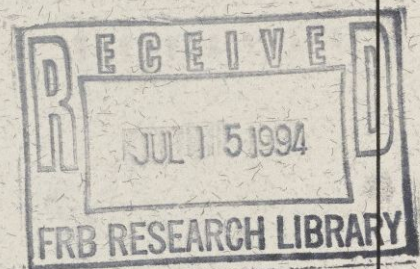


And

Economic Review

January/February 1994
Volume 79, Number 1

Federal Reserve
Bank of Atlanta



In This Issue:

**Some Lessons from Finance for State and Local
Government Development Programs**

Monetary Union in Europe

Review Essay

Economic Review

January/February 1994, Volume 79, Number 1

Economic Review

Federal Reserve
Bank of Atlanta

President

Robert P. Forrestal

Senior Vice President and Director of Research

Sheila L. Tschinkel

Vice President and Associate Director of Research

B. Frank King

Research Department

William Curt Hunter, Vice President, Basic Research
Mary Susan Rosenbaum, Vice President, Macropolicy
Thomas J. Cunningham, Research Officer, Regional
William Roberds, Research Officer, Macropolicy
Larry D. Wall, Research Officer, Financial

Public Affairs

Bobbie H. McCrackin, Vice President
Joycelyn Trigg Woolfolk, Editor
Lynn H. Foley, Managing Editor
Carole L. Starkey, Graphics
Ellen Arth, Circulation

The *Economic Review* of the Federal Reserve Bank of Atlanta presents analysis of economic and financial topics relevant to Federal Reserve policy. In a format accessible to the nonspecialist, the publication reflects the work of the Research Department. It is edited, designed, produced, and distributed through the Public Affairs Department.

Views expressed in the *Economic Review* are not necessarily those of this Bank or of the Federal Reserve System.

Material may be reprinted or abstracted if the *Review* and author are credited. Please provide the Bank's Public Affairs Department with a copy of any publication containing reprinted material.

Free subscriptions and limited additional copies are available from the Public Affairs Department, Federal Reserve Bank of Atlanta, 104 Marietta Street, N.W., Atlanta, Georgia 30303-2713 (404/521-8020). Change-of-address notices and subscription cancellations should be sent directly to the Public Affairs Department. Please include the current mailing label as well as any new information. ISSN 0732-1813

Contents

Federal Reserve Bank of Atlanta *Economic Review*
January/February 1994, Volume 79, Number 1

1 **Some Lessons from
Finance for State and
Local Government
Development Programs**
**Sheila L. Tschinkel and
Larry D. Wall**

Private sector involvement is almost a prerequisite for successfully addressing many social problems. Government may encourage private participation in socially desirable projects by capturing part of the gains and sharing them—in the form of infrastructure improvements or worker training, for example, or subsidized loans.

The challenge for government is finding effective ways to structure such incentives. Poorly structured assistance may result in private parties bearing excessive risk or may reduce incentives for them to exert effort. In order to structure incentives effectively, a thorough understanding of each party's interests is critical. This article discusses the nature of those interests and analyzes the merits of a number of assistance schemes, such as grants and tax abatements, from the perspective of the state or local government supplying the assistance. The authors conclude that because of the individual nature of state and local development projects, each development opportunity's particular factors should be carefully considered to determine the best methods for providing assistance.

St. Louis from Finance for Risk and Local Development Development Programs

11 **Monetary Union in Europe**

Joseph A. Whitt, Jr.

Tumultuous events in the foreign exchange markets have thrown plans for European monetary union into disarray. This article reviews the official plan for monetary union as set out in the Maastricht Treaty and the foreign-exchange developments since Maastricht, exploring various possible causes of the crises that led Britain and Italy to pull out of the European Monetary System and most of the other members to widen dramatically the target bands for their exchange rates. The author concludes that the fundamental source of strain appears to have been the fallout from German unification. In the absence of shocks on a similar scale in the next few years, a limited monetary union by the end of the decade is still attainable, the author predicts, with a number of European Community members likely to be left out initially.

28 **Review Essay—Selected Finance and Trade Reference Books on Latin America: An Update**

Jerry J. Donovan

Increasingly, U.S. investors and others in import/export trade seek to take advantage of Latin America's recent rapid economic growth. This review examines reference books containing information relevant to foreign investment and trade with Latin American countries. The titles reviewed provide a partial checklist for researchers in foreign trade, finance, and public policy, as well as academicians and librarians who seek information sources for Latin America.

Contents

Introduction	1
Chapter I	10
Chapter II	20
Chapter III	30
Chapter IV	40
Chapter V	50
Chapter VI	60
Chapter VII	70
Chapter VIII	80
Chapter IX	90
Chapter X	100
Chapter XI	110
Chapter XII	120
Chapter XIII	130
Chapter XIV	140
Chapter XV	150
Chapter XVI	160
Chapter XVII	170
Chapter XVIII	180
Chapter XIX	190
Chapter XX	200
Chapter XXI	210
Chapter XXII	220
Chapter XXIII	230
Chapter XXIV	240
Chapter XXV	250
Chapter XXVI	260
Chapter XXVII	270
Chapter XXVIII	280
Chapter XXIX	290
Chapter XXX	300

Some Lessons from Finance for State and Local Government Development Programs

Sheila L. Tschinkel and Larry D. Wall

All levels of government have problems funding the programs their constituents want at the tax levels their constituents are willing to accept. At the federal level this conflict has resulted in large and prolonged fiscal deficits that the current Congress and administration are struggling to reduce. Similarly, many states have had to cut their budgeted programs substantially. This continuing mismatch of limited revenues and pressing social issues has led to creative financing of new activities whenever possible.

One way in which the government may reduce its burden in many social projects is by engaging the participation of the private sector. Indeed, private sector involvement is almost a prerequisite for successfully addressing many social problems. However, while the private sector is willing to invest in socially beneficial projects, private participation is likely only if the developer can expect to earn a positive risk-adjusted rate of return. Projects whose costs are likely to exceed the risk-adjusted, present value of the cash flows to the private developer generally will not receive private funding.¹ Even if the project generates very large benefits to the surrounding community, the developer cannot capture these benefits, and he or she is likely to assign little value to them.

Government may encourage private sector involvement in socially desirable projects by capturing part of the gains and sharing them with a private

Tschinkel is Senior Vice President and Director of Research at the Atlanta Fed. Wall is a research officer in the financial section of the Atlanta Fed's research department.

developer. For example, the government perceives gains in economic development that provides more constituents with jobs and income, thereby reducing demand on social welfare programs and expanding the tax base. Similarly, community development projects, such as the development of new and improved infrastructure, can improve development prospects in areas with limited financial resources. Over time, such efforts would also raise standards of living and improve the tax base. These gains can be shared with a private developer by providing resources free, such as infrastructure improvements or worker training, or at a below-market price—subsidized loans, for example.²

This article takes as given that opportunities exist for governments to gain from encouraging private development efforts and focuses on the problem of how best to structure incentives.³ Finding the most effective ways to structure the assistance is in many important respects similar to the challenge facing investors, including financial intermediaries, who seek appropriate behavior on the part of entrepreneurs having projects and talent but insufficient financial resources. In both cases, everything depends on entrepreneurs choosing projects with appropriate risk levels, avoiding excessive risks after starting the project, and exerting maximum effort to make the project succeed.

A potential obstacle is that an entrepreneur's interests may diverge from that of the financier after the money or other resources are in hand. Investors and corporations have worked on establishing financial structures that minimize the costs of these diverging interests, and the corporate finance and financial intermediation literatures offer one important lesson: a thorough understanding of each party's interests is critical. Although it is true that some participants in development projects will do the right thing because it is the right thing, the only safe assumption is that each will act in the manner that best promotes his or her self-interest within the confines of the financial agreement.⁴ Thus, the first part of this article discusses the interests of the various parties involved in economic development.

The second section analyzes the merits of a number of assistance schemes—such as grants, tax abatements, and subsidized loans—from the perspective of the state or local government supplying the assistance. Unfortunately, as in corporate finance, no perfect solution emerges to address all the problems accompanying state and local development projects. Each assistance alternative has its own mix of advantages and disadvantages. For example, a subsidized govern-

ment loan may create only minimal costs if the project succeeds but may be very costly if the project fails. The conclusion suggests that development opportunities should be carefully, individually considered to determine the best method or combinations of methods for providing development assistance.

The Interests of the Various Parties

To the extent that government-supported development generates positive returns to the government, taxpayers benefit. Obtaining these returns often begins with the sponsoring government body providing assistance, usually through a development agency, to a private developer with a project likely to generate adequate returns. The assistance is combined with the developer's own funds and perhaps those of a private lender, such as a bank, in order to build the necessary investment. The developer manages the project, and its proceeds must be divided in a way that earns an at least adequate expected rate of return for taxpayers.

Government faces the problem of how to structure the development assistance program to maximize its rate of return. Keeping in mind that each of the other parties' primary goal is to maximize the net present value of their cash flows from the project, government somehow has to encourage private investment that will maximize the sponsor's gains while minimizing its cost of providing development assistance.

The ideal scenario would be one in which a government sponsor rewarded other participants in a development program on the basis of the project's outcome.⁵ For example, a portion of increased taxes or reduced government spending would be shared with a developer. This approach would provide the greatest incentive both to develop projects that would benefit the government sponsor and to manage them toward that end. In a world in which the outcomes from a development depended solely on the ability and effort of the other participants, such a system would work. However, factors that are not perfectly predictable and are outside participants' control, such as national economic conditions or natural disasters, also influence the course of a development project. State assistance entirely contingent on the outcome of individual development projects would force the other participants in the process to bear increased risk.⁶

If the other participants bear all of the risk, some projects likely to yield acceptable risk-adjusted rates of return will nonetheless not be proposed because

they impose too much risk on some other participant. Taxpayers could encourage the development of riskier projects by assuming some or all of the risk. However, increasing taxpayer risk may create its own problems. First, a developer may take greater risks because he or she would be in a position to keep almost all the private gains from successful projects yet would share the losses from failed projects with the taxpayers. Second, a developer may not try as hard because the costs of failure would be borne at least in part by the government.

Thus, an understanding of each participant's role in the development process is essential for structuring development programs optimally. The structure will influence the effort individual participants exert as well as their approaches to managing risk. The following analysis considers the main issues facing each of the parties in a development project and also points out how a poorly structured program may induce perverse responses.

The Government Sponsor. Investment in publicly supported programs, like investment in a purely private development, should be analyzed in terms of the return and risk of the project. One way of measuring a program's return is to calculate its expected costs and benefits. Of course, the costs, which will probably be borne through a development authority, should generally be expected to exceed the gains. Losses encompass the cost of evaluating the proposed projects to determine their economic and social merits along with any costs beyond those covered by private revenue that are required to induce a developer to undertake a project. It is important to note that a project may generate economic losses even if it generates no accounting losses. For example, a low-interest loan repaid on schedule will not generate accounting losses, but if interest on the loan does not adequately compensate the government for the time value of money, it will generate economic losses.

Costs incurred by the development authority may be somewhat offset by gains to the sponsor's budget that result from a project. For example, gains from higher tax revenues channeled to government or from lower social welfare spending or both may begin sometime after a project has started.

In general, the expenses of assisting private development occur before any gains are obtained. One way of recognizing the timing differential is to calculate a net present value of a project to the government sponsor. The first step is to add the expected increase in tax revenue to the expected reduction in social welfare spending and subtract the cost of the subsidy in

each future period. Each period's net gains or losses are then discounted for the time value of money and the riskiness of the project. The sum of the discounted values would be the project's net present value. Although estimates of net present value may be subject to error because of a variety of factors, the process of calculating it at least enforces the discipline of detailing expected amounts and timing of the various cash flows.⁷

The risk in a project lies in the fact that both the value of the assistance to the project and of the benefits from the project may vary substantially from expectations. For many projects the sponsoring government's more diversified revenue stream puts it in a better position to bear the project's risk. For any given small project, the government sponsor may thus be the most efficient risk bearer. However, excessive risk arises when the government absorbs too much risk from larger projects or from a large number of smaller projects.

The outcomes from most development projects are likely to be highly correlated with the overall health of the local economy. That is, a project will likely succeed when the rest of the community is in good economic health but will most likely fail and further drain local resources during those times when a community is already suffering economic problems and can least afford further losses. Thus, it is crucial that a government carefully evaluate its potential risk exposure under alternative financing schemes to ensure that it could handle the maximum losses possible from supporting a given project. These calculations should consider the overall risk picture as well. In extreme cases, a state or local government may be forced to defer or eliminate projects if the total risk generated by all government-assisted projects would be excessive. One way of reducing the risk to any individual government body is to share the risks across jurisdictions. The financial issues involved in such sharing are discussed in the box on page 4.

The State Development Agency. Although some types of development support schemes do not require the establishment of a separate government agency, in most cases states have set up agencies to oversee state support of private development projects. An agency is responsible for analyzing proposed projects and negotiating the assistance package with the developer. In effect, it acts as an agent for the taxpayers just as the management of a private corporation is acting as an agent for the shareholders.

The senior managers of a development agency, like the senior managers of a corporation, are concerned

Pooling of Development Projects across Jurisdictions

One way for a state or local government unit to diversify its portfolio of development projects is to pool resources with other state or local governments to fund a geographically dispersed set of projects.¹ The net result of such diversification would be to reduce the chances of spectacular success for any one government, but it would also reduce the risk of disastrous loss.

The pooling of projects across jurisdictions to reduce risk is similar to banks reducing the concentration of loans in their portfolio by “participating out” part of the loan—that is, selling part of the cash flows from a loan to another bank.² The selling bank typically retains responsibility for collecting loan payments and distributing them to the banks that purchased the participation. The purchasing bank, however, takes a proportional share of the risk that the loan will not be fully repaid. One danger recognized in the loan participation market is that the selling bank may choose to sell only its high risk loans or that it may not adequately monitor the borrower.

Purchasing banks rely on several protections to reduce the risk that they are buying bad loans. Selling banks typically keep part of the loan so that they will also suffer losses if the loan is not repaid. Further, banks’ continuing access to the loan participation market depends on their maintaining a good reputation for participating out quality loans. Finally, the purchasing bank can—and regulators expect that it will—conduct an independent analysis of the loan before entering into the participation. These protections usually result in loans that are of higher quality or are easier to value or both. However, some banks have suffered very large losses and even failed as a result of not adequately analyzing the loan participations that they purchased.³

Pooling resources across governmental units may present risks similar to those created by loan participations. Each governmental unit is depending on the others to evaluate and monitor ongoing projects. However, the sponsors and their development agency may not have equal abilities to evaluate and to monitor projects that might place the stronger development agencies at risk from the weaker agencies. Further, reducing the share of risk borne by a sponsor and its development agency may encourage support of projects with lower expected returns and higher risk.

Thus, under ideal circumstances pooling resources across jurisdictions will reduce the risk borne by individual government sponsors. However, the problems created in less than ideal circumstances—the likely situation in almost all cases—may be severe. Government sponsors should carefully evaluate the risks they are taking in pooling resources before agreeing to participate in such programs.

Notes

1. See Zelinsky (1984) for the argument in favor of pooling development investment across geographic regions.
2. However, because most projects would not be expected to earn a market rate of return, the funds would need to be pooled at the start rather than allowing each government to choose individual projects.
3. Zweig (1985) points out that Seafirst was forced to merge with BankAmerica, and Continental Illinois required FDIC assistance in large part because of problems with loans they participated in with Penn Square Bank in Oklahoma.

with promoting their own interests as well as those of their principal. For example, they are likely to be concerned with increasing their lifetime earnings as well as with enhancing the budget and prestige of their agency. Thus, the sponsoring government should be as careful as the shareholders in a private corporation to consider the incentives it creates for these senior managers.

The sponsor will wish to reward a development authority for its success in identifying and assisting projects that both would not occur without government support and that will provide net benefits to the taxpayers. However, because the sponsor has only limited information on the opportunities and actions of a development authority, it cannot easily structure a system that provides appropriate rewards. Without com-

plete information as a basis, incentives may miss the mark.

One problem area concerns ensuring that a development authority screens projects effectively for economic viability. Appropriate incentives should lead a development authority away from projects that have no reasonable prospect for success. However, care must be taken to prevent too much emphasis on avoiding failure. Recall that the primary social purpose for state support of development projects is that the projects may yield social gains even though they would produce net losses to a private developer. Thus, a successful development authority should expect to suffer economic losses.⁸ If an authority is not incurring losses, it may be that its support is being wasted on projects that would have received adequate private fi-

nancing had there been no government support. Further, strong incentives to avoid losses may encourage development agency administrators to hide problem loans in the hope that they will not be revealed on the current administrator's watch. One costly example of excessive incentive to avoid losses may have been decisions by federal government officials to defer recognition of losses in the thrift industry that helped contribute to the massive losses by the thrift deposit insurance agency (see Edward J. Kane 1985). Thus, the incentives to avoid losses may be too strong or too weak.

Another challenge is providing incentives for agencies to pursue development opportunities. If too few are given to the authorities, then their officials may not put forth sufficient effort. However, if the incentives are too attractive, the authority may get involved in too much and provide unnecessary support simply to appear to meet the taxpayers' goals. For example, an authority may be too aggressive in supporting projects that would have occurred in its jurisdiction even with less aid. By providing the unnecessary support, the development agency would be inflating the number of successful projects supported.

A related problem occurs when different sponsors and development agencies compete, especially for large economic development projects. Each sponsor and its development authority may measure the costs and benefits of supporting the development from the narrow perspective of its individual jurisdiction. This sort of competition may result in a private developer receiving support far in excess of what would have been required to induce undertaking the project. Indeed, a "winning" development agency may provide incentives to a developer that cost virtually the entire social gain the sponsor might have hoped to obtain.⁹

The Private Developer. A private developer is generally responsible both for helping to identify development projects with potential for government support and managing approved projects. In the absence of governmental assistance a developer will analyze a project solely on the basis of expected cash flows. With government assistance a developer may be willing to undertake socially desirable projects that would otherwise be avoided because they would yield an inadequate rate of return. However, the structure of the government assistance may significantly influence decisions about the types of projects initiated and the way in which the projects are managed.

An obvious goal in structuring state assistance is to provide the minimum level of state assistance that will

persuade developers to embark on socially useful projects. However, only the developer knows precisely what that minimum level of aid is.¹⁰ It should generally be expected that taxpayer assistance will exceed the amount required by the developer by at least some small amount. Thus, a development authority should anticipate that a developer will earn an above-market rate of return, adjusted for risk, on any given development project. Nevertheless, the authority should try to limit the size of the excess returns.¹¹

Another important issue in structuring development assistance is that of how risk would be divided should the project fail. If the project's riskiness is independent of a developer's decisions and actions, then efficient risk-bearing considerations suggest that the taxpayers should bear a relatively large part of the risk of failure. However, there are several ways in which a developer may influence the riskiness of a project. First, a developer selects the projects for which taxpayer assistance is sought. If the taxpayer assumes too large a fraction of the risk of failure, the fact that a developer's losses would be mostly covered by a development agency in the event of failure creates an incentive for the developer to propose risky projects that would yield large gains if successful. Second, depending on the specific contract with the development agency, a developer may be able to shift some of the investment to the relatively riskier parts of the development project, which would increase the risk of loss to the agency.¹² Third, a developer may choose to forgo additional investment in the safer parts of a project if most of the gains from doing so would go to the taxpayers or other creditors.¹³ Thus, if the state absorbs too much risk, the developer is encouraged to further increase the riskiness of the project. Although it may not be desirable to eliminate the risk-taking incentive, careful structuring of the aid (discussed below) may reduce a developer's incentive to take more risks.

The Private Lender. A private lender may supplement a developer's investment and the state's assistance with a loan to the developer. If so, a lender may provide a separate evaluation of the economic merits of a development project and may also monitor ongoing projects to ensure that they are well managed and continue to be economically viable.

The structure of the government assistance program may significantly influence private lenders' efforts in analyzing and monitoring loans. They should be expected to exert effort only up to the point at which the marginal benefit of further effort equals the marginal cost of that effort. By absorbing some or all of the risk

of failure, a government assistance program may reduce the marginal benefits of analyzing and monitoring loans. With nothing at stake, the lender has little incentive to undertake costly analysis and monitoring of development loans.

Forms of Project Support

Government aid to development projects may take a number of different forms, including grants, subsidized inputs, tax abatement, loans, loan guarantees, and interest subsidies. The type of development aid may have a major impact on expected costs and risks involved in assisting a project and on the probability of a project's success.

Grants. One way of supporting a development project is to give the developer financial or real resources—for example, land on which to build a factory—with no repayment required. If not properly structured, such grants may serve as an incentive for developers to create uneconomic projects to obtain the money. However, careful screening or requiring a developer to invest a substantial amount of private funds as a precondition for receiving the grant can reduce the risk that developers will misuse grants.

After receiving a grant and investing in a project, a developer has the same incentives as if the government had not provided any assistance. A developer reaps all direct rewards and bears all costs of failure. Thus, a developer has an incentive to exert maximum effort and to manage the risk of the project optimally. If a developer also seeks a private loan, the lender retains the full incentive to evaluate the economic merits of the project after adding in the grant.

A development agency does not share in any of the gains from successful projects awarded grants, but neither is it at any additional risk from a failed project. The sponsoring government is at risk, however, in that taxpayers who provided the grant will receive the benefits of increased taxes or reduced spending only if the development is successful.

Subsidizing Improvement of Local Production Factors. A government may assist a developer by promising to upgrade one or more local factors of production at taxpayers' expense. For example, a state may promise to subsidize worker training or lease a state facility at a below-market rate.

Subsidizing a production factor reduces a developer's costs but leaves him or her responsible for the remaining investment. A developer retains most of the

risk of failure and reaps all of the private rewards from a successful project. As a consequence, this kind of development assistance does not provide a developer with an incentive to increase the risk of the project.

The expected cost of the program to a development agency is fixed. However, the government sponsor's risk is reduced by this form of aid because the sponsor retains something of value even if the project fails. For example, if a development agency subsidized worker training, the local area will benefit from having more highly skilled workers whether the project succeeds or not.¹⁴

Tax Abatement. The government sponsor may encourage economic development by agreeing to reduce or eliminate required tax payments from the developer for a specified period of time. For example, the sponsor may agree not to levy property taxes on the development site or income taxes on income earned from the development.

The value of tax abatement to the developer is positively correlated with the success of the project. If the project fails, the developer may not have paid any taxes even without the abatement. However, if the project succeeds, the tax abatement may be very valuable. Thus, tax abatement provides added incentive for the developer to make the project a success. Tax abatement also discourages developers from operating in a high-risk fashion since the abatement may be almost worthless if the development fails. The one possible disadvantage of tax abatement is that it may assign relatively too much of the risk to a private developer. That is, if a project succeeds the developer receives benefits, but if a project fails a developer may not actually receive any assistance even though the offer of tax abatement was necessary to get the project under way.

Tax abatement may minimize the risk to the government sponsor. Although tax revenues from the developer are reduced, the largest reductions occur when the project succeeds, in which case the state should see increased tax revenues from the workers as well as a possible reduction in social welfare spending. However, if the government is able to bear risk at a lower cost than a private developer, tax abatement may result in an inefficient sharing of risk.

Loans. The state may assist a developer by providing loans to finance a project. Alternatively, the state may guarantee some or all of the private loans to a developer. In either case a private developer receives a subsidy equal to the difference between the cost of obtaining the loan without state backing and the cost of the loan with state backing.

Full Loan Guarantee. If the state absorbs all the risk from loans, then it can create an incentive for a developer to take additional risk. A developer keeps all returns in excess of the loan value but is liable for losses only to the extent of his or her investment in the project. Thus, the amount of investment required may play an important role in determining the risks taken by that developer. An agency may also protect itself by monitoring the developer during the course of the project.

A development agency cannot count on assistance in evaluating and monitoring loans from a private lender if the loan is 100 percent guaranteed. Protected from loss by the development authority, the private lender has little incentive to undertake costly activities.

Although it bears considerable risk, the government sponsor may receive substantial benefits in this scenario when a project succeeds. The loan is repaid—or at least the loan guarantee is not activated—while the government also receives higher tax revenues and may have lower outlays. However, the risk may be especially great if the outcome of the development project is highly correlated with the state of the local economy.

Shared Risk. A state development agency may reduce its risk and encourage private lenders to expend more effort in analyzing and monitoring loans by absorbing only part of the loan losses from failed development projects. A development agency has two general options for sharing the risk: (1) the agency absorbs the first X percentage of the losses (where X is some number between 1 and 100), and the private lender bears any remaining losses; and (2) the agency shares proportionately in the loan losses with the private lender. Both options may be achieved through direct loans from the development agency or via loan guarantees from the development agency to the private lender.

The extent to which the first option reduces a development agency's risk exposure depends on the type of project being funded and the value of X . If the losses on a particular type of development project are usually less than 50 percent of the loan amount, then a state loan guarantee of 90 percent of the loan will be only marginally better than a 100 percent guarantee. The 90 percent guarantee likely absorbs virtually all of the risk that the project may fail so that private lenders have very little incentive to screen such a loan carefully; primary responsibility for analyzing such borrowers remains with the state. However, if the typical loss on a type of development in the event of its failure is 80 percent and the state loan guarantee is for only 50 percent of the loan value, the development authority has shifted significant risk to a private lender. One way

of measuring the expected loss is to evaluate the value of the collateral. The risk of loss may be low if the collateral for the loan is a high proportion of the loan's value and the collateral can be readily sold at market value.¹⁵

The second option reduces losses in direct proportion to a private lender's share of the losses. For example, if the state guarantees 75 cents of every dollar lost on failed loans, then the private lender is taking 25 percent of the risk.

The state may reduce its risk exposure and increase a private lender's effort by reducing its share of the risk of loan failure. However, the value of a partially government-backed loan to the private developer is directly proportional to the amount of risk absorbed by the state. One way for the development agency to reduce its risk and increase private monitoring without reducing the value of the subsidy is to reduce its charge to the private developer, either by reducing the interest rate on the government loan or by reducing the fees for obtaining a government loan guarantee.

Loans versus Guarantees. Although loan guarantees may contain the same risk-sharing features as direct loans, the use of loan guarantees may be riskier for the government sponsor. Direct loans from a development agency appear to be costly because they require the government to appropriate taxpayers' funds or to borrow every dollar loaned. Loan guarantees may seem to be less costly, particularly if the government sponsor appropriates funds equal only to the expected cost of the guarantees. Sponsors may seek to leverage appropriated funds by guaranteeing a far higher dollar value of loans than it would be able to provide through a direct lending program. However, loan guarantees carry exactly the same risk as comparably structured direct loans from a development agency. The loan guarantees could be very costly if the expected losses were underestimated on the basis of overly optimistic figuring or unexpectedly adverse economic conditions. Failure of a large fraction of the development loans at a time when the local economy is already distressed could make the higher volume of loan guarantees especially costly to the government sponsor.

Interest Subsidy to the Borrower. A development agency may subsidize a project without discouraging the private lender's analysis and monitoring by providing an interest subsidy to the borrower. An interest subsidy is similar to government loan and loan guarantee programs in that both types of assistance work by lowering a private developer's effective cost of funds. However, the two alternatives have very different

incentive and risk-sharing implications. The interest subsidy approach does not significantly reduce the risk borne by a private lender. Thus, private lenders are left with a strong incentive to screen, monitor, and collect on loans to private developers. If a private lender is less diversified than a government sponsor of the development agency, these incentive effects may be somewhat offset by less efficient risk-sharing. However, there are cases in which having a private lender retain all risk may be more efficient than shifting it to the government, and interest rate subsidies may be the best assistance mechanism. For example, some banking organizations are more diversified than any individual state government because they have subsidiaries in a number of different states.

The expected cost of an interest subsidy program to a development agency is the amount of the subsidy. Whether the subsidy is paid after a project fails depends on how the program is structured. However, the key in evaluating a development agency's risk is that in no case is the agency liable for more than the amount of the subsidy.

Conclusion

Different types of assistance to development projects have different consequences for state and local governments as well as for private developers. States should consider not only the financial condition but also the risk aversion of developers in structuring their financial packages. However, they should also consider the implications of alternative support schemes in terms of the incentives each creates for developers and private lenders as well as the likely effect on the state's financial condition. In some cases state or local governments may prefer support schemes that appear to be more expensive but that have better incentive or risk-sharing implications. The various alternatives may also be combined so as to carefully calibrate the risk borne by the developer, the private lender, and the state. The basic principles discussed in this essay should help in analyzing more complicated support schemes.

Notes

1. There are at least three other reasons why private developers may not be able to obtain funds to undertake projects with a positive net present value: (1) analysis of the loan may be too costly, (2) monitoring of the loan may be too costly, and (3) collecting on the loans from successful projects may be too costly. Srinivasan (forthcoming) considers the case for government intervention in these cases with a special focus on the experience of third-world programs.
2. One problem in providing resources free or at reduced prices is that doing so may change the developer's incentives in perverse ways. For example, the provision of grants may encourage the developer to promote projects that have little chance of success but involve minimal cost of failure.
3. Bartik (1991) provides evidence that development programs run by state and local governments may increase social welfare.
4. In some cases the private parties will participate for civic reasons rather than personal gain. However, a government program that depends on public-spirited developers may miss significant opportunities if too little return is offered to less altruistic ones. Alternatively, if the rules are too loosely written, the government may suffer losses because of unscrupulous or well-intentioned but naive developers.

The state development authority is likely to take account of the sponsoring government body's goal. However, government agencies often develop agendas on the basis of the costs and benefits of alternative policies to the agency. Their

agendas are not necessarily responsive to shifts in voters' preferences.

One could argue that voters also face a problem inducing elected representatives to consistently follow policies in society's best interest. However, a discussion of the optimal design of a representative government is well beyond the scope of this paper. Thus, it is assumed that elected representatives have the same goal as voters.

5. The term *other participants* refers to the development agency, private developers, and, when applicable, private lenders.
6. One problem with forcing the other participants to bear risk is that their cost of doing so may exceed the government sponsor's cost of bearing it. One way of measuring the cost of financial risk to the various participants in a development is to compare the expected value of the risky cash flows with their certainty equivalent value to each of the participants. The certainty equivalent value is the amount of cash to be received with certainty that is required to make the individual indifferent between the risky cash distribution and the certainty equivalent amount. The taxpayers will often have the lowest cost of bearing risk because the government is likely to be more diversified than the other participants in most cases. The greater diversification arises because the government has the ability to levy taxes on the entire community.
7. Several variables can affect the accuracy of estimates of net present value. For example, the expected value of many of

the relevant cash flows must be estimated; extremely successful development projects may require additional spending on infrastructure; and many of the jobs may be taken by unemployed workers that move in from or commute from other jurisdictions rather than individuals in the local tax base. In addition, extremely successful projects may result in spinoff projects that generate higher tax revenues than anticipated, at least partially offsetting any higher infrastructure costs involved.

A simple way of measuring the cash flows would be to calculate the expected cash outflow from the government in every period and to determine the expected tax receipts based on projected employment for every period. An example of this type of analysis is provided by Marvel and Shkurti (1993). (Note, however, that they summed cash flows through time rather than using cash flows discounted for the time value of money and for risk). The analysis becomes more complicated if other factors should be recognized, as is often the case. For example, worker training and improved roads may facilitate other development that could increase the expected cash flows from the development assistance. Conversely, some of the workers for a project likely would have been employed in a different job absent the project, so the use of these workers' total tax payments will tend to overestimate the true increase in tax receipts. Given that the evaluation of projects at this time is as much an art as a science, government sponsors should not overlook resources for analysis that may be available through local universities.

8. Also, recall that the losses of the development authority should be offset by gains from higher tax revenues or lower spending by the government sponsor.
9. Another reason that development agencies may bid too high is the so-called winner's curse. The winner's curse arises in bidding situations in which the projected benefits of winning the bid are subject to measurement error. If the bidders are unaware that their estimates are subject to measurement error, then the bidder that most overestimates the projected benefits will likely win the auction. Thus, the winner of the auction is likely to find that they overbid in the auction. See Thaler (1988) for a discussion of the winner's curse.
10. The minimum required aid will depend on the characteristics of the project and of the developer. In general the developer should be expected to know more about the project's

prospects than does the development agency. The characteristics of the developer are important in a number of ways. For example, a developer with above-average risk aversion may require a higher expected return than one with below-average risk aversion.

11. One way potential gains to developers could be reduced or eliminated would be if the developers have to bid on a common project for government aid. However, in many cases bidding competition is not feasible because only one developer has both the local expertise and an interest in participating in the project. Another way the authority may try to limit the size of the returns is by developing its own estimate of the minimum aid required to induce the private sector to participate in the project. The cost of making such an estimate may exceed the benefits for small development projects but could prove valuable in determining how much to offer for larger projects.
12. This danger is called risk shifting in the corporate finance literature. Barnea, Haugen, and Senbet (1980) show that private firms are most likely to engage in risk shifting if their loans mature after the project's cash flows are received. This is the case because in such loans a private lender may not demand compensation after observing the type of project actually undertaken by the firm.
13. The risk that a firm will forgo profitable investment is called the underinvestment problem in the corporate finance literature. Myers (1977) first points out that debt-financed firms may have an incentive to forgo profitable investments if most of the gains are received by the debtholders in the form of a reduction in debt and in the probability that the firm will default.
14. The value of the increase in worker skills will depend on the type of training they receive. In some cases most of the training may be readily transferred to other firms, but in other cases most of the training may be useful only for a specific firm. Also, the continuing value of training to the local government will depend on the availability of firms that will use the new skills. If demand for the new skills is reduced, then some of the trained workers may move to locations where they can use their new skills.
15. Local banks and other lenders may also be able to provide reasonable estimates on the expected losses on loans to different industries.

References

- Barnea, Amir, Robert A. Haugen, and Lemma W. Senbet. "A Rationale for Debt Maturity Structure and Call Provisions in the Agency Theoretic Framework." *Journal of Finance* 35 (1980): 1223-34.
- Bartik, Timothy J. *Who Benefits from State and Local Economic Development Policies?* Kalamazoo, Mich.: W.E. Upjohn Institute for Employment Research, 1991.
- Kane, Edward J. *The Gathering Crisis in Federal Deposit Insurance*. Cambridge, Mass.: MIT Press, 1985.
- Marvel, Mary K., and William J. Shkurti. "The Economic Impact of Development: Honda in Ohio." *Economic Development Quarterly* (February 1993): 50-62.
- Myers, Stewart C. "Determinants of Corporate Borrowing." *Journal of Financial Economics* 5 (1977): 147-75.

Srinivasan, Aruna. "Intervention in Credit Markets and Development Lending." Federal Reserve Bank of Atlanta *Economic Review* 79 (forthcoming 1994).

Thaler, Richard H. "Anomalies: The Winner's Curse." *Journal of Economic Perspectives* (Winter 1988): 191-202.

Zelinsky, Edward A. "The Dilemma of the Local Social Investment: An Essay on 'Socially Responsible' Investing." *Cardozo Law Review* 6 (1984): 111-46.

Zweig, Phillip L. *Belly Up: The Collapse of the Penn Square Bank*. New York: Crown Publishers, Inc., 1985.

Monetary Union in Europe

Joseph A. Whitt, Jr.

Building on the foundation of the European Monetary System (EMS), European leaders announced in late 1991 that they had agreed to move forward to monetary union by the end of the decade. At the time, monetary union was widely seen as the next logical step in a process of gradual economic integration that had been pursued by the European Community (EC) since the 1950s. Now, more than two years later, planning for monetary unification continues, but the foundation for this step has crumbled: the Italian lira and British pound were forced out of the EMS exchange rate bands in September 1992, and in 1993 the bands of most of the remaining members were widened dramatically, leaving the EMS a shadow of its former self.

This article reviews the plans for European monetary union and the tumultuous events in the foreign exchange markets that have thrown those plans into disarray. As background, the discussion first sketches the development of the EMS from its founding in 1979 until the collapse of the Berlin Wall in 1989. The official plan for monetary union, as set out in the Maastricht Treaty, is reviewed, as are foreign exchange developments since Maastricht. Only six months after the Maastricht Treaty was announced, the EMS exchange rate bands came under severe strain. The initial result was the departure of the Italian lira and British pound from the system; however, in the summer of 1993 severe pressure returned, culminating in a drastic widening of the bands for the French franc and nearly all the remaining members of the EMS. The discussion explores various possible causes of

The author is an economist in the macropolicy section of the Atlanta Fed's research department. He thanks Roberto Chang, Marco Espinosa, William Roberds, and Mary Rosenbaum for helpful comments and Michael Chriszt for research assistance.

the EMS crises, which occurred after a number of years of remarkable stability. In some countries, there is evidence that devaluations were almost inevitable, given the policies of their governments. In others, market speculators have been blamed, but this argument has weaknesses. The fundamental source of strain appears to have been the fallout from German unification. The final section presents conclusions and possible implications for the future of European monetary union.

Evolution of the EMS

Serious attempts to move toward European monetary union date back to the early 1970s, when the Bretton Woods system of fixed exchange rates broke up. During the Bretton Woods period most of the exchange rates between the United States, Japan, various countries in Western Europe, and other countries such as Australia were all fixed by international agreement supported by governmental commitment to intervene to maintain the rates. When the Bretton Woods system broke down, various members of the EC sought to limit exchange rate movements within Europe while maintaining flexibility as compared with outside currencies, notably the U.S. dollar. Early attempts were unsuccessful, but the EMS, which began operating in 1979, succeeded in reducing exchange rate variability among its members, especially in the second half of the 1980s.

The original members of the EMS were West Germany, France, Italy, the Netherlands, Belgium, Denmark, Ireland, and Luxembourg. They set target or parity values for their bilateral exchange rates and agreed to intervene to ensure that market exchange rates remained within a band of plus or minus 2.25 percent from those parities. The one exception was Italy; its allowable band was considerably wider (plus or minus 6 percent), thereby providing greater freedom of action for its central bank.

Although the EMS imposed tight limits on most of the exchange rates within the system, it did not freeze them indefinitely. In particular, the agreement allowed for occasional realignments of the parity rates. Realignments were intended to keep the exchange rate parities consistent with longer-term economic fundamentals, such as a persistent divergence of inflation rates in different member countries.

During the early years of the system, realignments occurred on average about once a year. Several of the

largest realignments were caused by a policy divergence between the two largest members of the EC, France and Germany. The election of President Mitterand in 1981 brought the first Socialist government to power in France since the 1950s.¹ The new government initially pursued expansionary macroeconomic policies designed to stimulate the sluggish French economy while at the same time nationalizing various industries. During this period, Germany was tightening macroeconomic policy to fight inflation, which had soared in the wake of the oil price rises of 1979-80. This policy divergence produced large outflows of capital from France to Germany, as well as heavy pressures on the French franc. As a result, there were three devaluations of the franc against the deutsche mark between October 1981 and March 1983, totaling over 20 percent.

After the third devaluation, the French government did a policy U-turn. Anti-inflationary measures were enacted, and French monetary policy was reoriented toward the goal of maintaining the parity value of the franc versus the deutsche mark. Over the remainder of the decade, there were only two relatively small devaluations of the franc vis-à-vis the deutsche mark, the last one occurring in early 1987.

By the mid-1980s, there was fairly widespread agreement among European policymakers, supported by some economists, that the EMS had successfully reduced exchange rate fluctuations among a core group of countries. West Germany was to some extent the anchor or leader of the system, by virtue of its economic size, the long-term strength of its currency (during the various realignments of the EMS, the deutsche mark was never devalued in relation to any other member currency), and the prestige and independence of its central bank.

The leadership position of West Germany in the EMS was to some extent contrary to the intentions of the designers of the system, who hoped that the burden of adjustment to disequilibria in the exchange markets would be shared symmetrically by the members (Jacques van Ypersele 1979, 6). In its actual operation, though, there was a common perception that the burden of adjustment fell mainly on higher-inflation countries with external deficits and not on West Germany. According to the formal rules of the EMS, both deficit and surplus countries were supposed to intervene to maintain the exchange rate pegs, but as Cristina Mastropasqua, Stefano Micossi, and Roberto Rinaldi (1988) show, most of the intra-European intervention was by Germany's partners. As for Germany, which usually had a surplus, it appeared to fully steril-

ize its intervention within three months; when Germany did intervene, it usually did so in the market for U.S. dollars.

The result of this asymmetry was that, in the words of Massimo Russo and Giuseppe Tullio (1988, 41), "Germany decides its domestic inflation rate and all other members adopt policies to adjust their own gradually to it." As discussed by Charles Wyplosz (1989) and Horst Ungerer and others (1990, 9-11), this asymmetry was basically attributable to the necessity for deficit countries to limit their reserve losses while surplus countries (notably Germany) faced no comparable pressure in the other direction. An alternative explanation discussed by Francesco Giavazzi and Marco Pagano (1988) is that countries with a history of inflationary policy deliberately chose to tie their currencies to the deutsche mark as a way of strengthening the credibility of their commitments to a lower-inflation future.

Empirical work on the extent of asymmetry has been mixed. Daniel Cohen and Wyplosz (1989) found that movements in German short-term interest rates affect similar rates in other EMS members (in particular, France and the Netherlands) but that some of the other members also have an impact on Germany's rates. Their results are not inconsistent with the idea that Germany is preeminent in the EMS, though, because past movements of German interest rates explain a substantial portion of movements in French and Dutch interest rates while the other EMS countries show much smaller, if any, impacts on German interest rates. Using a more complex model of interest rate movements that allows for a variety of possible interactions, Jürgen von Hagen and Michele Fratianni (1990) found that while other EMS members react to German monetary policy, Germany reacts to policy changes in the others as well. Nevertheless, von Hagen and Fratianni's results support a preponderant, though not dominating, role for German policy in the EMS: in most cases the response of German interest rates to movements in rates in other EMS members is much smaller than the response in the other direction.²

Other studies definitely favor a predominant role for Germany. With regard to interest rates, Giavazzi and Alberto Giovannini (1987) examined interest rate movements preceding EMS realignments, finding large movements of French and Italian offshore interest rates but almost no changes in German rates. In their view, this asymmetry is a reflection of Germany's central role in the EMS, as portfolio shocks are absorbed almost entirely by its partners. Moreover, P. Artus and others (1991) examined both short- and

long-term interest rates; they found that French short-term interest rates are affected by developments in Germany while German short-term rates are affected by U.S. variables but not by French rates.

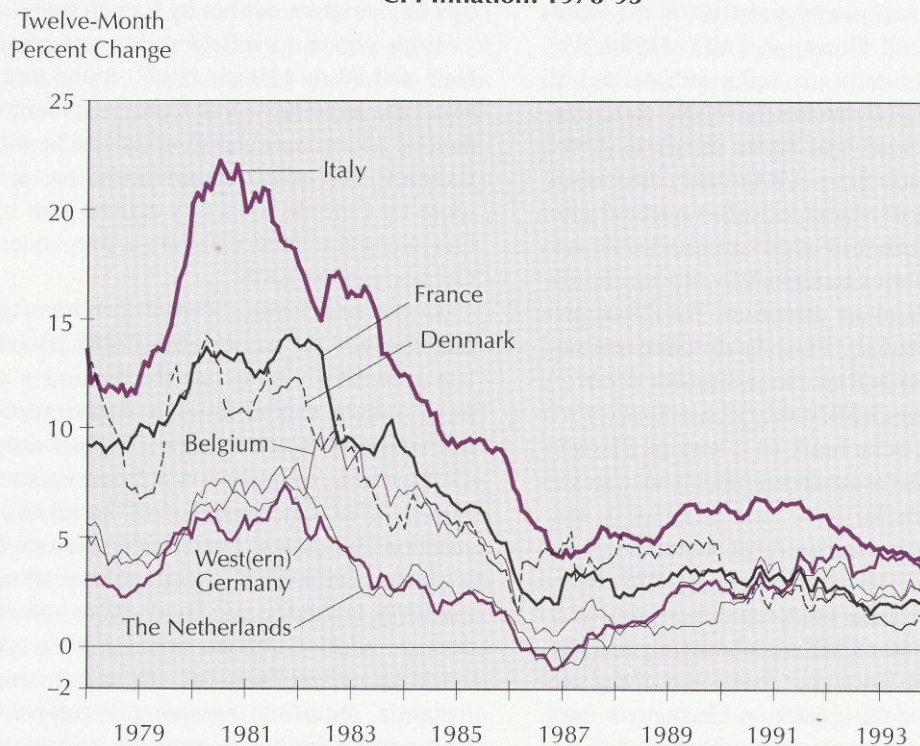
With regard to inflation determination, Bernhard Herz and Werner Röger (1992) found that they cannot reject the hypothesis that German inflation is independent of policy variables in other EMS countries but inflation in the other member countries is affected far more by German monetary actions than by their own. Overall, the evidence favors a preponderant role for Germany in the EMS.

In the late 1980s, several developments occurred that changed the nature of the EMS. Hoping to stimulate growth by eliminating the remaining artificial barriers to trade, capital flows, and labor mobility, the EC governments agreed to the Single European Act in 1986, which set in motion a process sometimes called Europe 1992. One provision of the act required that restrictions on capital flows within Europe be abolished by July 1, 1990.³ The abolition of capital controls made the EMS exchange rate bands more vulnerable to sudden speculative attacks; without controls, vast sums could be moved from one currency to another almost instantly, requiring massive government intervention to maintain the bands even for a short time. Policy-makers responded by essentially announcing that there would be no more realignments, in the hope that this posture would eliminate the incentive for a speculative attack to begin. Such a stance was at least somewhat credible for several years because, as Chart 1 shows, by the late 1980s inflation rates in the core countries of the EMS had converged substantially, thereby reducing the need for periodic currency realignments.

The second important development was the expansion of the EMS to include additional countries. The most important addition was the United Kingdom, which joined the EMS in October 1990 after several years of shadowing the system.⁴ Spain also joined in 1989.⁵ These additions made the EMS a less homogeneous group of economies: Spain is poorer than most of the other members, and the United Kingdom is a major oil producer while the other members all import most of their oil.

The third, and most important, development was the collapse of communism in Eastern Europe and the resulting unification of Germany. As a result, Germany, for years the anchor of the EMS, moved almost overnight from having very low inflation, tight fiscal policy, and a large current account surplus to considerably higher inflation, massive budget deficits, and a

Chart 1
CPI Inflation: 1978-93



Source: Calculated by the Federal Reserve Bank of Atlanta using data from the International Monetary Fund.

large current account deficit. Moreover, the collapse of communism created a dilemma for the EC. Before the collapse, the EC was concentrating its efforts on deepening the political and economic integration of its existing membership—for example, in the Europe 1992 initiative. After the collapse, another possibility beckoned: widening the Community to include additional countries. Various neutral countries that had previously been constrained by political factors from joining the EC, such as Austria and Finland, began seeking membership, as did some of the formerly communist countries, such as Poland and Hungary.

In the financial markets, the immediate reaction to the collapse of communism was a sharp rise in long-term interest rates in Germany and most other industrialized countries. The most common explanation for this rise was the notion that the formerly communist countries, filled with obsolete machinery and equipment, offered tremendous investment opportunities and would soon begin to attract large inflows of capital from the West. This new source of demand for cap-

ital would raise real (adjusted for inflation) interest rates throughout the world.

Early on, some economists argued that the deutsche mark be revalued vis-à-vis its EMS partners; David Begg and others (1990, 65) wrote that “the case for an immediate DM realignment is overwhelming.”⁶ However, the EMS seemed to experience no immediate strain, and policymakers in Europe rejected the option of an EMS realignment. Instead, they vowed to push forward with the Europe 1992 initiative, and they moved ahead with negotiations to go beyond the EMS’s limits on exchange rate movements to full monetary union.

Monetary Union and the Maastricht Treaty

Under the most common proposals for monetary union, a new European currency would replace the

various currencies of individual nations. A new European Central Bank, governed by directors from various countries, would be responsible for monetary policy; the existing national central banks would lose the ability to conduct independent monetary policies.⁷

In a sense, monetary union would mean a tightening of the EMS structure, with exchange rates being fixed permanently and the allowable fluctuations being shrunk to zero. However, the proposed monetary union would go beyond simply fixing exchange rates because as long as separate currencies continue to circulate, it would be a simple matter to change exchange rates at some future time. The potential for a quick change in exchange rates would provide an incentive for private market participants to shift massive amounts of funds from one currency to another whenever the credibility of the government's commitment was in doubt. By contrast, if a new European currency replaced the old national monies, changing an exchange rate would require a government to introduce a whole new money.

Monetary union was seen by policymakers as a logical next step in the process of European economic integration. From an economic perspective, one gain from monetary union would be the savings in transactions costs on the huge volume of cross-border trade within Europe. Travelers within the EC could go from one country to another without the expense of converting one currency into another, just as Americans can use dollars in any of the fifty states. More importantly, business transactions between, for example, France and Germany could be done without the necessity of converting francs and deutsche marks. Using bid-ask spreads in the foreign exchange markets to measure transactions costs, the European Commission (1990, 68) estimated the savings at 0.3 to 0.4 percent of annual GDP. The gain would arise as bank employees and other resources currently used to convert funds from one currency to another were redirected into other uses. Leaving aside transaction costs, the reduction in exchange rate variability inherent in monetary union could increase the volume of international trade and provide an additional gain in social welfare.⁸

Another benefit arises from the possible elimination of negative cross-border externalities of economic policy. Koichi Hamada (1976) used game theory to show that if each country makes policy choices separately, without considering the external impacts of its decisions, the resulting policies are suboptimal, in the sense that every country could be made better off if they made policy choices in a joint, cooperative fashion, taking account of all external impacts. Monetary union and the

replacement of national central banks by a single European central bank might represent a move to cooperative policymaking, with benefits for all EC members.⁹

On the negative side, there is the possible cost of giving up exchange rate changes as a stabilization device. In Robert Mundell's (1961) analysis, a drop in demand for the output of a particular region may produce intolerable increases in unemployment. With wage rates sticky, prevented from dropping by long-term contracts or social convention, firms react to such a drop in demand by laying off workers, thereby resulting in unemployment. This increase in unemployment could be ameliorated in two ways. If the exchange rate for this region fell, the real wages of its workers would fall relative to real wages elsewhere, thereby encouraging firms to hire in this region and potentially restoring employment (though not income) to its initial level. Alternatively, if workers were mobile, those who were laid off could move to other regions and get jobs there. Accordingly, Mundell concluded that it would be unwise to fix the exchange rate between two regions (or countries) permanently unless they either shared the same industries (implying that they would tend to experience similar shocks simultaneously) or had substantial labor mobility between them.

Peter Kenen (1969) proposed a different criterion for determining whether two regions should fix their exchange rate permanently through monetary union: industrial diversification. He argued that if two areas both have a variety of industries, they might experience disparate demand or supply shocks but these would not cause severe unemployment because a shock to a particular industry would affect only a fraction of either region's workers. In a highly diversified region, those who were laid off could presumably switch to other industries within their own region, without the necessity of moving to the other region.¹⁰

Critics of European monetary union, such as Barry Eichengreen (1990), emphasize that the mobility of labor across national borders is low in Europe, particularly in comparison with the mobility of labor between different parts of the United States; they conclude that currency union in Europe is dubious. More sanguine observers, such as Kenneth A. Froot and Kenneth Rogoff (1991), point out that capital mobility, which is high in Europe, especially now that capital controls have been largely eliminated, may be a substitute for labor mobility; laid-off workers may not have to move to other regions to get jobs because capital equipment can move to them, generating new jobs in different industries. Froot and Rogoff also point out that European

countries satisfy Kenen's diversity criterion. For example, Europe's auto industry is not concentrated in a single center such as Detroit in the United States; instead, Europe has major auto producers in Germany, France, Italy, the United Kingdom, and Sweden. Charles R. Bean (1992) argues that Mundell's criterion is not applicable because it assumes nominal wage stickiness, but research indicates that real, not nominal, wages are sticky in Europe. He concludes that because real wages are sticky, exchange rate variability buys very little stabilization in the European context.

Much of the research on the desirability of European monetary union has attempted to measure the variability of economic shocks within Europe and to compare them with some alternative. Stephen S. Poloz (1990) studied real exchange rates (that is, exchange rates adjusted for price level changes), which can move around because of economic shocks even when the exchange rate itself is fixed by government action. Within a country, regional real exchange rates can move as well; when the price of oil soared around 1980, the resulting economic boom in oil-producing U.S. states raised prices in general in areas like Texas, thus lowering the real purchasing power of a dollar there relative to its value in other regions. Poloz found that regional real exchange rates within Canada were more variable than national real exchange rates in Europe. Considering that Canada has a single currency, he concluded that the Europeans could have monetary union also. However, Eichengreen (1990) has argued that Canada is a poor standard for comparison because its regions are so highly specialized in production. As an alternative, he calculated real exchange rate variability among various large regions of the United States, finding that variability within the country is substantially smaller than variability among countries in Europe. He concluded that Europe is a poorer candidate for monetary union than the various regions of the United States.

Tamin Bayoumi and Eichengreen (1992) measured the variability of shocks by estimating a vector autoregressive model (VAR) and then using a long-run restriction to identify the underlying shocks to aggregate demand and supply. In a VAR model, at a moment in time each included variable is a function of its own lagged values and the lagged values of all the other included variables, plus a random error or shock term.

Bayoumi and Eichengreen estimated a model with two variables, output growth and inflation. They assumed that movements in these two variables are induced by shocks to aggregate demand, caused, for example, by changes in monetary policy, or shocks to aggregate supply such as changes in production tech-

nology. A positive demand shock caused by an increase in the money supply would be expected to raise both output and inflation, though in the long run economic theory suggests that the effect on output would eventually fade away to zero. A positive supply shock caused by the development of computers that made factories more efficient would be expected to raise output but lower inflation. In recent years, sudden rises in the price of oil caused by OPEC decisions to limit oil exports have often been cited as negative supply shocks to industrialized countries that rely heavily on imported oil.

Using their model, Bayoumi and Eichengreen estimated the historical time series of aggregate demand and supply shocks in each country.¹¹ Taking Germany as the anchor country, they found substantial positive correlations between demand and supply shocks in core countries (France, the Netherlands, Denmark, and Belgium) and similar shocks in Germany. They concluded that monetary union makes much more sense for these core countries than for the entire EC, as envisaged by the Maastricht Treaty. Using similar techniques but different data, Joseph A. Whitt, Jr. (1993), concluded that even the core European countries may not be good candidates for monetary union with Germany because asymmetric demand shocks appear to be common.

Another consideration is the lack of cross-country fiscal transfer mechanisms in Europe. Xavier Sala-i-Martin and Jeffrey Sachs (1991) have argued that the United States has a successful monetary union in part because the federal government, through its tax system and various benefit programs, cushions to a considerable extent the impact of regional economic shocks. In their view, if Europe moves to monetary union without establishing such systems, regions experiencing negative shocks would face prolonged regional depressions because exchange rate changes would no longer be available to cushion the adjustment. Of course, there is little evidence that existing fiscal transfers within European countries have solved regional problems: the difficulties of southern Italy or the coal-mining areas of Britain come to mind.¹² Moreover, Bean (1992) has countered that because cross-border labor mobility is so limited in Europe, asymmetric shocks will simply result in substantial differences in real wages; after all, the Community exists now even though wages in Spain are just over half the level in Germany. In addition, Bean argued that the immobility of labor across borders ensures that national governments in Europe would have more freedom to have independent tax and fiscal policies after monetary union than is possible for state governments in the United States. For example, Italy could continue to choose to tax its prosperous northern re-

gions in order to finance aid to the depressed areas in southern Italy without inducing a massive migration of people and jobs from northern Italy into France.

While economic considerations were part of the story, other motivations may have been more important to policymakers. One possibility is that for some countries, notably France and Italy, monetary union was seen as a way of further enhancing anti-inflation credibility, thereby reducing interest rates and promoting economic growth. By the late 1980s, inflation rates in France and Italy had fallen fairly close to German levels; nevertheless, interest rates in both countries remained above German rates, at least in part because investors demanded a risk premium for holding French or Italian bonds, believing that at some time in the future, devaluation vis-à-vis the deutsche mark was possible. Monetary union would eliminate the possibility of a future devaluation, thereby eliminating this source of a risk premium in French and Italian interest rates.

Another possible motivation is the desire to reduce the power of the Bundesbank over monetary policy in other countries. As mentioned above, there is a widespread perception that Germany played the lead role in the EMS and that other members were forced to subordinate their monetary policy goals to the actions of the Bundesbank. With monetary union, monetary policy would be determined by the European Central Bank, which would have input from all members.

Whatever the motivation, in late 1991 the members of the EC announced that they had reached agreement on a timetable for European monetary unification. The agreement became known as the Maastricht Treaty, named for a city in the Netherlands where the final negotiations took place.

The Maastricht Treaty laid out a complex path to monetary union.¹³ The treaty contains various criteria that countries are supposed to meet in order to qualify for joining. The key criteria were intended to ensure that only countries with low inflation, at least some history of exchange rate stability, and manageable budgetary situations would be able to participate in the monetary union. In particular, a country's inflation rate is supposed to be at most 1.5 percentage points above the average of the three lowest inflation rates in the EC. Also, a country is supposed to keep its exchange rate within the narrow 2.25 percent EMS target band, with no devaluations or revaluations, for a period of at least two years prior to joining the union. With regard to the budget, a country's overall budget deficit must be no more than 3 percent of GDP, and the total stock of outstanding government debt must be no more than 60 percent of GDP.¹⁴

The rationale for having such criteria is to ensure that only countries whose macroeconomic policies are compatible with monetary union and a low-inflation future are able to join. The inflation criterion requires that high-inflation countries must take austerity measures and bring their inflation rates down before entering the union, not after. The exchange rate criterion ensures that a country must have successfully demonstrated a commitment to exchange rate stability for some time prior to monetary union. The budget deficit and government debt criteria reportedly reflect German concerns that if countries with large deficits or stocks of debt (such as Italy) enter the monetary union, they would inevitably be tempted to favor inflationary policies for the union as a whole as a way of reducing the real burden of their debts. Moreover, considering that national governments may be "too big to fail," the European Central Bank might find itself under irresistible pressure to inflate rather than allow a member government to default on its debt.¹⁵

At the time that the Maastricht Treaty was signed most EC members were in violation of one or more of the criteria. The treaty provides a timetable that gives such countries several years to alter their economic policies in order to attain compliance. In addition, it calls for a new institution, the European Monetary Institute, to be set up in 1994; it would administer the EMS and also help coordinate monetary policies in the various countries, but only in an advisory capacity.

By the end of 1996, according to the treaty, EC governments must assess whether a majority of them are in compliance with the various inflation and budget criteria and ready for monetary union; if so, the qualifying countries could carry out monetary union and the European Central Bank could take over monetary policy from their central banks as soon as policymakers chose.

If a majority is not ready in 1996, the treaty provides that those countries that meet the convergence criteria will nevertheless move ahead to full monetary union no later than January 1, 1999; their central banks will turn over monetary policy authority to the new European Central Bank. The other countries may join later, after they meet the convergence criteria.

Signs of Strain: The Lira and Sterling Crises of 1992

In the first few months after the Maastricht Treaty was announced, there was a widespread belief that the

road to monetary union would be smooth; interest rate differentials within Europe narrowed, and the EMS exchange rate bands seemed under little pressure. However, in June 1992 the financial markets were stunned when the people of Denmark, voting in a referendum that was part of the ratification process, rejected the treaty. Even though Denmark is one of the smaller members of the EC, its action had major consequences. The treaty had been written on the assumption that it would be ratified by all EC members; it was uncertain whether it could take effect legally if even one member rejected it. Once the Danish rejection heightened the possibility that monetary union might be delayed or derailed, the doubts that already existed about whether certain countries would proceed smoothly to monetary union were crystallized. The result was a currency crisis, as shaken investors pulled out of currencies that were perceived to have a risk of devaluation.

The British pound and especially the Italian lira faced the most pressure. Several factors made Italy vulnerable. One was its history of inflation and currency devaluation. During the last year before the crisis (1991), Italian consumer prices rose 6.4 percent, compared with 3.5 percent in Germany. During much of the 1980s, the differential was even wider, and as a result the lira was devalued relative to the deutsche mark during a number of the EMS realignments of the early and mid-1980s. Another factor was Italy's large budget deficit, which has been more than 10 percent of GDP in recent years, far above the Maastricht Treaty's limit of 3 percent. In addition, the currency crisis began at a time of political disarray: a national election had occurred a few weeks earlier and a caretaker government was in office while Italian politicians wrangled over the composition of a new governing coalition.

In the case of Britain, pressure on the pound was fueled by doubts that the British government would raise interest rates to defend the pound at a time when the British economy was just beginning to recover after two years of recession. With Germany raising interest rates to fight inflation, the British faced the dilemma of raising rates also or allowing the pound to drop out of the EMS, which Britain had joined less than two years before.

The crisis came to a head in September 1992, just prior to a French referendum on the Maastricht Treaty. With public opinion polls showing a significant possibility that French voters would reject the treaty, expectations of an imminent EMS realignment resulted in heavy pressure on the lira and the pound. On Septem-

ber 13 a limited realignment was indeed announced, with the lira being devalued by 7 percent. The following day the Bundesbank lowered its discount rate with the announced intention of easing the pressures on the EMS, but market participants regarded the cut as too little, too late; speculative pressures continued, requiring massive government intervention to maintain the EMS exchange rate bands. On September 16 Britain withdrew from the EMS and allowed the pound to fall; very soon afterward, the Italian lira dropped out as well, and the Spanish peseta was devalued 5 percent.

Meltdown: The French Franc in Crisis, 1993

A few days after Britain and Italy dropped out of the EMS, the French electorate voted in favor of the Maastricht Treaty, but the margin was so narrow that doubts about the treaty's eventual implementation remained. Moreover, the decline of the British pound and Italian lira worsened the competitive position of French industries, thereby boosting the pressure on the French government to devalue also. Nevertheless, for many months France maintained its pegged exchange rate largely by keeping French interest rates well above German ones most of the time. Chart 2 shows three-month interbank rates in France and Germany during 1992 and 1993. At times, the French also used heavy doses of intervention to keep the franc in its EMS target zone.

The franc came under especially severe pressure in the weeks leading up to the French national election in March 1993. Many market participants suspected that despite campaign promises to defend the franc, a newly elected government would renege and blame a quick devaluation on the previous government. Once the election was over, the incoming government restated its commitment to maintaining the franc, and for a few weeks pressure in the markets eased substantially. The Bank of France was able to lower interest rates sharply from their pre-election levels, until by June short-term French interest rates were slightly below rates in Germany.

In July, pressure on the EMS returned as market participants increasingly bet on the likelihood of some kind of increase in the value of the deutsche mark. By this time, Germany and much of the rest of the EC had fallen into a recession, but the Bundesbank remained concerned about Germany's continuing inflation. Most EMS members were clearly hoping for German interest

rates to fall rapidly, thereby allowing other members to cut interest rates as well and to stimulate their sluggish economies without forcing an EMS realignment, but the Bundesbank continued to cut rates slowly. The latest economic data from Germany indicated that its recession might be bottoming out, and money growth was above the Bundesbank's target range, bolstering the likelihood that the Bundesbank would not take major easing steps. At the same time, evidence of economic sluggishness was mounting in France, thus increasing the pressure for more stimulative policies there.

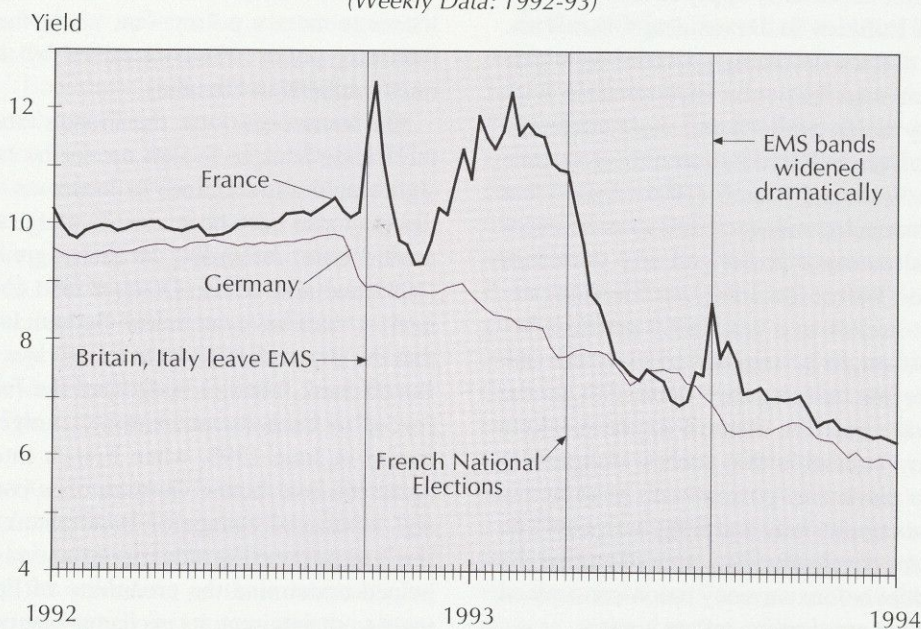
As pressure on the system mounted, France and other EMS members raised interest rates while carrying out massive intervention to try to preserve their parities with the deutsche mark. However, when the Bundesbank failed to cut rates at its meeting on July 28, reemphasizing its determination to keep German monetary policy focused on cutting German inflation and not on preserving the EMS, pressure on the official exchange rate bands became overwhelming.

The following weekend (July 31-August 1) the EMS was essentially suspended. Technically, no currency was devalued, but the allowable bands were widened dramatically, from plus or minus 2.25 percent before the change to plus or minus 15 percent afterward. By

not changing the central rates, governments could avoid the embarrassment of devaluations while still maintaining that the old exchange rates would be restored at some time in the future. One country, the Netherlands, chose to retain its narrow band vis-à-vis the deutsche mark; the Dutch currency has shadowed the deutsche mark for a number of years and was never under much pressure during the crisis.

According to the *Economist* (August 7, 1993), the Europeans considered several other options before settling on the 15 percent bands. Spain suggested abolishing the bands altogether but got little support. Germany initially suggested a smaller widening of the bands, to 6 percent; this option had ample precedent because Italy (for over a decade) and Britain (for two years) had had 6 percent bands. However, France rejected the German proposal, fearing it would be too vulnerable to market pressures. The French proposed allowing the deutsche mark to float while all the other currencies maintained the narrow bands. Because of the large size of the French economy, this proposal would have made the French franc the dominant currency in a shrunken EMS, but it was rejected by Belgium and the Netherlands, which insisted on retaining links to the deutsche mark.

Chart 2
Interest Rates in France and Germany
 (Weekly Data: 1992-93)



Source: Three-Month Interbank Rate, Board of Governors of the Federal Reserve System.

In the days following the widening of the target bands, the French franc and the other currencies with wider bands dropped versus the deutsche mark, but only modestly; as shown in Chart 3, the French franc, Belgian franc, and Danish Kroner all remained for the most part less than 5 percent below their previous lower limit, and well above their new lower limits. All three countries remained cautious about lowering their interest rates, despite sluggish economic conditions, in order to avoid a sharper decline of their currencies. By contrast, when the British pound and Italian lira suspended participation in the EMS entirely in 1992, those currencies quickly dropped more than 10 percent below their previous lower limits. As of this writing, the widened target bands have not yet been challenged seriously by market participants; all of the currencies that have the wider bands have not only remained above their new lower limits but in many cases moved back inside their previous narrow target bands.

Alternative Explanations of Strain in the EMS

The turmoil that struck the EMS during 1992 and 1993 has several alternative explanations: incompatible policies in the devaluing countries, self-fulfilling speculative attacks, and German unification. Moreover, given the number of countries involved, the same explanation does not necessarily apply to all.

Incompatible Policies in Devaluing Countries. One possibility is that the devaluing countries were pursuing policies that were basically incompatible with eventual monetary union without any more exchange rate realignments. Even before the turmoil began, some observers such as Froot and Rogoff (1991) argued that the strategy of announcing monetary union as an eventual goal while allowing a prolonged and uncertain preparation period before deciding on the final exchange rates was subject to a credibility problem because governments might be tempted to carry out one last realignment before unifying their currencies. In the absence of capital controls, turmoil in the markets would feed on any indication that such a realignment was imminent. In particular, governments with heavy debt burdens (for example, Italy and Belgium) would be likely candidates for devaluation as a way of cutting the real value of the debt before currency union constrained the ability of such governments to inflate it away.

The departure of Italy and Britain from the EMS in 1992 is consistent with Froot and Rogoff's analysis:

Italy's record of inflation, its large continuing fiscal deficit, and its current account deficit made it an obvious candidate for devaluation. In the case of Great Britain, the severity of its recession (possibly reflecting its entry into the EMS at an unrealistically high real exchange rate) and the recentness of its entry into the EMS probably weakened the credibility of its commitment to remaining in the system. France is another story, however.

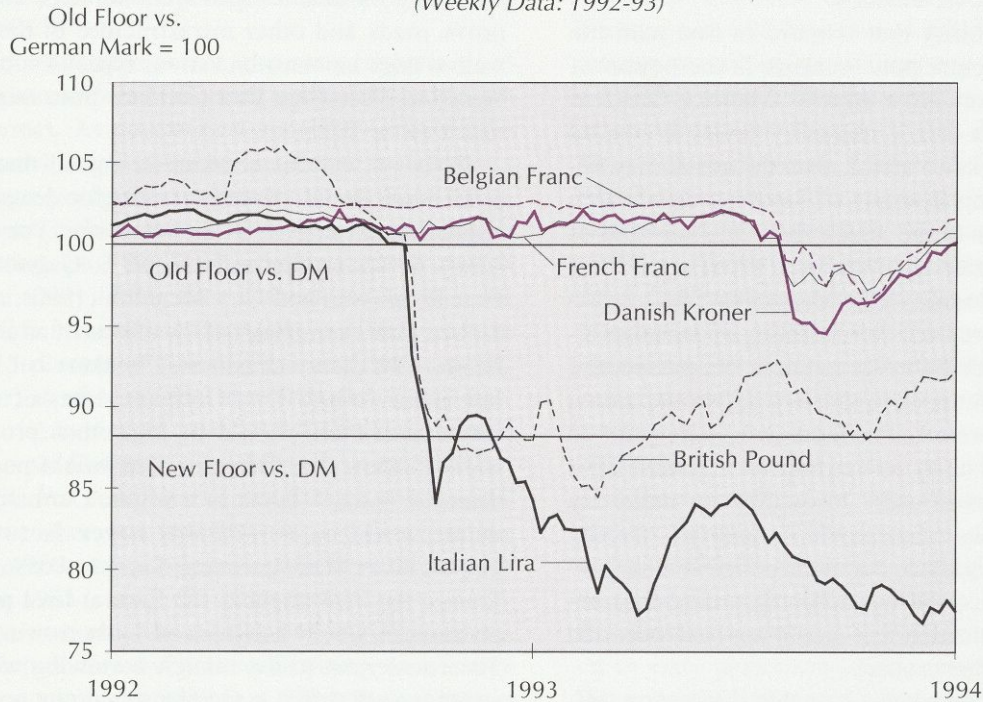
When the crisis began, the French currency's parity with the deutsche mark had been maintained successfully for some years, since the realignment of early 1987. The French inflation rate was lower than Germany's, and its current account was in surplus. The French budget was in fairly good shape; indeed, in 1992 France was the only major EMS member that was in compliance with both fiscal policy criteria set out in the Maastricht Treaty (Willem Buiter, Giancarlo Corsetti, and Nouriel Roubini 1993, 64). Competitiveness of French industry, as measured by unit labor costs relative to Germany's, showed no signs of a problem for France (see Eichengreen and Wyplosz 1993, 73). Despite these favorable macroeconomic indicators, the franc came under severe pressure in 1992 and 1993, requiring massive intervention, ultimately to no avail.¹⁶

The main factor that seemed to be weighing on the French currency was the economic slowdown and the accompanying rise in unemployment, which was generating political pressure for doing something to stimulate the economy. The most common prescription was looser monetary policy, but, given the EMS, French monetary policy was constrained by the high interest rates available in Germany.

On many occasions, the French (and others) urged the Bundesbank to loosen up, in the hope that such a shift would allow France to loosen as well. Other tactics may also have been used to nudge the Bundesbank toward ease. According to Eichengreen and Wyplosz (1993, footnote 35), in October 1991 French short-term interest rates were cut below German levels in the hope that the Bundesbank would lower rates as well, but the Bundesbank failed to budge and the French were soon forced to back down. Another nudge may have occurred in June 1993, when French interest rates were again lowered below German ones but failed to elicit any substantial change of Bundesbank policy. Instead, the temporary French monetary easing may have helped undermine the credibility of France's commitment to maintaining its exchange rate peg.

Denmark is another difficult case. Although Danish voters initially rejected the Maastricht Treaty, thereby

Chart 3
Key EMS Exchange Rates
(Weekly Data: 1992-93)



Source: Computed by the Federal Reserve Bank of Atlanta from Board of Governors of the Federal Reserve System data.

precipitating the EMS crisis in 1992, they later approved a slightly modified version. In any event, their rejection appears to have reflected a protest against various trends in the EC, not specific opposition to currency union.¹⁷ Economic indicators showed little sign that the Danish exchange rate was out of line. Danish unit labor costs were little changed from 1987 to 1992 relative to a multilateral index of its trading partners, and relative to Germany its unit labor costs were actually falling during the two years prior to the crisis (Eichengreen and Wyplosz 1993, 72). In terms of fiscal policy, the budget deficit was well below the Maastricht limit, and the level of debt was only modestly above its guideline (Buiter, Corsetti, and Roubini 1993, 64). The current account was solidly in surplus.

Another reason to doubt that French and Danish policies were incompatible with monetary union is provided by the behavior of their currencies in the months following the widening of their fluctuation bands. As shown in Chart 3, just a few months after the widening these two currencies floated back above their old lower limits. By contrast, as of the end of

1993 the British and Italian currencies were still well below their old lower limits.

Self-Fulfilling Speculative Attacks. If economic fundamentals in France and Denmark do not explain why their currencies were under pressure, what does? Policymakers in France have decried “Anglo-Saxon speculators,” who supposedly bet against the franc and forced its downfall. Leaving aside the nationality of the speculators, there are various economic models of speculative attacks. Paul Krugman (1979) and Robert P. Flood and Peter M. Garber (1984) showed that if government policies and economic fundamentals are inconsistent with maintaining an exchange rate peg in the long run, severe pressure on the peg can develop even when a government still has substantial foreign exchange reserves. The basic idea is that rather than waiting for the government’s reserves to run out through a gradual process of current account deficits, speculators will attack the currency through massive capital outflows as soon as the amount of resources at their command is large enough (relative to the governments’ reserve holdings) to give them the ability to force a devaluation. These models may help

explain the British and Italian cases, but, as discussed earlier, France and Denmark had current account surpluses, and their other economic fundamentals did not seem to necessitate devaluation.

Another possibility that is more in line with the complaints of French policymakers is the notion of self-fulfilling speculative attacks. Maurice Obstfeld (1986) has shown that if monetary policy is altered following a speculative attack, then the attack may become self-fulfilling in terms of inducing devaluation even though prior to the attack there was no need to devalue. Eichengreen and Wyplosz (1993) argued that the convergence criteria in the Maastricht Treaty created the preconditions for self-fulfilling speculative attacks. In particular, the treaty requires that prospective members of the European monetary union maintain a stable exchange rate for at least two years prior to joining. For a country struggling to maintain tight monetary policies in order to qualify for monetary union, a speculative attack would disqualify it, thereby eliminating the rationale for tight policies. The government would respond by loosening policy, thus necessitating a devaluation that would not have occurred without the speculative attack.

A weakness of the explanation that is based on self-fulfilling speculative attacks is the failure of the EMS to break apart sooner, especially as capital controls were phased out in the late 1980s. In the case of France, interest rate differentials show that the markets perceived a substantial risk of devaluation throughout the late 1980s. According to Francesco Caramazza (1993), the nominal interest differential on twelve-month Eurofranc and Euromark deposits was over 4 percent throughout 1987, fell sharply but remained above 2 percent in 1988, and remained above 1 percent until late 1990. Nevertheless, there was only one EMS realignment in these four years—a modest revaluation of the German mark, Dutch guilder, and Belgian franc in January 1987. Moreover, as Rudiger Dornbusch (1993, 133) has argued, contrary to Obstfeld's theoretical scenario Italy's government did not loosen policy sharply after withdrawing from the EMS. In fact, it took more steps toward satisfying the Maastricht criteria after withdrawing than before. Nevertheless, Italy's currency still dropped immediately after withdrawing, and as of December 1993 it remained well outside its old target band (see Chart 3).

Fallout from German Unification. There is one other explanation of the crisis of the EMS: the economic shocks resulting from German unification. Almost overnight, West Germany expanded its territory by about one-third and its population by one-quarter.

By (West) German standards, the capital stock, infrastructure, and productivity level in the newly incorporated area were very low. Almost immediately, the German government began spending large sums to improve roads and other infrastructure in the East, as well as large amounts on various types of subsidies designed to discourage East Germans from migrating en masse to the West.

Early on, various economists argued that German unification would create pressures for deutsche mark appreciation, at least in the short run. For example, Lewis S. Alexander and Joseph E. Gagnon (1990), Paul R. Masson and Guy Meredith (1990), and Horst Siebert (1991) emphasized the effects of an investment boom; with plenty of educated workers but little capital in the former East Germany, rates of return on investment there should be high, thus prompting a capital inflow into Germany that would push up the deutsche mark.¹⁸ Taken as a whole, Germany's future output would be considerably larger than its current output; rather than squeezing domestic consumption to finance the investment in the East, at least part of the investment would be financed by borrowing abroad. The counterpart to the foreign borrowing would be a swing toward deficit in Germany's current account.

Begg and others (1990) emphasize the competitive advantages that West Germany has, being a traditional exporter of capital goods located on the doorstep of Eastern Europe (and with special ties to the former East Germany to boot). Given these advantages, a disproportionate share of the new investment spending in the East should fall on West German goods rather than, for example, French or American products. Accordingly, demand for deutsche marks to pay for these goods would rise relative to demand for other currencies, implying upward pressure on the deutsche mark in foreign exchange markets.

An alternative and complementary interpretation focuses on the consequences for the deutsche mark of the major shift toward fiscal ease that occurred in Germany at the time of unification. Warwick J. McKibbin (1990) has provided simulations showing that without a realignment other EMS members would have to tighten monetary policy considerably and endure an economic slowdown; the slowdown would be moderated considerably if the other EMS members allowed their currencies to depreciate versus the deutsche mark. More recently, William H. Branson (1993) argued that the fiscal expansion put upward pressure on German interest rates, which in turn raised the equilibrium value of the deutsche mark. For a time the lack of an EMS realignment held the deutsche mark below its

new equilibrium, but the shock was so large that eventually the EMS came apart. In his view, the same mechanism explains the rise of the U.S. dollar following the shift to fiscal ease in the United States in the early 1980s.¹⁹

To a considerable extent, the early projections of the economic impact of German unification turned out to be correct. As government spending in East Germany soared, the German budget deficit ballooned as well. Aggregating the various levels of the German government, including the state-owned postal and railway systems, plus the Treuhandanstalt agency, which took over many failing East German enterprises, the overall deficit increased from approximately zero in 1989 to 5 percent of (West) German GDP in 1992. Moreover, as of May 1993 the 1993 deficit was projected to rise to about 6 percent of GDP (Organisation for Economic Cooperation and Development [OECD] 1993, 76). For comparison, the general government deficit rose somewhat less in the United States during the early 1980s, from 1 percent of GDP in 1980 to 3.4 percent in 1985 (see OECD 1992, 214).

The current account also moved dramatically toward deficit. In terms of dollars, Germany went from a \$58 billion surplus in 1989 to a \$26 billion deficit in 1992. The total swing was \$84 billion, about half as large as the \$161 billion swing in the U.S. current account from 1980 to 1987. Measured as a fraction of each nation's GDP, the German swing was actually larger than in the U.S. case: the German current account moved from a surplus of 4.9 percent in 1989 to a deficit of 1.4 percent in 1992; for the United States, the current account deficit was approximately zero in 1980 but peaked at 3.6 percent of GDP in 1987.

Such large changes in German macroeconomic conditions could have been expected to put pressure on exchange rates. In the case of the United States in the 1980s, the value of the dollar rose sharply—about 50 percent—between 1980 and 1985, falling to roughly its initial level over the next several years.²⁰ In the German case, by contrast, the impact on exchange rates was constrained for several years by the refusal of European governments to realign the EMS parities. The deutsche mark was able to rise somewhat versus outside currencies, dragging the other EMS members along. For example, in the first quarter of 1992 (just prior to the onset of the EMS crisis) the deutsche mark was up about 14 percent versus the U.S. dollar from its 1989 average. On a trade-weighted basis, however, the deutsche mark was up less than 5 percent.²¹

Writing after the initial crisis that focused on Britain and Italy but before the events of the summer of 1993,

Branson (1993), Dornbusch (1993), and Richard Portes (1993) all focused on Germany, especially its shift in fiscal policy, as the prime source of strain in the EMS. The main caveat in the story, as noted by Eichengreen and Wyplosz (1993), is the question of timing: the unification of Germany and the shift in fiscal policy were well under way in 1990, and yet the crisis did not develop until 1992. Exchange markets, like stock markets, are forward-looking and react immediately to news, but in this case the reaction seemed to be delayed for more than two years.²²

There may be various explanations for the apparent delay. The main one is that the full extent of the shift in German policy and the current account did not become clear overnight. For example, an OECD *Economic Survey* released in June 1991 showed that the German government was planning for the federal deficit to peak at 70 billion DM in 1991, falling to 41 billion in 1993 and 31 billion in 1994 (1991, 71). However, since then the outlook has dimmed considerably. A recent report by a major German bank projects federal deficits of 68 billion DM for both 1993 and 1994. The turnaround in the current account was also much larger than suggested in early projections. For example, Alexander and Gagnon (April 1990) projected a \$15 billion worsening in the current account for 1992, with the largest decline being \$29 billion in 1998. The actual decline has been much larger. As noted earlier, in 1992 the current account was down \$84 billion from its 1989 level.

Another factor may have been uncertainty arising from the Iraqi invasion of Kuwait and the ongoing turmoil in the Soviet Union, which culminated in the fall of Mikhail Gorbachev, his replacement by Boris Yeltsin, and the move to independence by the non-Russian republics in late 1991. During this period, substantial numbers of Soviet troops were still at bases in the former East Germany, and a reversal of the Soviet policy of withdrawing from Germany (had it occurred) would have had major political and economic consequences for Germany. Accordingly, market participants may have hesitated to bet too heavily on the deutsche mark during 1990 and 1991.

Conclusions and Implications for the Future of European Monetary Union

What does the recent EMS crisis tell us about the feasibility of pegging exchange rates when capital flows are unrestricted? If self-fulfilling speculative attacks were the source of the crisis, then some sort of

restriction on capital flow seems necessary for exchange rates to be pegged.²³ However, in this author's view the evidence points to the shocks resulting from German unification as the main source of strain, with speculative attacks playing a supporting role. Incompatible policies in Britain and Italy also contributed, making an eventual realignment almost inevitable. The fairly smooth operation of the EMS during the late 1980s, even after most restrictions on capital flows were lifted, suggests that in the absence of major asymmetric shocks such as German unification, exchange rates can be pegged, at least for some time.

In the longer run, of course, pegged exchange rates break down if there is not a considerable degree of economic convergence, especially on inflation rates. Even when the EMS appeared to be working smoothly, its long-run stability was questionable because Italy, for example, had an inflation rate significantly higher than most other members. Accordingly, the implicit decision after 1987 to rule out all realignments when economic convergence had not yet been achieved was misguided.

As for the future, if shocks on the scale of German unification are unlikely in the next few years, then perhaps the Maastricht Treaty's goal of monetary union by the end of the decade is still attainable. Absent a huge expansion of the community's aid programs for poorer regions and countries or an unlikely increase in labor mobility, areas that suffer adverse economic shocks will need some flexibility of real wages to avoid prolonged recessions. Moreover, the recent crisis highlights the difference between pegged exchange rates and a true common currency. No matter what promises governments may make, as long as different currencies are in circulation, there is a possibility that economic or political shocks may result in exchange rate changes. By contrast, if a true common currency is in use, exchange rates can be changed only by introducing new currencies, a much more complex and disruptive undertaking.²⁴ Accordingly, monetary union should involve replacing national currencies with a single European currency, not merely announcing that exchange rates within Europe will be pegged permanently with no fluctuations allowed, as some have suggested.

In recent months, the ratification process for the Maastricht Treaty has been completed; accordingly, as a legal matter those members of the EC that meet the convergence criteria are committed to going ahead with monetary union no later than January 1, 1999. Nevertheless, an enormous amount of uncertainty continues regarding the timing of monetary union and about the identities of the participating countries. To shrink the lengthy period of uncertainty that invites turmoil in the foreign exchange markets, it would be desirable for those countries that meet the convergence criteria to move ahead to monetary union earlier. The treaty itself allows for an earlier union but only if a majority of members are ready by the end of 1996. Because this condition appears unlikely to be met, the treaty itself is an obstacle to earlier union. Moreover, the period of uncertainty might continue into the next century because it is possible that none of the EC members will satisfy all the treaty's criteria for union by the deadline of January 1, 1999.

Most likely, monetary union could occur late in this decade, but with a number of members left out—probably Britain, Italy, Greece, and Portugal, and possibly Spain, Belgium, and Ireland. With so many countries not included, particularly Britain and Italy, and Germany expanded by its unification with the East, the new monetary union would probably be even more dominated by Germany than the EMS. France in particular may be unwilling to subordinate its monetary policy to Germany's in such a limited union; however, it may nevertheless go ahead in the belief that being in the union and having some representation on the board that determines monetary policy for Germany and the rest of the union is better than being on the outside, with no representation (see Portes 1993).

In short, the transition from the EMS to European monetary union is proving to be far more difficult than politicians realized when they signed the Maastricht Treaty in late 1991. Additional turmoil is likely at least as long as it remains uncertain which countries will end up unifying their currencies, and at what exchange rates.

Notes

1. The experience of the French economy in the early 1980s is reviewed in Sachs and Wyplosz (1986) and Muet and Fonteneau (1990).

2. Gardner and Perraudin (1993) perform a VAR analysis of daily interest rates from October 1987 to August 1992, thus covering pre- and post-German unification periods. Split-

ting their sample into various subperiods, they find that French interest rate innovations usually have a significant effect on German rates, though it is smaller than the German effect on French rates. The exception is 1990, the year just after the Berlin Wall fell, when France was predominant.

3. Some of the smaller countries were allowed to retain capital controls somewhat longer: Spain and Ireland had a deadline for abolition at the end of 1992, and Portugal and Greece could retain controls until 1995.
4. Technically, the United Kingdom had been a member of the EMS since its founding; it deposited part of its reserves in the European Monetary Cooperation fund in exchange for ECUs, and sterling was a component of the basket of currencies defining the ECU. However, the United Kingdom did not officially join the system of exchange rate bands until October 8, 1990, and even then it chose to have wide 6 percent bands like those of Italy during the system's first decade (see Ungerer and others 1990, 4).
5. Spain joined the EMS on June 19, 1989, with a 6 percent exchange rate band like Italy's (see Ungerer and others 1990, 94).
6. For a contrary view on the need for a deutsche mark revaluation, see Gros and Thygesen (1992, 192-96).
7. The existing EMS had already constrained the ability of most central banks, except perhaps the German Bundesbank, to conduct independent monetary policy, but monetary union would completely eliminate independent monetary policies.
8. For a review of the literature on exchange rate variability and international trade, see Kumar and Whitt (1992).
9. A less sanguine appraisal of coordinated policymaking is provided by Rogoff (1985), who argued essentially that if policy is set cooperatively, governments have weaker incentives to avoid inflation; the private sector reacts by anticipating higher inflation, with negative consequences for social welfare. The literature on international policy coordination is reviewed in Espinosa and Yip (1993).
10. McKinnon (1963) has proposed a third criterion: openness. In his view, countries that trade heavily with one another are good candidates for monetary union because exchange rate changes are more disruptive than would be the case if their trade was on a small scale. By this criterion, the members of the EC are good candidates for monetary union.
11. Blanchard and Quah (1989) showed that by using a long-run restriction—namely, that demand shocks have zero long-term impact on real variables such as output or unemployment—it is possible to decompose the estimated shocks from the VAR into the underlying demand and supply shocks.
12. De Grauwe and Vanhaverbeke (1991) have provided statistical evidence that labor mobility between regions of the same EC country is much lower in Spain and Italy than in northern European countries such as France, Germany, and the United Kingdom.
13. Key provisions of the Maastricht Treaty are discussed in Bean (1992) and Kenen (1992).
14. Another criterion requires that the interest rate on a country's long-term government debt must not be more than 2 percentage points above the average long-term interest rate in the three countries having the lowest inflation rates in the EC. Presumably a country with some combination of current or expected inflation and budgetary or other circumstances that generated a large risk premium on its long-term government debt would violate this criterion.
15. The phrase "too big to fail" originated in discussions of the U.S. banking system; it is sometimes argued that certain banks are so large that their failure would inevitably destabilize the entire banking system, thereby making regulators unwilling to close them even when by normal criteria such action would be in order. Some observers think that a European Central Bank would face similar pressures if one of its member governments had difficulty paying its debt.
16. Mussa and Isard (1993, 147) also stated that macroeconomic developments did not indicate a need for devaluation by France, or by Denmark, yet both currencies (as well as others) came under attack in 1992 and again in 1993.
17. According to the *New York Times* (June 3, 1992, 3), opposition to the treaty centered on fears that Denmark would be dominated by Germany and a French-speaking bureaucracy in Brussels. In addition to its provisions on monetary union, the Maastricht Treaty calls for movement toward common foreign and national security policies for all members, as well as greater commonality of policies on minimum wages, working hours, and the like.
18. For example, Alexander and Gagnon (1990) estimated in their principal simulation that German unification would cause the deutsche mark to appreciate immediately by 7.8 percent versus the U.S. dollar. As the East German capital stock expanded, the deutsche mark would fall back, but it would still be above its initial level at the turn of the century.
19. In the long run the effect is quite different: to service the foreign debt accumulated during the period of fiscal ease, the currency must eventually fall below its initial level to generate the increase in net exports required for current-account balance. Similarly, the simulation in Masson and Meredith (1990) shows the real effective exchange rate of the deutsche mark falling below its initial level around the turn of the century. Using a different model, Wyplosz (1991) also found that the deutsche mark would depreciate in the long run, but his results were ambiguous in the short run.
20. As measured by the nominal effective exchange rate in the IMF's *International Financial Statistics*.
21. On a real or inflation-adjusted basis, the IMF calculates a somewhat larger but still limited rise of 8.5 percent from 1989 to the first quarter of 1992.
22. Eichengreen and Wyplosz (1993, 54) also argued that by "the time the crisis erupted, most EMS countries had successfully carried out the changes in relative prices and costs required to maintain their EMS parities."

In this author's view, this conclusion is questionable. Focusing on France, their Figure 7 suggests that relative to Germany, France's unit labor costs fell 2 to 4 percent from the announcement of German unification (sometime late in 1989 or early in 1990) to early 1992, just prior to the onset of the exchange crisis. The decline in French labor costs was a move in the right direction, but if German unification was an economic shock comparable in size to the shifts of

- the early 1980s, then a much larger decline may have been needed. For comparison, between 1980 and 1985 German unit labor costs fell 40 percent vis-à-vis the United States; see U.S. Department of Labor (1993, Table 10).
23. Eichengreen and Wyplosz (1993, 120-22) advocate a so-called Tobin tax on transactions in foreign exchange to dis-

courage speculative capital flows that in their view make pegged exchange rates untenable.

24. An example of creating new currencies has occurred recently in parts of the former Soviet Union, where various newly independent republics are ceasing to use the ruble.

References

- Alexander, Lewis S., and Joseph E. Gagnon. "The Global Economic Implications of German Unification." Board of Governors of the Federal Reserve System, International Finance Discussion Paper No. 379, April 1990.
- Artus, P., S. Avouyi-Dovi, E. Bleuze, and F. Lecointe. "Transmission of U.S. Monetary Policy to Europe and Asymmetry in the European Monetary System." *European Economic Review* 35 (1991): 1369-84.
- Bayoumi, Tamin, and Barry Eichengreen. "Shocking Aspects of European Monetary Unification." National Bureau of Economic Research Working Paper No. 3949, January 1992.
- Bean, Charles R. "Economic and Monetary Union in Europe." *Journal of Economic Perspectives* 6 (Fall 1992): 31-52.
- Begg, David, Jean-Pierre Danthine, Francesco Giavazzi, and Charles Wyplosz. "The East, the Deutschmark and EMU." In *Monitoring Economic Integration: The Impact of Eastern Europe*, 31-76. London: Centre for Economic Policy Research, 1990.
- Blanchard, Olivier Jean, and Danny Quah. "The Dynamic Effects of Aggregate Demand and Supply Disturbances." *American Economic Review* 79 (1989): 655-73.
- Branson, William H. "Comment." *Brookings Papers on Economic Activity*, no. 1 (1993): 125-29.
- Buiter, Willem, Giancarlo Corsetti, and Nouriel Roubini. "Excessive Deficits: Sense and Nonsense in the Treaty of Maastricht." *Economic Policy*, no. 16 (April 1993): 57-100.
- Caramazza, Francesco. "French-German Interest Rate Differentials and Time-Varying Realignment Risk." *IMF Staff Papers* 40 (September 1993): 567-83.
- Cohen, Daniel, and Charles Wyplosz. "The European Monetary Union: An Agnostic Evaluation." In *Macroeconomic Policies in an Interdependent World*, edited by Ralph C. Bryant, David A. Currie, Jacob A. Frenkel, Paul R. Masson, and Richard Portes, 311-42. Washington: International Monetary Fund, 1989.
- De Grauwe, Paul, and Wim Vanhaverbeke. "Is Europe an Optimum Currency Area? Evidence from Regional Data." Centre for Economic Policy Research (London), Discussion Paper No. 555, May 1991.
- Dornbusch, Rudiger. "Comment." *Brookings Papers on Economic Activity*, no. 1 (1993): 130-36.
- Eichengreen, Barry. "Is Europe an Optimum Currency Area?" University of California at Berkeley Working Paper No. 90-151, October 1990.
- Eichengreen, Barry, and Charles Wyplosz. "The Unstable EMS." *Brookings Papers on Economic Activity*, no. 1 (1993): 51-143.
- Espinosa, Marco, and Chong K. Yip. "International Policy Coordination: Can We Have Our Cake and Eat It Too?" Federal Reserve Bank of Atlanta *Economic Review* 78 (May/June 1993): 1-12.
- European Commission. "One Market, One Money: An Evaluation of the Potential Benefits and Costs of Forming an Economic and Monetary Union." *European Economy* 44 (1990).
- Flood, Robert P., and Peter M. Garber. "Collapsing Exchange-Rate Regimes: Some Linear Examples." *Journal of International Economics* 17 (1984): 1-13.
- Froot, Kenneth A., and Kenneth Rogoff. "The EMS, the EMU, and the Transition to a Common Currency." National Bureau of Economic Research Working Paper No. 3684, April 1991.
- Gardner, Edward, and William Perraudin. "Asymmetry in the ERM: A Case Study of French and German Interest Rates before and after German Unification." *IMF Staff Papers* 40 (June 1993): 427-50.
- Giavazzi, Francesco, and Alberto Giovannini. "Models of the EMS: Is Europe a Greater Deutschmark Area?" In *Global Macroeconomics: Policy Conflict and Cooperation*, edited by Ralph C. Bryant and Richard Portes, 237-72. New York: St. Martin's Press, 1987.
- Giavazzi, Francesco, and Marco Pagano. "The Advantage of Tying One's Hands: EMS Discipline and Central Bank Credibility." *European Economic Review* 32 (1988): 1055-82.
- Gros, Daniel, and Niels Thygesen. *European Monetary Integration*. New York: St. Martin's Press, 1992.
- Hamada, Koichi. "A Strategic Analysis of Monetary Interdependence." *Journal of Political Economy* 84 (1976): 677-700.
- Herz, Bernhard, and Werner Röger. "The EMS Is a Greater Deutschmark Area." *European Economic Review* 36 (1992): 1413-25.
- Kenen, Peter. "The Theory of Optimum Currency Areas: An Eclectic View." In *Monetary Problems of the International Economy*, edited by Robert A. Mundell and Alexander K. Swoboda. Chicago: University of Chicago Press, 1969.
- Kenen, Peter B. *EMU after Maastricht*. Washington: Group of Thirty, 1992.

- Krugman, Paul. "A Model of Balance-of-Payments Crises." *Journal of Money, Credit, and Banking* 11 (August 1979): 311-25.
- Kumar, Vikram, and Joseph A. Whitt, Jr. "Exchange Rate Variability and International Trade." Federal Reserve Bank of Atlanta *Economic Review* 77 (May/June 1992): 17-32.
- Masson, Paul R., and Guy Meredith. "Domestic and International Macroeconomic Consequences of German Unification." In *German Unification, Economic Issues*, edited by Leslie Lipschitz and Donough McDonald, 93-114. Washington: International Monetary Fund Occasional Paper No. 75, 1990.
- Mastropasqua, Cristina, Stefano Micossi, and Roberto Rinaldi. "Interventions, Sterilization and Monetary Policy in European Monetary System Countries, 1979-87." In *The European Monetary System*, edited by Francesco Giavazzi, Stefano Micossi, and Marcus Miller, 252-91. Cambridge: Cambridge University Press, 1988.
- McKibbin, Warwick J. "Some Global Macroeconomic Implications of German Unification." Brookings Discussion Papers in International Economics No. 81, May 1990.
- McKinnon, Ronald I. "Optimum Currency Areas." *American Economic Review* 53 (1963): 717-24.
- Muet, Pierre-Alain, and Alain Fonteneau. *Reflation and Austerity: Economic Policy under Mitterand*. New York: Berg Publishers Ltd., 1990.
- Mundell, Robert. "A Theory of Optimum Currency Areas." *American Economic Review* 51 (November 1961): 509-17.
- Mussa, Michael, and Peter Isard. "A Note on Macroeconomic Causes of Recent Exchange Market Turbulence." Annex V in the Group of Ten, *International Capital Movements and Foreign Exchange Markets*. Rome, April 1993: 139-72.
- Obstfeld, Maurice. "Rational and Self-Fulfilling Balance-of-Payments Crises." *American Economic Review* 76 (March 1986): 72-81.
- Organisation for Economic Cooperation and Development. *OECD Economic Surveys: Germany*. Paris: OECD, 1991.
- _____. *OECD Economic Outlook, No. 52*. Paris: OECD, December 1992.
- _____. *OECD Economic Surveys, 1992-93: Germany*. Paris: OECD, 1993.
- Poloz, Stephen S. "Real Exchange Rate Adjustment between Regions in a Common Currency Area." Mimeo, Bank of Canada, 1990.
- Portes, Richard. "EMS and EMU after the Fall." *The World Economy* 16 (1993): 1-16.
- Rogoff, Kenneth. "Can International Monetary Policy Cooperation Be Counterproductive?" *Journal of International Economics* 18 (1985): 199-217.
- Russo, Massimo, and Giuseppe Tullio. "Monetary Coordination within the European Monetary System: Is There a Rule?" Part II in *Policy Coordination in the European Monetary System*, Occasional Paper No. 61. Washington: International Monetary Fund, September 1988.
- Sachs, Jeffrey, and Charles Wyplosz. "The Economic Consequences of President Mitterand." *Economic Policy*, no. 2 (April 1986): 262-322.
- Sala-i-Martin, Xavier, and Jeffrey Sachs. "Fiscal Federalism and Optimum Currency Areas: Evidence for Europe from the United States." Yale University, Economic Growth Center Discussion Paper No. 638, August 1991.
- Siebert, Horst. "German Unification: The Economics of Transition." *Economic Policy*, no. 13 (October 1991): 288-340.
- Ungerer, Horst, Jouko Hauvonen, Augusto Lopez-Claros, and Thomas Mayer. *The European Monetary System: Developments and Perspectives*. Washington: International Monetary Fund Occasional Paper No. 73, November 1990.
- U.S. Department of Labor. Bureau of Labor Statistics. "International Comparisons of Manufacturing Productivity and Unit Labor Cost Trends, 1992." Publication 93-348. Washington, August 1993.
- van Ypersele, Jacques. "Operating Principles and Procedures of the European Monetary System." In *The European Monetary System: Its Promise and Prospects*, edited by Philip H. Trezise, 5-24. Washington: The Brookings Institution, 1979.
- von Hagen, Jürgen, and Michele Fratianni. "German Dominance in the EMS: Evidence from Interest Rates." *Journal of International Money and Finance* 9 (1990): 358-75.
- Whitt, Joseph A., Jr. "European Monetary Union: Evidence from Structural VAR's." Mimeo, Federal Reserve Bank of Atlanta, May 1993.
- Wyplosz, Charles. "Asymmetry in the EMS: Intentional or Systemic?" *European Economic Review* 33 (1989): 310-20.
- _____. "On the Real Exchange Rate Effect of German Unification." *Weltwirtschaftliches Archiv* 127 (1991): 1-17.

Review Essay

Selected Finance and Trade Reference Books on Latin America: An Update

Jerry J. Donovan

The reviewer is the research librarian in the Atlanta Fed's research library. He is grateful to a number of people who assisted in making available and evaluating the publications reviewed in this article.

Particularly helpful were Marian P. Francois, Information Specialist, the Overseas Private Investment Corporation (OPIC) Library, Washington, D.C.; the staff of the Joint World Bank-International Monetary Fund Library, Washington, D.C.; as well as Joe Whitt, Roberto Chang, and Michael Chriszt of the Atlanta Fed's research department.

Following years of debt crisis and economic stagnation, much of Latin America has recently achieved political stability, privatization, and other economic progress, including the amelioration of inflation. Such successes have moved U.S. investors and others engaged in import/export trade to take advantage of the area's rapid growth over the past few years. U.S. Commerce Department aggregate data on U.S. exports to Latin America point up this burgeoning economic activity. Data on selected principal Latin American trading partners during the 1988-93 period illustrate the point vividly: hefty gains for U.S. exports are clear in the aggregate and by country for the five-year period (see Table 1).

This essay is devoted to reference books that are about, or include, information on foreign investment and trade with Latin American countries. It updates earlier reviews of reference titles devoted to or including Latin American investment and trade information appearing in four previous articles in the *Economic Review*. The first article in the series in particular referred to numerous worldwide directories and compendia including sections on Latin America and Latin American countries.¹

The current discussion focuses upon seven additional reference publications, two of which are new. One title, the *Statistical Abstract of Latin America (SALA)* series from UCLA's Latin American Center, has been men-

tioned before; it emphasizes sources for statistical data. These titles, together with those reviewed in the earlier articles, provide a useful checklist for researchers in foreign trade, finance, and public policy, as well as for academicians and librarians who seek information sources for Latin America. A bibliographical essay that focuses on periodical literature of the same region will appear in a future issue of the *Economic Review*.

International Historical Statistics: The Americas, 1750-1988, by B.R. Mitchell (New York: Stockton Press, 1993; 2d ed.) is a monumental collection of retrospective statistics for both North and South America.² The author is a fellow of Trinity College, University of Cambridge, where he lectures in the Economics Department. The objective of the book is to provide economists, historians, and policymakers, as well as other members of the academic, government, and business communities, statistical data suitable for cross-country studies. An attempt is made to ensure the best possible comparability of the statistics and to facilitate the identification of sources and access to them. The volume is replete with explicit notes on credibility of the source material.

Although the title implies that the book provides statistics from 1750 through 1988, it will come as no surprise that data for the earlier years, which cover only population, are sketchy and not rigorously comparable. For instance, Table A1, "South America: Population of Countries" (total population by sex) shows data from eighteenth-century censuses by actual years, detailing information about data sources. On the other hand, in Table A4, "South America: Population of Major Cities," the first column is titled "c1750," with footnotes as needed to document actual years the data were recorded.

The engaging introduction of *International Historical Statistics: The Americas, 1750-1988* emphasizes the increasing recognition of historical statistics as "major raw material" for the study and planning of economic growth and development. It also observes that "numbers begin to attain a level of subtlety and precision beyond that of words."³ Without belaboring a warning against "careless and casual use [of statistical data] over time and between countries," Mitchell describes pitfalls existing for the unwary, urging thoughtful skepticism. (Consider, for example, whether data were actually by-products of a military preparedness program for which men may have misrepresented their true age to avoid conscription so that the age distribution of the male population is biased.) Other introductory information includes a three-page list of

official national statistical sources that have been most often cited, weights and measures conversion ratios, and symbols used in the text.

The statistical tables constituting the body of the text are arranged in ten broad subject divisions designated A through J, with major groups within each. The number of groups ranges from two, in "Table I, Education" ("Pupils and Teachers in Schools" and "Students in Universities"), to twenty-five in "Table D, Industry" (which includes "Indices of Industrial Production" as well as imports and exports of coal, petroleum, and iron ore, by main trading countries).⁴

The tables in *International Historical Statistics* mirror the demographic and socioeconomic evolution in Western Hemisphere nations and the growth in importance of numerical records for national and international purposes. The tables reflect how national censusing began and developed in Latin America and became important for cross-country comparisons. In 1945 the newly founded United Nations took up the task begun by the League of Nations of collecting and publishing uniform national and international statistical data, which have proved extremely useful for policymakers, economists, and financiers in the last half-century. Mitchell surveys an abundance of these data, especially in tables for external trade, finance, and national accounts, for which he draws on sources like the International Monetary Fund's *International Financial Statistics* and the International Labour Organization's *Yearbook of Labour Statistics*. Other sources include the United Nations' Educational, Scientific, and Cultural Organisation (UNESCO) and the United Nations Food and Agricultural Organisation (FAO), as well as the League of Nations. A useful addition to this volume would be a complete list of international organizations whose statistical publications have been cited.

Admittedly, many of the modern data in *International Historical Statistics* are available in machine-readable format and might be profitably downloaded for computerized calculation and study. At the same time, even those with the most advanced computational technology at their disposal will probably find the volume (and others in its set) useful; the compendium will be a strong resource in libraries and research units where quantification is a concern in economics, public policymaking, and history.

The *Statistical Abstract of Latin America (SALA)* (Los Angeles: UCLA Latin American Center; annually; began 1955) is a cornerstone for building a reference collection of Latin American statistical data. *SALA 28* (28th ed., 1990) was reviewed and recommended in an

Table 1
U.S. Exports to Latin America, 1988-93
(Millions of Dollars)

Country	1988	1989	1990	1991	1992	1993 ^a	Percent Change Since 1988
Total	43,859	49,080	53,930	63,441	75,799	78,476	78.9
Mexico	20,628	24,982	28,279	33,277	40,592	41,635	101.8
Brazil	4,266	4,804	5,048	6,148	5,751	6,045	41.7
Argentina	1,054	1,039	1,179	2,045	3,223	3,771	257.8
Venezuela	4,612	3,025	3,108	4,656	5,444	—	—
Colombia	1,754	1,924	2,029	1,952	3,286	3,229	84.1
Chile	1,066	1,414	1,664	1,839	2,466	—	—

^a Preliminary

Source: U.S. Department of Commerce, *U.S. Foreign Trade Highlights 1992*; *U.S. Merchandise Trade Report for December 1993* (FT900).

earlier essay. The edition now at hand, *SALA 30* (Volume 30, Parts 1 and 2, 1993), warrants additional comment here as the latest in the *SALA* series.⁵

Comprehensive and detailed, *SALA 30* is a statistical reference for current and historical data on the twenty "standard definition" Latin American countries.⁶ Data typically are gathered from international agencies, permitting uniformly defined cross-country comparisons. Time series typically range twenty or more years depending upon the subject matter of the tables.

Part 1 of Volume 30 consists of seven sections that coalesce sets of related statistics by country: geography and land tenure; transportation and communication; population, health, education, and welfare; politics, religion, and the military; working conditions and migration; illegal and legal industry; and the concluding section, which contains three scholarly articles of potential interest to public policymakers, economists, and demographers, among others.⁷ For example, the first of these—"United States Foreign Assistance to Central America, 1946-89: A Tool of Foreign Policy," by Christof Anders Weber—presents data on U.S. foreign assistance to the Central American countries, focusing particularly on the case of aid to El Salvador.⁸ Weber provides abundant scholarly documentation in his article, and the titles of its data tables are included in the general index at the end of the volume.⁹

Part 2 of *SALA 30* has five sections (Parts VIII-XII), continuing the format of sets of related data. These data sets cover mining, energy, and sea and

land transportation; foreign trade; financial flows; national accounts, government policy, and finance; and prices. The final section presents two articles about development of (inferences from) the data: "Food Production in Latin America, 1952-90," by Maureen DeLuca, and "Mexico's 'Lost Decade,' 1980-90: Evidence on Class Structure and Professional Employment from the 1990 Census," by David E. Lorey and Aida Mostkoff Linares.

The data series presented throughout both parts of *SALA 30* offer abundant topics, some of which go well beyond the socioeconomic data one might expect. For example, there is a table for "Major Earthquakes in Latin America, 1797-1992" (Table 125), which begins with the February 4, 1797, Quito, Ecuador, earthquake that took 41,000 lives.

Footnotes to *SALA* tabular data can be used as an index to both exotic and routine data sources. The most frequently cited sources are itemized on the inside covers of both parts of *SALA 30*, providing easy-to-use survey tools for identifying relevant statistical agencies.

Nonetheless, annoying editorial and production problems plague *SALA 30*. Sloppy bibliographical and organizational detail in the volume mar access to its content. And there is a lack of logic behind the hierarchical use of "part" and "chapter" that is confusing and results in time lost trying to grasp the flow of substantive information—for example, the fact that the word *part* is used both for physical volumes and for section headings at groups of related tables. Wrongly

paginated entries in the table of contents in Part I are particularly bothersome, as is the mistaken designation of "Geography" as Chapter 30 when it is actually Chapter 1. Further, the table of contents shows the years covered by Weber's study on U.S. foreign assistance as beginning with 1956 while it actually dates back to 1946, a mistake that could be costly to researchers. (The fifty-two year time series in the article, however, are no less welcome.)

Despite these problems, the SALA series traditionally has been, and continues to be, a formidable array of official and unofficial statistical data on many Latin American phenomena. It should continue to prove useful for quantitative research in banking and finance, marketing, and the export/import trade. Economists and public policy researchers should also find it helpful.

The *Economic Survey of Latin America and the Caribbean 1991* (Santiago, Chile: United Nations' Economic Commission for Latin America and the Caribbean [ECLAC]; text in English and Spanish; annually; began 1984 in present format) is published in two volumes. The first volume discusses and illustrates, with tables and graphs, principal macroeconomic topics for various geographical entities: Latin America and the Caribbean as a whole; the oil-exporting and the non-oil-exporting countries; regions (including the Organization of Eastern Caribbean States—Antigua and Barbuda, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines); and individual countries. The second volume consists of nineteen individual country studies.

Volume I consists of three main parts and a "Statistical Annex." Time series typically cover ten to twenty years, although this range may vary. The first part, "Economic Trends in Latin America and the Caribbean in 1991," for instance, embraces main economic trends, levels of economic activity, total supply and demand, and macroeconomic policy and inflation. The second part, "The International Economy," looks at trends in global output and policies; international trade; the international oil market; and savings, investment, and the international transfer of resources. The third part, "Exchange Rate Policy in Latin America in the early 1990's," examines the role of the exchange rate, measurement of real exchange rates, trends in exchange rate policies in the 1980s, and the new economic and financial situation in the region and the world. The "Statistical Annex" consists of nineteen pages of tables, one for each country, breaking out real effective exchange rate indexes for 1978-91.

The nineteen country studies in Volume II differ in format from country to country, but they typically provide a comprehensive discussion of recent economic trends, economic policy, and the economic outlook. Discussions are supported by graphs and charts correlating selected economic indicators (for example, "Growth of GDP, Imports and Investment, 1980-1990"). Tables for major economic indicators complete the studies, which vary in length but are typically about twenty-five pages long.

ECLAC's *Economic Survey of Latin America and the Caribbean* changes its format from year to year, a practice exasperating to readers comparing information in two or more years' volumes. In three consecutive recent editions, the tables of contents for the first volumes (of the two-volume sets) listed a "Statistical Annex," a "Statistical Appendix," and, in the earliest of the three sets, neither. Exigencies of collecting and publishing international data are well known, but a welcome addition to ECLAC's *Economic Survey of Latin America and the Caribbean* would be more consistent formatting.

Major U.S. accounting firms frequently publish for their clients series of references with information essential for international trade and investment. These series include studies of large and small countries. Ernst & Young International, Ltd., for instance, publishes an *International Business Series* that includes country studies and a worldwide tax guide. Typical in the series is the latest volume, *Doing Business in Argentina* (New York: Ernst & Young International Ltd., 1992). A brief and practical book, it provides an overview of the fundamentals that investors and business people need to know about the Argentinean investment and trade climate.

An executive summary opens the book, and the chapters that follow expound upon the rubrics of the executive summary: government restrictions on foreign investment; government attitude and incentives; tax system, financial reporting, and audit requirements; other matters of concern to foreign investors such as tax legislation that changes annually; and useful addresses and telephone numbers. The volume concludes with appendixes that offer useful comparative macroeconomic and financial data (comparative annual series ranging from three to five years, depending upon availability of the data) on a variety of subjects: economic performance statistics, currency exchange, major industries, imports and exports, major trading partners, corporation tax calculation, depreciation rates, deductible expenses for individuals, nonresident withholding taxes,

and treaty withholding taxes. When appropriate, chapters bear editorial comment in italics at their beginning. For instance, Chapter C, "Foreign Investment," includes the following observations: "Argentina encourages foreign investment, particularly now that economic growth and privatization are a priority. Consequently, prior government approval of foreign investments is no longer required."

Each country study in the *International Business Series* gives a caveat noting the complexity of making foreign investment decisions and pointing out the necessity for an intimate knowledge of a country's commercial climate and how rapidly conditions may change. Accordingly, there is an "as of" note in each book reflecting the date when its text was completed and considered up-to-date. All reference books, of course, share a lag time between completion of a manuscript and date of publication and availability, but the "as of" feature makes explicit the date after which updated information will be required.

Ernst & Young International, Ltd., publishes *International Business Series* country studies for the following Latin American nations: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, and Venezuela. The company also makes available its *Worldwide Corporate Tax Guide and Directory*, an annual, providing tax information on all the Latin American nations mentioned above (and other nations around the world). The tax guide, while not exhaustive, does provide more detailed information than found in the country studies.

The country studies and worldwide tax guides provide executives and researchers compact, well-organized overviews of foreign business, economic, financial, and political factors, and they do so with a measure of substantive detail. Some topical information in the handbooks may need updating, yet information on many patterns and trends remains useful over time. While the Ernst & Young country studies do not offer strict intercountry comparability, the volume-to-volume protocol of information follows roughly the same sequence. The studies provide useful first steps for someone investigating financial and trade information about major Latin American countries.

Guia 1993 (Banking Guide 1993) (Bogota, Colombia: Latin American Federation of Banks [FELABAN], 1993; began 1983) offers basic bank information similar to that found in U.S. bank directories. However, *Guia 1993* enhances these bank data by adding basic national economic data, country by country, to the

separate chapters on the nineteen Latin American countries that are members of FELABAN. Five-year comparative tables, by country, of selected economic indicators (GNP and GDP, external debt and foreign investment, and exports and debt servicing) are a useful portion of the section called "Guidelines for the Foreign Investor." *Guia 1993*, the twelfth edition, attempts to summarize the main factors that foreign entrepreneurs and bankers should consider when analyzing decision-making in Latin American countries. The guide consists of three main sections: a calendar showing bank holidays; banking system development, financial statistics, and the main directory of established banks in each of the nineteen FELABAN countries; and, finally, an overview of the economic indicators, taxation regime, and legal restrictions a foreign investor may encounter when trying to establish business in any of these countries.

Bankers and other investors may particularly welcome acquaintance with FELABAN, which was founded in 1965 in Argentina and subsequently moved to Bogota, Colombia. Its function is to bring together Latin American banks to promote international economic integration and bank development. Through technical committees that serve as liaisons with banks, the General Secretariat in Bogota coordinates FELABAN programs that focus not only on economic development but also on technical matters like bank automation.

Researchers who do not read Spanish should not be put off by Spanish-only sections of *Guia 1993*. The most important portions of the guide are bilingual: for example, individual banking directories, by country, with sketches of the country's total population, economically active population, population employed in banking, and exchange rate, as well as the economic indicators section, also by country. Some tables are presented solely in Spanish, but their nature seems self-evident.

The bank directory sections show individual bank assets, deposits, capital and reserves, loans, and profits. They also furnish names of executives; mailing addresses; and telephone, telex, and fax numbers, along with information on the date each institution was founded, whether it is privately owned, its number of employees, and so on.

This compact one-volume guide, combining macroeconomic and banking information, will serve many researchers as a beginning step in those two areas. *Guia 1993* can be an opening wedge for marketing and the establishment of commercial and financial contacts with the FELABAN banks.

Latin America: A Directory and Sourcebook 1993 (London: Euromonitor PLC, 1993; 1st ed.) carefully delimits its coverage to the eight leading Latin American economies: Brazil, Mexico, Argentina, Venezuela, Chile, Colombia, Ecuador, and Peru. It provides an expanded analysis of five countries it deems "major markets"—Argentina, Brazil, Chile, Mexico, and Venezuela.

The stated aim of this directory/sourcebook is to serve as an essential marketing tool with clearly sourced and up-to-date statistical data providing details about the major companies in each country as well as an overview of the regional context. The book consists of four sections: "Latin America in the 1990's: An Overview," "Major Companies," "Sources of Information," and "Statistical Factfile." A detailed general index concludes the volume.

The overview of Latin America presents a discussion of the region's leading economies in a worldwide economic context. The discussion also touches on Latin America as a consumer market, considering such factors as levels of disposable income, urban/rural demographics, and the possibility of future infrastructure inadequacies. The overview also compares regions in terms of population (total as well as urban versus rural), illiteracy rates, gross domestic product, sovereign debt, and illegal drug infrastructure and activities.

The overview section also provides individual country risk studies for the five "major markets" mentioned earlier. These studies offer succinctly organized overviews of macroeconomic, demographic, and political factors based on official national and international sources. All the discussions in the overview section include tables based on data from international agencies like the World Bank, the International Labour Organization, and the International Monetary Fund, permitting uniformity for valid cross-country data comparisons. From time to time Euromonitor cites information from its own widespread data base. The time span of data series typically is ten years or less.

The book's second section provides information about major companies in the eight leading Latin American national economies. The companies are grouped by industry: consumer goods manufacturers, heavy and light industrial companies, key retailers, service companies, passenger and cargo transport companies, and banks and finance. The entry for each company contains addresses; telephone, telex, and fax numbers; and a description of business activity. Personnel information such as the names of management or the number of employees is not included. Some financial information is provided "when possible."

The third section's lists of national and international, official and privately collected information sources justify the publication's claim to being a sourcebook. The section includes international, regional, and country (for the eight economies profiled) information sources, including official agencies, private research publishers, trade journals, data bases, research academies and institutes, major libraries, regional trade associations, and trade unions.

A "Statistical Factfile," the fourth section, contains coded tables for macroeconomic indicators and national level population figures. A coded access list for these data sets appears immediately after the book's table of contents. Much of the data for the tables comes from the International Monetary Fund as well as some other international agencies, such as the United Nations' Food and Agriculture Organization and the World Tourism Organization. This commonality of data sources often permits reasonably systematic cross-country comparisons; however, for some tables such comparisons cannot be made because part of the data are taken from various national statistical agencies, whose technical definitions may differ.

Although the statistical tables are faithfully documented, there is no master list of references, so researchers must comb through the "Sources of Information" sections to find out how to contact statistical agencies for clarification or augmentation of data. A list of agency acronyms with their meanings would also make the book easier to use.

These drawbacks notwithstanding, *Latin America: A Directory and Sourcebook* sets itself apart from run-of-the-mill coverage of marketing topics in its designated areas. The book is highly recommended as a reference on Latin American trade and finance.

The *World Business Directory* (Detroit: Gale Research, Inc.; produced by the World Trade Centers Association [WTCA], New York; annually; began 1992) indexes more than 100,000 international trade businesses around the world, including Latin America, in its premier four-volume edition. As one might expect, the WTCA has worldwide resources for assembling its formidable directory, an important component of the WTCA program to promote international business relationships and trade and to increase Third World participation in trade.

The directory covers all Latin American countries, the amount of information relating approximately to each country's volume of participation in world trade. Each geographic section begins with complete listings for World Trade Centers located in that area. Each

company listing includes information such as telephone, telex, and fax numbers; executives' names and titles; financial data; the number of employees; company type; products traded; and industry activity. The directory provides product information through a "Harmonized Commodity Description and Coding System" (HS) to facilitate world trade and expedite statistical compilation. Volumes 1-3 consist of names of companies listed alphabetically by country (with countries, likewise, arranged in alphabetical order). Volume 4 contains three indexes to the information in Volumes 1-3: (1) a product index, arranged by HS codes; (2) an industry index, with countries classified

by principal business activities; and (3) an alphabetical index.

The *World Business Directory* can help researchers explore international markets or establish joint ventures by locating potential trading partners, by name or by product. The coding system allows the user to target specific products for marketing purposes or other analysis. The directory is a nicely designed, self-contained reference for identifying companies by industry around the world and providing standardized information about them. It is also available in machine-readable formats on magnetic tape and floppy disk.

Notes

1. The series of bibliographical essays on sources of information on foreign investment and trade appeared as follows in the Federal Reserve Bank of Atlanta's *Economic Review*: "International Trade and Finance Reference Sources," May/June 1991, 30-37; "International Trade and Finance Information Sources: A Guide to Periodical Literature," July/August 1991, 55-64; "Doing Business in Eastern Europe and the Newly Independent States: Information Sources to Get Started," November/December 1992, 38-46; "Business Information Sources for Eastern Europe and the Newly Independent States: A Guide to Periodical Literature," January/February 1993, 37-41.
2. This volume is one in a set of three by the same author and publisher, covering different world areas. The other two, *International Historical Statistics: Europe, 1750-1988* and *International Statistics: Africa, Asia and Australasia, 1750-1988*, are available at this time. A fourth volume, announced for October 1994, will cover Eastern Europe and the newly independent states of the former Soviet Union.
North America, as here defined, consists of Canada, Costa Rica, Cuba, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Trinidad and Tobago, and the United States of America. South America is defined as Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela. Brief sketches provide geographical information and key historical dates for the national entities.
3. W. Paul Strassman, *Risk and Technological Innovation* (Ithaca: Cornell University Press, 1959), 5.
4. Other data divisions enumerated in the table of contents include population and vital statistics, labor force, agriculture, external trade, transport and communications, finance, prices, and national accounts.
5. Since 1976 SALA has used a "volume" designation rather than a "year of edition" in its title. Hence, Volumes 17 through 28, published from 1976 to 1990, were called "editions." Moreover, with Volume 29 (1992) SALA began to be published in two parts making up one volume number. The complete Volumes 29 and 30 come in two books each, called Part 1 and Part 2.
6. The twenty "standard definition" countries (all of which are sovereign nations, thus excluding, for instance, protectorates such as Martinique and French Guiana) are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela. This standard definition omits the two former British protectorates Belize and Guyana as well as Suriname, a former Dutch protectorate, which are often included in such lists.
7. These sections, actually called "Parts I-VII," should not be confused with "Parts 1 and 2" of Volume 30 itself.
8. Central America is defined as Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.
9. For a discussion of U.S. foreign assistance to other Latin American countries, see Christof Anders Weber, "Announced U.S. Assistance to Latin America, 1946-88: Who gets it? How much? and When?" *Statistical Abstract of Latin America* 28, chap. 35.

FEDERAL
RESERVE
BANK OF
ATLANTA

Public Affairs Department
104 Marietta Street, N.W.
Atlanta, Georgia 30303-2713
(4 0 4) 5 2 1 - 8 0 2 0

**Bulk Rate
U.S. Postage
PAID
Atlanta, GA
Permit 292**

