem of undefined currency units.

One suggested alternative to current institutions is some kind of free banking, which would leave the issue of money to private institutions, disciplined by competition to keep meaningful their denominating their banknotes and deposits in a defined unit of account. The quantities of moneys and near-moneys might accommodate themselves more nearly automatically to the demands for them at a price level corresponding to the definition of the unit. Free banking could better enlist private information and expectations.

Even if you favor a gold standard, one run by competing private banks is likely to be more stable than one run by, and occasionally abandoned by, governments. F. A. Hayek (1978, 1984) has suggested

another way to private money. Still another proposal would also put the government out of the money business. The unit of account, instead of being defined by some coin or banknote, would be defined as the value of a fairly comprehensive bundle of goods and services. Private issuers of media of exchange would feel competitive pressures to keep their moneys actually equal in value to the numbers of units of account denominating them (perhaps using “indirect redemption” to this end). The supply of media of exchange would respond to the demands for them at the fairly stable price level corresponding to the bundle definition of the unit of account. An article in a new Cato-sponsored book surveys how developments in technology have greatly enhanced the feasibility of privatizing money (Friedman and Macintosh 2003).

A Benevolent Conclusion

As Adam Smith’s benevolent impartial spectator would do, I hope that the euro works well, now that the Europeans have adopted it. I hope that it becomes an inspiration to policymakers in other countries, and without being, as it need not inevitably be, an instrument of further political centralization. But, heaven forbid, maybe it won’t work well. It is good to keep alternatives in mind. Apart from their possibly being put in practice some day, academic work on them can even make contributions to monetary theory.

Appendix: The Nonconstitutional Attitude

One example of the nonconstitutional attitude appeared in a letter to *U.S. News & World Report* (July 2, 2001) by Secretary of Education Rod Paige. He wrote: “President Bush has offered me and the U.S. Department of Education the opportunity to change the whole enterprise of elementary and secondary education. I am eager to implement his ‘No Child Left Behind’ plan. . . .” Those remarkable words prompted me to write the Secretary and ask where among the limited powers constitutionally delegated to the U.S. government, especially considering the Tenth Amendment, he found authority “to change the whole enterprise of elementary and secondary education.” Eventually I received a reply from a lawyer in the Department, airily citing the general welfare clause.

But that clause, Article I, Section 8, *limits the taxing power* of the federal government to the purpose of “pay[ing] the Debts and provid[ing] for the common Defense and general Welfare of the United States.” That clause was not meant to negate the entire structure of

the government being established by the Constitution, one whose very separation and limitation of powers was intended to serve the general welfare. A limit on the federal taxing power does not authorize Congress to pass whatever laws somebody might consider beneficial.

James Madison ([1788] 1937) emphasized in *The Federalist*, No. 45, that the powers granted to the federal government are “few and defined,” while those remaining to the states are “numerous and indefinite.” He specifically mentioned “finance” among the powers of Congress that are not enlarged but only accompanied by a more effectual mode of administration. And Madison was writing before the Tenth Amendment made this limitation on federal powers even more explicit.

The “No Child Left Behind” Act is already causing worries in the schools of Auburn, Alabama. While the guidelines are fuzzy, a sizable fraction of highly qualified and experienced teachers will apparently have to be sent back to college for retreading—and at whose expense? Flexibility about who can teach what courses will be reduced, and some teachers with ample professional and personal experience in their subject fields will have to be dropped for lack of full educationist credentials (Poole 2003, supplemented by a conversation with the principal of Auburn High School). Again we have an example of the law of unintended consequences and of the fragmentation of responsibility in government. What member of Congress wants to be accused of voting to *leave* some children behind?

Soberingly, the willingness to twist the taxation clause and even the whole Constitution expressed by the Department of Education’s lawyer comes not just from left-liberals but from a Republican administration. All this, I repeat, is just one example of the centralizing tendency that euroland should avoid.

References

- Anderson, R. G., and Rasche, R. H. (1999) “The Domestic Adjusted Monetary Base.” Federal Reserve Bank of St. Louis Working Paper (<http://research.stlouisfed.org/wp/2000/2000-002.pdf>).
- Backhaus, J. G. (2000) “Money and its Economic and Social Functions.” In J. G. Backhaus and H.-J. Stadermann (eds.) *Georg Simmel’s Philosophy of Money: A Centenary Appraisal*, 47–66. Marburg: Metropolis-Verlag.
- Brittan, S. (2003) “Currency Competition: The British Debate.” *Cato Journal* 23 (1) (Spring/Summer): 147–53. Brittan cites Benjamin Friedman, “The Future of Monetary Policy,” in *Social Science and the Future*. London: Centre for Economic Policy Research, 1999.
- Carlson, J., and Keen, B. (1996) “Growing Popularity of U.S. Dollar Abroad

- Helps Taxpayers, Hinders Policymakers.” Federal Reserve Bank of Cleveland *Economic Commentary*, summarized in press release of June 11, 1996. At www.clev.frb.org/research/com/041596pr.htm.
- Duarte, M. (2003) “The Euro and Inflation Divergence in Europe.” Federal Reserve Bank of Richmond *Economic Quarterly* 89 (Summer): 53–70.
- The Economist* (2003a) “Britain and the Euro: No Again” (June 14–20): 51–52; “Economics Focus: Germany’s Euro Test” (p. 77); “Edging Closer” (pp. 4–7 of a special section on the Nordic region).
- _____ (2003b) “Transferring Euros across Borders” (August 9–15): 59–60.
- _____ (2003c) “Charlemagne,” “Stability or Instability?” (November 8–14): 52.
- Friedman, B. M. (1999) “The Future of Monetary Policy: The Central Bank as an Army with Only a Signal Corps?” *International Finance* 2 (3): 321–38 (<http://post.economics.harvard.edu/faculty/friedman/papers/futureofmoney.pdf>).
- _____ (2000a) “Decoupling at the Margin: The Threat to Monetary Policy from the Electronic Revolution in Banking.” *International Finance* 3 (2): 261–72 (<http://post.economics.harvard.edu/faculty/friedman/papers/decouplingmargin.pdf>).
- _____ (2000b) “The Role of Interest Rates in Federal Reserve Policy-making.” In R. W. Kopecke and L. E. Browne (eds.) *The Evolution of Monetary Policy and the Role of the Federal Reserve in the Last Third of the Twentieth Century*, 43–66. Boston: Federal Reserve Bank of Boston (<http://post.economics.harvard.edu/faculty/friedman/papers/roleofinterestrates.pdf>).
- _____ (2002) “The Use and Meaning of Words in Central Banking: Inflation Targeting, Credibility, and Transparency.” NBER Working Paper 8972 (June) (<http://papers.nber.org/papers/w8972.pdf>).
- Friedman, D., and Macintosh, K. (2003) “Technology and the Case for Free Banking.” In F. E. Foldvary and D. B. Klein (eds.) *The Half-Life of Policy Rationales*, 109–24. New York: New York University Press.
- Hayek, F. A. (1977) *Choice in Currency*. London: Institute of Economic Affairs.
- _____ (1978) *The Denationalisation of Money*. 2d ed. London: Institute of Economic Affairs.
- _____ (1984) “The Future Monetary Unit of Value.” In B. N. Siegel (ed.) *Money in Crisis*, 323–35. San Francisco: Pacific Institute for Public Policy Research; Cambridge, Mass.: Ballinger.
- Lebre de Freitas, M. (2003) “Currency Substitution and Money Demand in Euroland” (<http://sweet.ua.pt/afreitas/ecomodmlf.pdf>).
- Lee, T. (2003) “Inflation is a Bigger Danger than Deflation.” *Financial Times* (May 27): 13.
- Madison, J. [Publius] ([1788] 1937) No. 45 in *The Federalist*, 298–304. New York: Modern Library.
- Miles, M. A. (1978a) “Discussion” of three papers in a session on International Exchange Rates and the Macroeconomics of Open Economies. *American Economic Review* 68 (May): 415–16.
- _____ (1978b) “Currency Substitution, Flexible Exchange Rates, and Monetary Independence.” *American Economic Review* 68 (June): 428–36.

- Mueller, A. P. (2003) "The End of Dollar Supremacy?" (<http://mises.org/fullstory.asp?control=1348>).
- Nguyen, E. L. (2003) "The International Investment Position of the United States at Yearend 2002." *Survey of Current Business* (July): 12–21 (www.bea.doc.gov/bea/ARTICLES/2003/07July/0703ITAInvest.pdf).
- Niskanen, W. (2003) "Constitutional Calamity." *Orange County Register* (August 3).
- Paige, R. (2001) Letter to the editor. *U.S. News & World Report* (July 2).
- Poole, K. (2003) "President's 'No Child Left Behind' Initiative Frustrates Teachers." *The Auburn Bulletin* (March 19): A1, A3.
- Savage, T. (2003) "U.S. Could Be Hit Hard If World Loses Faith in Dollar." *Chicago Sun-Times* (June 19) (www.suntimes.com/output/savage/cst-finterry192.html).
- Selgin, G. A., and White, L. H. (2002) "Mengerian Perspectives on the Future of Money." In M. Latzer and S. W. Schmitz (eds.) *Carl Menger and the Evolution of Payments Systems*, 133–58. Northampton, Mass.: Elgar.
- Senn, P. R. (2000) "A Conversation with Professor Simmel about the Euro." In J. G. Backhaus and H.-J. Stadermann (eds.) *Georg Simmel's Philosophy of Money: A Centenary Appraisal*, 67–84. Marburg: Metropolis-Verlag. (Senn conveys his points in an imaginary conversation based on Simmel's *Philosophie des Geldes*, 1900, translated 1990.)
- Sigfrid, K. (2003) "Yes or No to the Euro?" *Ideas on Liberty* 53 (July/August): 34–35.
- Tupy, M. L. (2003) "EU Enlargement: Costs, Benefits, and Strategies for Central and Eastern European Countries." *Cato Institute Policy Analysis* No. 489.
- U.S. Federal Reserve System (2003) *89th Annual Report, 2002*. Washington: Board of Governors of the Federal Reserve System.
- U.S. Federal Reserve and Treasury (2003) Press release of March 14 (www.federalreserve.gov/boarddocs/press/other/2003/20030314/default.htm).
- Vining, R. (1984) *On Appraising the Performance of an Economic System*. New York: Cambridge University Press.
- Watrin, C. (2002) "Will the Europeans Seize Their 'Once-in-History Opportunity'?"—Comments on James M. Buchanan's Essay 'Europe's Constitutional Opportunity'." In G. Brennan, H. Kliemt, and R. D. Tollison (eds.) *Methods and Morals in Constitutional Economics: Essays in Honor of James M. Buchanan*, 313–24. New York: Springer.
- Zuckerman, M. B. (2003) "All Work and No Play." *U.S. News & World Report* (September 8): 86.